Defense discourse in Balinese Pura architecture

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Abstract. The Balinese architecture known today takes many patterns from the architecture of the Majapahit Kingdom in Java. Balinese architecture was built by Majapahit refugees, those pioneered by the priest Danghyang Nirartha in collaboration with Bali King Waturenggong. Nirartha built several important temples on the coast of Bali. Since the beginning, many thought that the Temple, which is now used as a place of worship, was not built for the function as it is known today. Worship that brings many people does not match the form of Pura design. On the other hand, some of the characteristics of a defensive fort are more appropriate and visible in the building and temple environment. Through an architectural survey method, this paper attempts to uncover the above phenomena. Several temples were chosen as objects of study, representing similar buildings in urban, rural, and coastal areas. In the end, it appears that Nirartha was designing the Temple he built with somehow a defensive function.

1. Introduction
The year 1478 was a dark age in the history of the Nusantara archipelago. The Majapahit Kingdom, the one that dominates Southeast Asia for many years, had fallen into the hands of the Islamic Kingdom of Demak. A very fast political change occurred in Java. The dominance of Hindu culture disappeared and was replaced by Islamic culture. For commoners, this may be accepted with resignation. But not with Majapahit royal officials, aristocrats, cultural observers, architects, artists, doctors, and the royal elite. Most of them refuse to adopt a new culture, forcing them to move away from the center of power. Some of them moved to the foot of Mount Rawung in East Java, where they met the hermit Mpu Markandya who had long been concerned about observing the developments of the events that took place in Majapahit. As noted by the Lontar Markandya Purana, a manuscript written on palm leaves, Markandya then escorted the Majapahit refugees to the east, a symbol of new life. The goal is to reach the island of Bali, where hope is still there.

Bali is a unique land. It does not have crops similar to those of Java. The Islamic traders were not interested in trading to Bali with the same intensity as Java. After all, Bali has a very close relationship with its Hindu brothers on the island of Java. The Balinese Hindu religion that was born by Mpu Kuturan - Javanese Hindu elder - 400 years earlier, so Bali is the perfect asylum for anyone who comes from Majapahit. The exodus journey to Bali was carried out in two waves from the island of Java. The first wave failed in the middle of the journey due to a lack of knowledge and inadequate logistics. The second trip involved 2000 people who made it to the eastern tip of Java Island. Miraculously these Majapahit fugitives managed to cross the Bali Strait without using a boat, according to legend.

They arrived in the area, which is now the Gianyar Regency. The 2,000 refugees from Majapahit were exhausted, and most of them were sick. Danghyang Nirartha, one of the priests, then took water...
from a nearby river and gave it to the sick group members. The water succeeded in making them recover so that the area was then called "ubad"—a medicine. Later, ubad then changed to Ubud, the name of a village with a high artistic culture known to the whole world[1]. Meanwhile, Nirartha, who healed the sick, became known as Pedanda Sakti Wawu Rawuh (the newly arrived powerful priest).

The news about the coming of experts, artists, and the elite of Majapahit was heard by the King of Bali, Waturenggong, who reigned in Gelgel. He called Danghyang Nirartha to his palace. Nirartha appeared in 1489, which was then an important milestone in Balinese history. Through a short discussion, Waturenggong appointed Nirartha to be the royal advisor and allowed the migrants from Majapahit to live a new life as Balinese. Nirartha offered technical assistance from Majapahit experts to develop Bali into a new Majapahit, which the King happily accepted. Since that day, the Majapahit people began working with the Balinese kingdom, rebuilding their self-esteem and pride.

However, the idea of an invasion from the Javanese kingdom remained a concern of Nirartha. Sooner or later, Bali will also be exposed. Nirartha then asked for permission to appear before the King and then expressed his desire to build temples in coastal areas to fortify Bali from outside influences. King Waturenggong accepted the idea. Nirartha then set out on a second holy journey. One by one, the temples were founded, some of which are well known and still fully function today, as seen in Tanah Lot and Uluwatu. Uluwatu is the most beautiful Temple, built on the southern cliffs of the island facing the Indian ocean. It was there that Nirartha spent his last days, and then moksa disappeared into the unification with the universe.

