

# WAT CHAIWATTHANARAM: A NEW ASSESSMENT OF ITS CONFIGURATION AND DATING

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## ABSTRACT

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Wat Chaiwatthanaram is a 17<sup>th</sup> century Buddhist temple bearing a magnificent plan and unique architectural style, located in Ayutthaya, some 77 km due north of Bangkok. Although it is believed to have been completely constructed at the beginning of King Prasat Thong's reign (AD 1630-1656), examining overlooked written evidence of the Three Seals Law in the Inheritance Section yields a more precise date of Wat Chaiwatthanaram's construction, which is significantly earlier than that cited in previous studies. Notably, this study evaluates the significance of the base of a wooden-masonry building located north of the *ubosot* (ordination hall), previously identified as an ordinary 'Sala' (pavilion) in the Fine Arts Department's excavation report, or a 'Phlapphla Thong pavilion' (a royal gilded lacquered pavilion). That has never before been explained. Furthermore, by employing the methodology of architectural art history and archaeology, this study evaluates the architectural reconstruction of Wat Chaiwatthanaram. Its reconstruction can be divided into three main groups in various degrees of deterioration, namely, masonry construction, wood-masonry construction and wood construction. Group 1 consists of well-preserved masonry construction. The main *prang* and the subsidiary *prangs* at the corners remain in a good condition. Group 2 is the group of wood-masonry construction that has been partially destroyed, such as *Meru Thit Meru Rai* (The eight Meru structures) and the Gallery. Relative evidence is required in order to create a solid assumption of its architectural reconstruction. For example, the location of a wooden structure can be used to trace the gable roof. Group 3 is the group entailing wooden construction, 'Phlapphla Thong pavilion' is mostly destroyed and includes remnants of archaeological evidence, e.g. the boundaries of construction and the remains of wooden pillars, which can be compared to a similar type of building at Wat Yai Suwannaram's preaching hall. However, the study of *Phlapphla Thong pavilion* and *ubosot* remains controversial for the architectural reconstruction, and calls for further research when more evidence is found in the future.

**Keywords:** Wat Chaiwatthanaram; Ayutthaya; King Prasat Thong; King Song Tham

## 1. INTRODUCTION

Wat Chaiwatthanaram was a well-planned temple as were all buildings constructed at the time. Conversely, other Ayutthaya temples were gradually constructed and later added onto over time. This left their plans untidy as compared to Wat Chaiwatthanaram. Furthermore, it is evidence that Wat Chaiwatthanaram

features the revival of setting a main *prang*, previously substituted by the bell-shaped *chedi*, as the main stupa of the temple. Remarkably, this revival enabled *prang* to be further developed afterwards.

As a result of the aforementioned significance of Wat Chaiwatthanaram and having considerable evidence remaining in good condition, the reconstruction of Wat Chaiwatthanaram can be accomplished by employing those remaining buildings with the same axial-plan symmetry as the temple.

This study employed a 3D Laser Scanner and a survey at Wat Chaiwatthanaram to create a Point Cloud Image, totalling 75 points in all, from 24 to 30 September 2014 and on 24 May 2017. Thereafter, the Point Cloud Image was synthesised to analyse the structures, positions and distances of Wat Chaiwatthanaram's premises. Subsequently, the current architectural plan (2D CAD) was drafted. From those, the Building Information Modelling (BIM) of the original Ayutthaya period Wat Chaiwatthanaram was reconstructed under the methodology of Architectural Art History by integrating written and archaeological evidence and a comparative study of Ayutthaya architecture.

## 2. OBJECTIVE

The objective of this study was to employ an interdisciplinary approach based on Architectural Art History and Archaeology. In other words, historical documents, excavation reports, the survey of historical ruins with the 3D Laser Scanner and the comparative study of Ayutthaya architecture were employed to reconstruct the original condition of Wat Chaiwatthanaram.

## 3. THE PLAN AND ARCHITECTURE OF WAT CHAIWATTHANARAM FROM A NEW SURVEY

Wat Chaiwatthanaram is located on the bank of the Chao Phraya River at the southwest of Ayutthaya city island. From a centralised plan, the main *prang* and its subsidiary *prangs* were built on the same base and the roofed corridor connecting the eight Meru structures (*Meru Thit Meru Rai*) formed a set of enclosing cloisters.

The plan of the temple is based on an east-west axis. The temple orientation is eastward toward to the Chao Phraya River. This plan forms a Buddhist zone enclosed by an outer wall measuring 160×300 metres.

The *ubosot*<sup>1</sup> is situated on an elevated platform connected with the inner area where the main *prang* and gallery are located. There are also a pair of stupas in the twelve-indented square plan located in front of the *ubosot*.

Remarkably, to the north of the *ubosot*, there is a building ruin with wooden pillars. This should be the *Phlapphla Thong pavilion*, the royal gilded lacquered pavilion mentioned in the Three Seals Law (Office of the Royal Society, 2007, p. 375), because the tradition holds that the royal pavilion is typically built in the form of a wooden, stilted building. At the western enclosure, there is a huge field surrounded by walls. The current study suggests that this field was presumably used for funerals for the royal family in the reign of King Prasat Thong and most likely adopted later as a monastery zone.

## 4. THE ARCHITECTURAL ELEMENTS OF WAT CHAIWATTHANARAM

### 4.1 The main *prang*

The main *prang* marks the revival of its re-setting as the main stupa of the temple, where it had been previously substituted by the bell-shaped stupa in the middle Ayutthaya period. Physically, this main *prang* is centrally located on a heightened base measuring 33 metres wide and long and 1.50 metres high.

The 3D Laser Scanner clearly shows that this main *prang* differs from *prangs* of the early Ayutthaya period, especially with respect to the symmetrical plan of its four directions and the similar sizes of its indented corners, which are congruent with the centralised plan of the inner Buddhist zone. Significantly, by comparing the scanned data with the *prang* of other temples in Ayutthaya, the main *prang* of Wat Chaiwatthanaram strongly demonstrates an architectural relation to the main *prang* of Wat Worachet and Wat Rakhang. This helps in a comparative dating of *prangs* in other temples, where evidence is not found. Additionally, the main *prang* retains numerous holes on its surface, to which copper plaques were presumably attached as decorations.

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<sup>1</sup> *Uposot* is a building in a Buddhist temple. It is also called the 'ordination hall' as it is where ordinations take place.





**Figure 1:** Aerial View of Wat Chaiwatthanaram Showing Its Centralised Plan

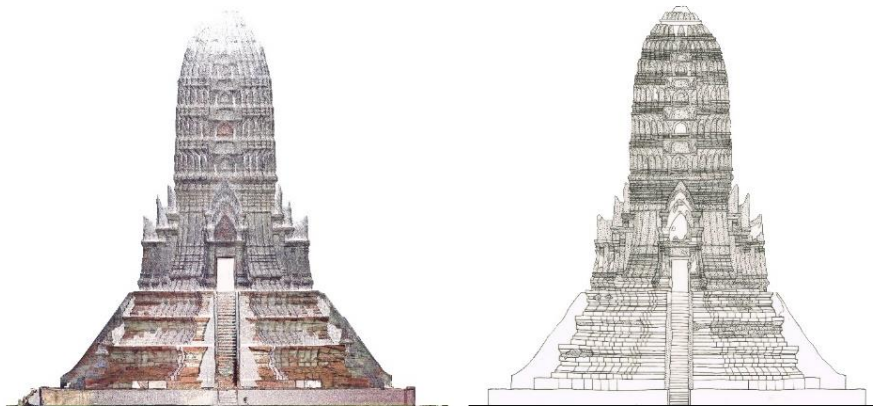


**Figure 2:** The Point Cloud Image of Wat Chaiwatthanaram Viewed from the Southeast





**Figure 3:** The Point Cloud Image Showing the Main *Prang* of Wat Chaiwatthanaram (Left), the *Prang* of Wat Worachet (Middle) and the Base of Wat Rakhang's *Prang* (Right)