Nirartha introduced the new temple plan, which is by design divided into three parts of courtyards: jaba sisi (outer), jaba tengah (central), and jeroan (inner), as seen in Figure 1. The temple courtyard division is created on the idea of triloka macrocosm. All three represent: bhurloka (earth), bhuvaloka (sky) and svaaloka (heaven). In addition, there are sometimes smaller temples lying of only two parts, jaba sisi and jeroan. The 2 divisions symbolizes the upper realm (urdhaa) and the lower realm (adhaa) called aliua and pativi [2]. Inter zone access is made through a narrow gate suitable for one or two standing side by side. After each gate lies a divider caled ailinga-aling, stands to protect the inside from being seen by people outside. All the elements are encircled by a heavy wall, the penyengker [3].

Nirartha and all his men developed a lot of pura in Bali, creating a new temple pattern for the Balinese. These days, those temples are known as a worship area to praise the gods. However, there is hesitancy that Nirartha built a temple with devotion to gods as the main reason. The word Pura is derived from the Sanskrit word pur, a fortress[4]. A building with thick walls and restricted access are characteristics of temples in general. Considering the characteristics of the Temple that has been developed since Nirartha's time, it seems that he developed Pura to be a fortress—rather than Temple—which visually implies a certain meaning for Balinese to these days. A visual—spiritual artifacts as a cue for the Balinese and Majapahit descendants to stay close to the Hindu practice, to avoid converting
The term pura, which has been interpreted as a holy place for Balinese Hindus, originally meant the King's palace or royal city. The Balinese Hindus at that time performed their prayers at a holy place called Kahyangan or Hyang. The fact is mentioned in the Turunyan inscription dating back to 891 AD, containing the term "Sanghyang" and the Pura Kehen inscription containing the term "Hyang". In the Dictionary of Hindu Religious Terms, the word "parhyangan" is defined as a place to worship gods.

Etymologically, the word "pura" comes from the root word "pur" which means fort. Meanwhile, the word "pura" means "fortified city" or "palace". According to Titib [5] the change in the meaning of 'temple' as a city or palace to a holy place is thought to have occurred after the reign of King Waturenggong at Gelgel in 1460-1550 AD, which is associated with the time Dang Hyang Nirartha made arrangements and improvements over religious order in Bali. After the term Pura is used to describing the name of a holy place, it was replaced by pura to mention the royal palace or keraton.

1.1 Fortress of the Nusantara Archipelago
The fort system has been known to the people of the archipelago since the early establishment of the social system, in the form of a circular pattern of land embankments with a crust stone to protect settlements or important places [6]. The outside of the fort -like a fortress in Europe- was equipped with a defensive moat, although most of it was not. Ancient fortresses in the form of an earthen embankment are found in Way Sekampung, Lampung, and in Lahat, South Sumatra, among others. Such fortresses are commonly natural-based fortresses, like a stone fortress in Buton Palace, with a plan following the existing natural landscape. Historical records from the past, such as Nagarakrtagama, Serat Pararaton, and Kidung Sorandaka, clearly describe a military "fortress" at Pajarakar, utilized by former Prime Minister Arya Nambi to defend against attacks by the Majapahit King Jayanegara troops during what is known as the Nambi rebellion. Another Majapahit fortress remains that can still be seen today is the Nagari Lamajang-Biting site, Kutoren Village, Lumajang. The building was developed by Menak Koncar, Duke of Majapahit, around the 13th century AD. The name Biting refers to the local word "Benteng" (fortress). The shape follows four river streams: Bondoyudo on the north side, Winong on the east side, Cangkring on the south side, and Peloso on the west side. The river is used as a natural barrier, such as a defensive trench in the fortress of western civilization. This fort is also equipped with six towers, reminiscent of the bastions in Europe or the fort of the Yogyakarta Palace in central Java.