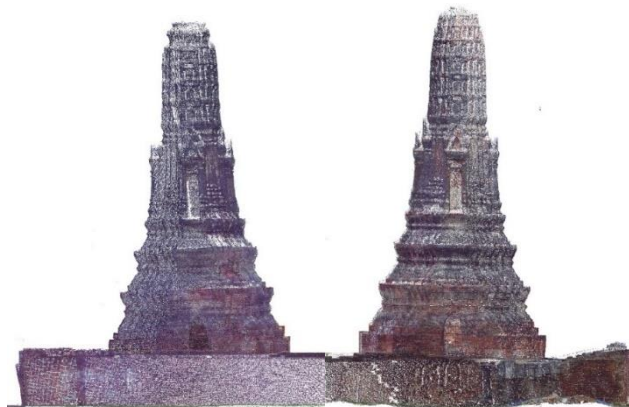


**Figure 4:** The Point Cloud Image of the Main *Prang* (Left) and Its Copy (Right), Wat Chaiwatthanaram

#### 4.2 The subsidiary prangs

The subsidiary *prangs* are located at the four corners of the same base as the main *prang*, forming the pentad of *prangs* of Wat Chaiwatthanaram. The lower height of these pentad *prangs* reinforces the subsidiary hierarchy of art of Wat Chaiwatthanaram, which was demoted in rank after that of the greatest, nine-spined *prang* of Wat Mahathat, reconstructed in the reign of King Prasat Thong.

The 3D Laser Scanner makes clear that the shapes of the subsidiary *prangs* are tall and slender, with different superimposed bases from the main *prang*, demonstrating their lower hierarchy. Likewise, numerous holes in the superstructure and middle section of these subsidiary *prangs* were presumably used to attach copper plaques as similar decorations to the main *prang*.



**Figure 5:** The Point Cloud Image of the Subsidiary *Prangs*, Wat Chaiwatthanaram



**Figure 6:** A Comparison Between the Nine-Spire *Prang* of Wat Mahathat and the Five-Spire *Prang* of Wat Chaiwatthanaram

#### 4.3 Meru Thit Meru Rai and the gallery

*Meru Thit Meru Rai*, the crematorium-like building and gallery are *masonry* constructions with wooden superstructures. Their function was to enclose the inner area as a sacred sphere, maintaining a physical separation from the mundane outside space. These surrounding constructions were also designated as barriers for the safety of the royalty while religious ceremonies were performed inside. Arguably, this is a traditional design of the royal temples in Ayutthaya, developed from the Khmer stone sanctuary.

Based on the Three Seals Law in the section of inheritance (Office of the Royal Society, 2007, p. 375), this study asserts that the '*Meru Thit*' and '*Meru Rai*' were originally called '*Phra Chetuphon*', meaning the residence of Buddha. Significantly, its meaning relates to the Jetavana *vihara* (Jetavana Monastery), built by Anathapindika as a religious offering, where the Lord Buddha dwelt here for 19 *Vassa* (*Vassa* referring to the three lunar months of the Buddhist annual retreat, during which monks are strictly prohibited from unnecessary travel. They retreat to their temples during those months of the rainy season).

Furthermore, it is essential to note that the term '*Phra Chetuphon*' was probably mentioned only in the Three Seals Law and forgotten over time. Notably, the terms '*Meru Thit*' and '*Meru Rai*' were named after the crematorium-like building, *meru* meaning *crematorium*, which is distinct from the shape of the *Prang*.

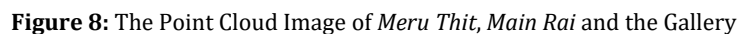
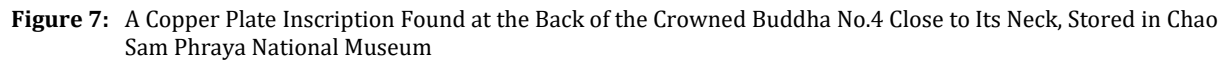
The '*Meru Rai*' comprises four buildings marking perpendicular angles at the four corners of the gallery and forming an enclosure for the central area. Their interior vestibules bridge the gallery with the *Meru Thit*, the four buildings located at the four cardinal points, to unify the total *Meru Rai* compound. Meanwhile, the exterior vestibule walls of the buildings are decorated with niche housing relief scenes illustrating the Buddha's life. Currently, these exterior vestibules are decay and broken from the main building, demonstrating how the niche was added later. The foundation sank evenly into the ground and the niche broke from the core structure.

Meanwhile, housed throughout the *Meru Thit* and *Meru Rai*, twelve crowned Buddhas sit in *bhumisparsa mudra*<sup>2</sup>. From the archaeological investigation of 1992, five copper plate inscriptions, inscribed with the date 16 March 1649, were found intact, intentionally rolled in a shape of the tube and attached to the wooden core inside the crowned Buddha (Weeraprachak, 1994, p. 147). This written evidence proves that these crowned Buddhas were erected after the temple had been established for 37 years, as its construction time was mentioned in the Three Seals Law.

#### 4.4 Ubosot

The *Ubosot* (ordination hall) is located in the eastern part of the temple plan, adjacent to the Chao Phraya River. It is erected on a huge base, its rear connected to the base of the *Meru Thit Meru Rai*. From its current condition, it is evident that the base of the *ubosot* is a series of superimposed lotus foundations with pointed mouldings, possibly surrounded by lower walls enclosing the area. Of the *ubosot*, there remains only the base measuring 19.53 metres wide and 47.73 metres long.

<sup>2</sup> A *mudra* is a gesture referring to few of important events in the Buddha's life. *Bhumisparsa mudra* translated as the earth touching gesture, representing when the Buddha claims the earth as the witness of his enlightenment.



Still, this study questions why the principal Buddha in the *ubosot* of Wat Chaiwatthanaram is not illustrated in the same form as the crowned Buddha displaying the *bhumisparsa mudra*, like the others at Wat Na Phra Meru *ubosot* and the *Meru Thit Meru Raj*, which were a unique style in the reign of King Prasat Thong.

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enthronement of King Prasat Thong. The great *vihara* of that time could have been transformed later into the *ubosot*. This study also suggests that the principal Buddha in the *ubosot* of Wat Chaiwatthanaram is not a crowned Buddha displaying *bhumisparsa mudra* - the remarkable artistic tradition in the reign of King Prasat Thong - because this principal Buddha had already been created before the crowned Buddha became fashionable, unless it was invented in the late Ayutthaya period. This assumption is supported by the inscribed date on the aforementioned copper plate inscriptions, which dated to AD 1649 in the late period of King Prasat Thong (Weeraprachak, 1994, p. 147).

#### 4.5 A pair of stupas in the twelve-indented square plan

A pair of stupas in the twelve-indented square plan are located in front of the *ubosot*. Unfortunately, their bases are largely decayed. By employing a comparative study with an identical contemporary stupa of Wat Chumphon Nikayaram, built by King Prasat Thong at Bang Pa-In island, it can be assumed that the base of the pair of stupas at Wat Chaiwatthanaram might have been constructed in the same pattern with that of Wat Chumphon Nikayaram. Moreover, Prateep Pengtago suggests that this pair of stupas was probably dedicated to King Prasat Thong's parents. Thus, the relics of his parents were probably kept inside this pair of stupas (Pengtago, 1994, p. 39).

The current study agrees with Prateep Pengtago's opinion, since hiding relics inside such typical indented stupas had become popular during the late Ayutthaya-early Rattanakosin periods, as seen in a pair of golden stupas flanked by Prasat Phra Thep Bidon (the royal pantheon) in Wat Phra Sri Rattana Satsadaram. Nonetheless, the issue calls for further research.

#### 4.6 Phlapphla Thong pavilion or the preaching hall

From a survey and study of the architecture, there is a ruin of a wooden-masonry building, measuring 11 metres wide and 43 metres long, located north of the *ubosot*. The remaining wooden pillars suggest the length of this building, traditionally measured the space between pillars, that measured 15 rooms between them. Its base is 30 centimetres high from the ground and is decorated with an upside-down lotus base (Pengtago, 1994, p. 49).

Significantly, this study argues that the remaining wooden pillars mark a typical wooden stilt building, traditionally built as a vernacular architectural style of Thai residences. Additionally, by employing the written evidence of the Three Seals Law in the section of inheritance, it is evident that King Song Tham (AD 1611-1628) performed the royal ritual in establishing a great *vihara* (assemblage hall), a great *Maha Dhatu* (the main Prang) and *Phra Chetuphon* (eight surrounding crematorium-like buildings) and legislated the Three Seals Law in the section of inheritance at '*Phlapphla Thong Pavilion*' (a royal gilded lacquered pavilion) located in the north of the great *vihara* of Wat Chaiwatthanaram.

Therefore, the ruin should be identified as '*Phlapphla Thong Pavilion*' as the place for the King, royalty performing the royal religious ceremony, e.g. making a merit and organising the royal funeral, in Wat Chaiwatthanaram. Later, this pavilion was also used as the preaching hall.

#### 4.7 Four stupas

In the western part of Wat Chaiwatthanaram, four stupas are erected on the courtyard between the gallery and the wall along an east-west axis. Currently, only one stupa remains in good condition; all that remains of the others are their foundations.