Chinese historical record of the Tang Dynasty from the 7th century AD, describing the inhabitants of the Kalingga Kingdom in Java, who built a wooden fort. Later, The Ratuboko site from the 9th century AD clearly shows a model of a fort on a hill with a steep embankment layered with stone blocks, a two-layer perimeter fence, a moat, guard posts, watchtowers, and even a rescue passage underground. The building was used by the King of Sriwijaya, Balapuradewa, to withstand attacks from his enemies, his own brother-in-law Rakai Pikatan. Based on I-Tsing's records from China, the Sriwijaya was indeed surrounded by fortresses, which were probably wooden or bamboo blocks planted in a certain order, covered with bushes.

Meanwhile, Ma Huan in Yingya Shenglan, written in the 15th century AD, describes the fort as the residence of the King in Majapahit. The walls are bricks more than 9 m high and 90 m long. The gate is made up of two layers. The houses are located 9-10 meters above ground level.

The Cane inscription (1021 AD) from the time of King Airlangga shows the appreciation received by the people of Cane Village who fought from a fortress to fend off enemies from the west to the glory of the King. The King himself lived in a fortress at a location called Wwatan Mas, in a building with two gates facing west as access and through a tall and thick stone fence. A steep embankment lined with stone blocks, equipped with a pool at the front. Its position is topographically higher than the surrounding land, as is common in fort-palace buildings.

The combination of port and fort functions is recorded in the book of Pararaton, where Wisnuwardhana in 1271 ordered the establishment of a strategic fort Canggu Lor. Construction of the Canggu Lor fort to support the attack on Mahibit, which is thought to be located on the banks of the Brantas River, near Terung. This fort was created to equip, protect and support the operational authority of the Brantas River fort. The combination of ports and fortresses was developed during the Hindu-Buddhist period and becoming more prevalent during the Islamic era.
Although the shape of a modern fort is difficult to see on the island of Bali, the "fortress" is no stranger to the buildings discourse in the area. Kuta, for instance, which is now bustling with tourism, was previously a forest near the beach where Majapahit troops landed for the first time in 1334. The location was later known as "fortress," established by The Majapahit, as mentioned on the inscription at Pura Sanggaran, near Kuta [7]. It was told that Prime Minister Gajah Mada using the fortress as his starting point to conquer Bali. Soon after, he installed Kresna Kepakisan to rule as governor. Kepakisan and Gajahmada using the word Pura to name the "fortress" where the King lived, replacing the term kedaton, which was more popular on that day. The term Pura to describe the King's fortress was then widely spread on the island until the era of Danghyang Nirartha [8]. Although pura now means a place of worship to the gods, some Balinese temples still have stories of its use as a means of defense in actual battle [9, 10].

The fortress was mostly built by commoners, based on the size of the assignor's body. The measurements used are lengths, fathoms, feet, and other anthropometric measurements. This has resulted in variations in the shape and size of these similarly functioning objects across the archipelago. Fortress height usually over twice the height of a man. Therefore the foe can not see anything inside. The use of more standard units only began in the era of modern fortresses built under Portuguese influence, after 1545[11].

1.2 Fortress in general term
The classic fortress in the archipelago may have had influence from India, where it was known since Pre-Aryan times. There is some evidence that traces of ancient fortifications were found at several sites, such as Mohenjodaro, Harappa, and Chanhudaro. The fortresses were then destroyed by a herd of semi-nomadic communities, known as the Aryans.