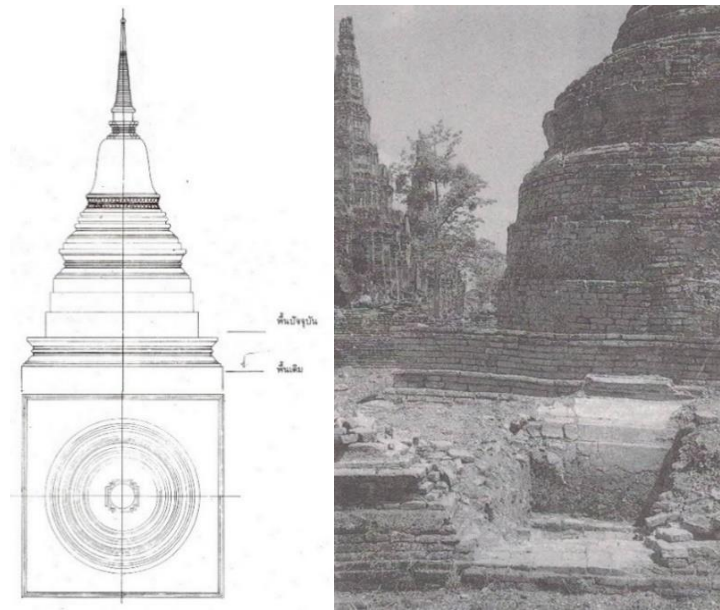
Historically, the previous study suggested that the two stupas on the west related to the adulterous relationship between Prince Thammathibeth and Princess Sangwal in the reign of King Borommakot (AD 1732-1758). It has been believed that their bones were placed in the most complete stupa (no.1) and the smaller one respectively (Pengtago, 2019, p. 50).

However, this study argues that the aforementioned assumption is quite controversial because only two stupas were asserted while the others were omitted. According to archaeological evidence, the lowest base of stupa no.1 is located lower than the main base supporting the gallery and the *Meru Thit Meru Rai*. Thus, the series of superimposed lotus bases of stupas were covered inside the main base (Pengtago, 1994, p. 46). This study suggests that, by the order of construction, the four stupas were built considerably earlier than the main base, in as much as stupa no. 1's base is contained within the structure of the main base. Perhaps this partial covering of the main base was extended to cover that of the four stupas in the later restoration, but the particular time(s) of this extension are unknown. Although the shape of stupa no. 1 features the late Ayutthaya style, its visible style seems to contrast with its position, as the setting of the four stupas should be contemporaneous with the earliest temple complex. Instead, it appears to show Wat Chai Watthanaram's development of the architectural plan from the Ayutthaya period.

Admittedly, this issue needs more supporting evidence to prove that the four stupas are the earliest construction of the temple complex, prior to the reign of King Prasat Thong. Further investigation is also



needed to prove that the main base and that of the *Meru Thit Meru Rai* were coincidentally built...or not. So, it remains controversial.



**Figure 10:** Showing a Series of Superimposed Bases of the Stupa No.1 Contained Within the Structure of the Main Base (Pengtago, 1994, p. 45-46)

## 5. THE RECONSTRUCTION OF THE ARCHITECTURAL STYLE

The reconstruction of the architectural style of Wat Chaiwatthanaram employed a survey with a 3D Laser Scanner, a survey with the fundamental tools, photography and, not least, the archaeological excavation to synthesise all integrated empirical data and generate the most valid information. Practically speaking, all data from the field work was systematically managed, such as converting the Point Cloud Image and the scanning of architectural drawings into the database system. Thereafter, the study of current architectural conditions and the inspection of empirical structures will be done. Finally, the 2D CAD reconstruction of the architecture will be created along with the BIM in order to show the 3D architectural reconstruction.