In the sacred literature of Vedda, the term for the Aryan people is Puramdhara, which means fortress destroyer. The terms pura and puri are also found in the old Javanese language. This word from Sanskrit literally means "fortress, palace, kingdom, city, the capital city, the King's residence. Theoretically, a fortress can be described as a strong permanent fortification which may include a town[12]. It is mostly a military building built for defense purposes in warfare. The fortress has been built by mankind thousands of years ago in various forms and eventually developed into a more complex form. Being a solid shelter, the fortress was able to withstand sieges and launch suppression expeditions by land and sea against those who threatened its safety. As a place of defense, the fortress was mostly at an altitude, positioned near the beach or sea, to make it easier for the defender to see enemies coming from afar. Beyond their defensive conception, many fortresses also play important symbolic functions – to represent the status and independence of people inside[13]. General characteristics found in all fortresses[14] are as follows;

| Table 1: Fortress characteristics |
|----------------------------------|
| Characteristics       | Section |
| • Rectangular to octagonal buildings. | Plan     |
| • More than 5,000 m² area.        | Walls    |
| • More than 10 m high walls, with over 1 m of thickness. |         |
| • Two stories with various function according to the height. | Tower    |
| • Observation tower in the corner. |         |
| • One gate, in and out.            | Gate     |
| • Narrow access.                   | Access   |
2. Research Method
The architectural survey was held on *pura* building and environment. Three was selected to represent the features regarding the existence of Balinese temples. Pura Uluwatu for the original *pura* built by Niartha in coastal of southern Bali, Pura Desa Peliatan at Ubud to represent the character of *kahyangan tiga pura*, the original concept of Niartha for the Temple built in the center of the village, and Pura Jagatnata in Denpasar to represent urban *pura*, the city's largest one. The information obtained was then compared with the characteristics of the fortress environment in the literature, such as Kasdar[11], Wyley[12], Crystal[13], and Sari[14].

3. Results and Discussion
3.1 Pura Uluwatu
Pura Uluwatu lies on top of the hill at Pecatu Village, Kuta District, around 30 km south of Denpasar. It was built by Dang Hyang Niartha, a priest from Kediri, East Java. He came to Bali during the reign of Dalem Waturenggong before he founded the Temple on Pecatu Hill. After taking a spiritual journey around Bali, Dang Hyang Niartha returned to Uluwatu Temple. He completed his journey by then 'moksa,' leaving the world of 'marcapada' to be unified with the universe. The Temple's birthday ceremony, on the Anggara Kasih day, lasts for three consecutive days and is attended by thousands of Hindus. Uluwatu stands on 70 m above sea level cliff, jutting into the Indian Ocean. One must walk up a narrow-high stone staircase to get to the temple location. The temple building faces east, in contrast to other temples in Bali, which generally face west or south. While walking up the stairs to make it to the Temple, alongside the road on the outer edge, thousands of monkeys hanging frolic, greets from the nearby trees.

Table 2 describes the environment of Pura Uluwatu, which is sorted based on the fortress characteristics; plan, wall, tower, gate, and access.

| PLAN | A rectangular based plan, with additive and subtractive parts adjusted to the contoured elongated land on the cliff—1,000 m² of area. |
| WALL | Massive stone wall of over 2 m height. |
A bale kulkul on the northeast corner of the pura higher ground. Also, a tower-like meru in the inner court.

One main gate to enter the site.

Narrow and slopy access.

3.2 Pura Desa Gede Peliatan, Ubud
Pura Desa Gede Peliatan is known for its remarkable performing arts, music, and dance. The Temple is located at the village Peliatan, not far from the now overcrowded tourism spot of modern Ubud. Pura Desa Gede Peliatan is a complex of village's connected temples, the Pura Puseh and Pura Desa. The Temple has a large collection of very artistic paintings and sculptures. The whole area of Ubud and its surroundings is believed as the most architecturally advanced area since the time of Nirartha and Peliatan is among the finest villages in the modern Ubud District. By the time of The Netherland Indies, the regime uses an architecture style from the area and develop it as the official regional style, later famous as The Gianyar Style.