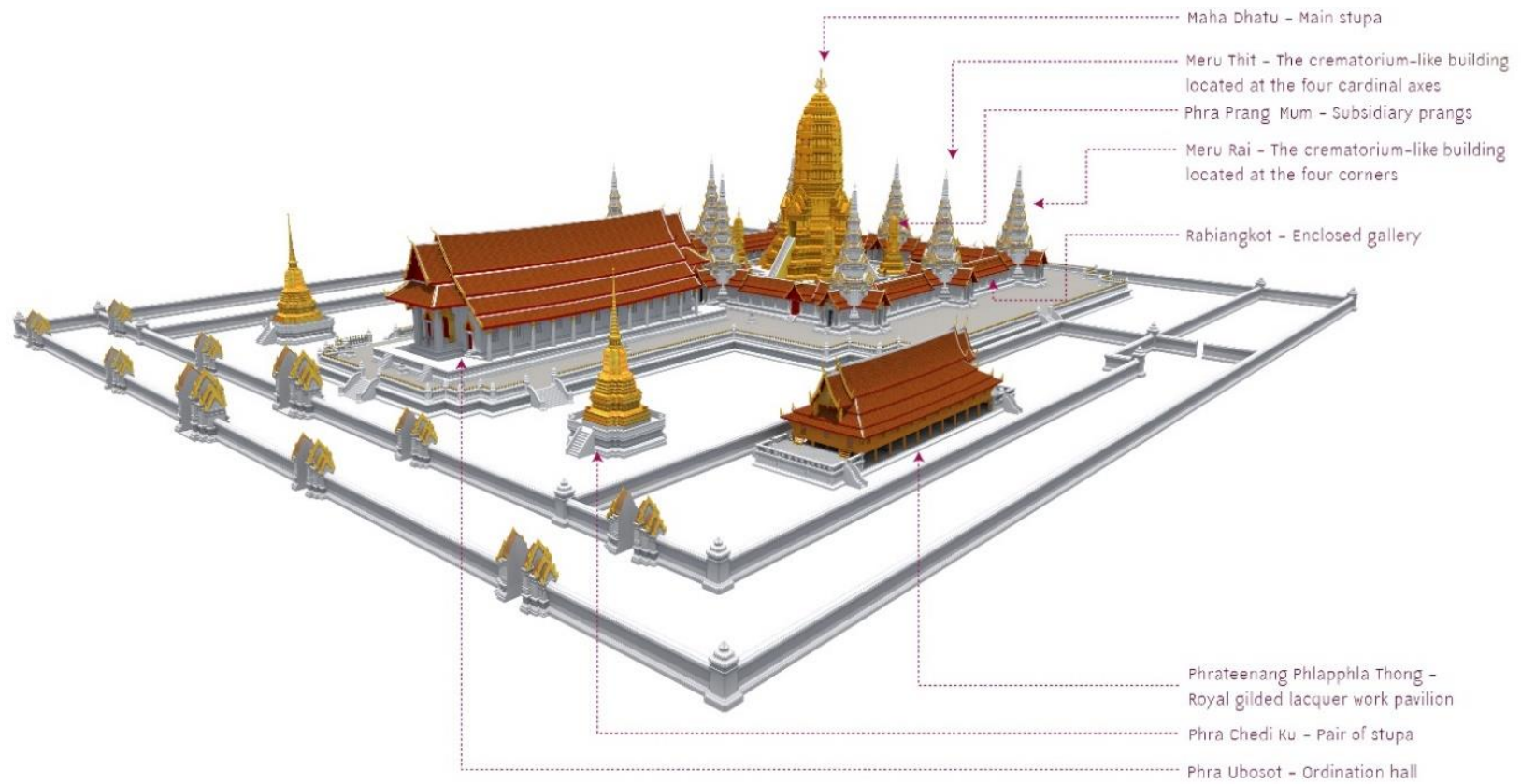
For the masonry constructions, such as the main *prang*, the subsidiary *prangs* at the corners, the *Meru Thit*, *Meru Rai* and the gallery, it is plausible to reconstruct the original architecture from their considerable evidence remaining in good condition.

As for the pair of stupas in the twelve-indented square plan located in front of the *ubosot*, their bases largely decayed before the archaeological excavation. Thus, it is important to employ a comparative study with contemporary identical stupas of Wat Chumphon Nikayaram, one at Wat Mai Prachum Phon and another at Wat Yan Sen. As a result of employing this methodology of architectural art history, it is evident that the pair of stupas at Wat Chaiwatthanaram were considerably adorned with a set of heightened bases that could be circumambulated, as clearly seen in the mentioned examples.

As the *ubosot* remains only its base, the methodology of architectural art history is employed so as to compare the contemporary *ubosot* with the *ubosot* of Wat Chaiwatthanaram. By considering the contextual evidence of the crowned Buddha with *bhumisparsa mudra* and the feature of Sema superimposed bases, this study proposes that the Wat Chaiwatthanaram *ubosot* probably had a similar architectural style to the Wat Na Phra Meru, the *vihara* of Wat Thammikarat and the *ubosot* of Wat Kuti Thong (Though these buildings were restored, their overall structures remain Ayutthaya architectural style).