Table 3 describes the environment of Pura Desa Gede Peliatan, which is sorted based on the fortress characteristics; plan, wall, tower, gate, and access.
### Table 3. The Temple Pura Gede Peliatan, Ubud.

| PLAN | A perfect rectangular plan, 2,000 m² of area. |
| WALL | Massive brick wall. |
| TOWER | A bale kulkul on the east corner of the pura. Also a tower-like meru in the innercourt and one additional tower for device storage. |
| GATE | Narrow gate and additional aling-aling wall behind the gate. |
| ACCESS | Narrow access next to the village path. |

### 3.3 Pura Agung Jagatnatha, Denpasar
Pura Agung Jagatnatha is the largest Temple in Denpasar. It lies right next to the Bali Museum and the Puputan Badung town square. The construction of Pura Agung Jagatnatha was initiated by the locals for
the large number of Hindu immigrants who came to Denpasar and could not find a place of worship. The Parisada Hindu Darma Congress was then held on November 20, 1961, to solve this. The Congress approved the construction of a temple to accommodate ritual needs in an urban environment. Finally, on February 5, 1963, Bali Governor Anak Agung Bagus Sutedja gave permission to build the Temple. The Temple is officially named Jagatnatha.

Not only as a place of worship, Pura Agung Jagatnatha is also visited by tourists to see its beauty and uniqueness. Its location is on a very strategic tourist route. Visitors are never empty, whether they come to worship or just to enjoy the beauty of the Temple. Uniquely, this Pura Agung is open 24 hours a day for anyone who comes to worship. The only one that open 24/7 in all of Denpasar. The Temple was the work of the architect Anak Agung Ketut Anggara from the nearby village Belong, Denpasar. Besides designing the buildings, at the same time, he also leads the undagi – traditional building expert- on the field. Like most temples in Bali, the building position faces towards Mount Agung on the central highland of the island, which corresponds to the Hindus' belief in the mountain palace of the gods. Soon after, Pura Agung Jagatnatha was inaugurated through a ceremony on May 13, 1968.

**Table 4** describes the environment of Pura Agung Jagatnatha, which is sorted based on the fortress characteristics; plan, wall, tower, gate, and access.

**Table 4.** The Temple *Pura Agung Jagatnatha*, Denpasar.

| PLAN | A rectangular plan, 2,000 m\(^2\) of area. |
| WALL | Massive brick wall of over 2 m height. |
| TOWER | *A bale kulkul* on the north and south corner of the *pura*. |
Wide gate on the candi bentar, sufficient for 3 or 4 people. Narrow gate on Kori Agung, also additional aling-aling wall behind the gate.

Narrow access next to the lane beside the city square.

The overall characteristics comparison between the temples analyzed in this study and the fortress in general is described in the following table.

**Table 5.** Characteristic comparison between Puras and fortress in general

|                | Fortress General Characteristic | Pura Luhur Uluwatu | Pura Desa Peliatan Ubud | Pura Jagatnata Denpasar |
|----------------|--------------------------------|--------------------|-------------------------|--------------------------|
| **Plan**       | ![Plan Diagram](image)         | ![Plan Diagram](image) | ![Plan Diagram](image) | ![Plan Diagram](image) |
|                | 5,000 m² of area               | 1,000 m² of area    | 2,000 m² of area        | 3,500 m² of area         |
| **Walls**      | High and thick wall            | High wall           | High wall               | High wall                |
| **Towers**     | Observation tower              | Tower of Meru and Bale Kulkul | Tower of Meru, Bale Kulkul and storage. | Tower of Meru and Bale Kulkul |
4. Conclusion
The research result shows that many of the fortress environment characteristics are found in Balinese Pura, which was built after the Nirartha era. As time goes by, 500 years after the era of Danghyang Nirartha, pura is getting closer to the fortress characteristics with high walls -twice the height of a man- and the addition of towers. Closer to the urban environment, the fortress character is felt more pronounced. Perhaps it may not be the sole purpose since Nirartha definitely did not expect his work would last as a pattern applied many years later. Since architecture is the reflection of people's way of life, it gives the impression that Nirartha, his Majapahit followers, and the Balinese have successfully survived the power shifting influence on the land of Java nearby.

This understanding has survived to this day. Temples built outside the island of Bali are always said to be a "fortress of faith," protecting the Hindus from the infiltration of other beliefs [15].

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