Today, only the wooden pillars of *Phlapphla Thong pavilion*, the preaching hall of Wat Chaiwatthanaram, remain, rendering it difficult to reconstruct the original structure. Therefore, it is essential to employ a comparative study by examining Ayutthaya buildings with other temples, such as the preaching hall of Wat Yai Suwannaram in Phetchaburi, to estimate the overall structure. Owing to the scarcity of evidence, this study cannot identify the complete features and details of *Phlapphla Thong pavilion* in depth, leaving us only an imaginative estimation created to attract visitors and inspire future research.





**Figure 11:** The Reconstruction of Wat Chaiwatthanaram's Layout Plan

## 6. A NEW ASSESSMENT OF DATES

This study employs the written evidence of the Three Seals Law—a legal manuscript descended from the Ayutthaya era grounding a fundamental role in Thai legislation—so as to propose a new assessment of Wat Chaiwatthanaram's dates. Arguably, this law text was relevant to all realms of Thailand's society and culture during the Ayutthaya and Rattanakosin periods, in which missing histories of those royal chronicles were mentioned. Furthermore, collections of the Three Seals Law traditionally kept four copies, in the Royal Bedchamber, the Court of Justice and the Palace Library, with the fourth stored as a backup. The Three Seals Law marked the principal law text of the kingdom, with the dates recorded lending them certainty and reliability. Hence, the Three Seals Law has been considered Thailand's most important source of Thai history, significantly contributing to the history of Ayutthaya (Pongsripan, 2015).

As mentioned above, this study focuses on the section of inheritance in the Three Seals Law, wherein the historical event at Wat Chaiwatthanaram was mentioned as follows.

*'In AD 1612, Pig Year, Thursday June, King Song Tham (AD 1611-1628) presided in Phlapphla Thong pavilion, northward of the great vihara at Phra Chaiwatthanaram, to make merit and establish (สถาปนา-Thapana) the great vihara, Phra Chetuphon and the great Maha Dhatu for the prosperity of Buddhism to be prolonged by 5000 B.E. (Buddhist Era)...'*

‘สมเด็จพระเจ้าอยู่หัว ๒๑๕๕ (พ.ศ. ๒๑๕๕) ศุกระสังวัตพระเชษฐามาศุกะปักเขเอภาทศมิตติยั้งครุवार พระบาทสมเด็จพระเอกาทศวรรุ อิศวรบรมนารถบพิตรพระพุทธเจ้าอยู่หัว ผู้ทรงศุทธิราชธรรม อันตะสมการาติเรกเอกอุตมบรมพุทธานุการจุลจักรพรรดิธรรมฤทธาธิราชบรมบพิตร เสด็จสถิตในพระที่นั่งพระพลาทอง โดยอุตราภิมุขพระมหาวีหาร พระไชยวัฒนาราม บำเพญพระราชกุศล สถาปนาพระมหาวีหาร และพระเชตุพนแลพระมหาธาตุไว้ ให้รุ่งเรืองในวาระพุทธศาสนาไปเมื่อหน้าตราบเท่าถึงห้าพันพระวสา...’

(Office of the Royal Society, 2007, p. 375)

From the abovementioned text, it is clearly evident that the temple complex comprises *Phra Tee Nang Phlapphla Thong* (a royal gilded lacquer work pavilion), the great *vihara* (assemblage hall), the great *Maha Dhatu* (the main Prang) and *Phra Chetuphon* (eight surrounding crematorium-like buildings) in the reign of King Song Tham in AD 1612.

Thus, it is essential to examine the word of ‘สถาปนา’ (*Thapana* means ‘to establish’) to assess the new dates of Wat Chaiwatthanaram, as this word could mean either ‘to preside over the foundation stone laying ceremony for the beginning construction of the temple complex’, or ‘to preside over the establishment of the temple complex’ at Wat Chaiwatthanaram. Of course, it is impossible to interpret this historical event as presided over by King Song Tham at *Phlapphla Thong Pavilion* in AD 1612 in exactly the way he performed it, since we lack the proper texts.

Nevertheless, this study argues that this historical event precisely marks the initial phase of the temple complex construction of Wat Chaiwatthanaram in AD 1612. The text also implies that *Phlapphla Thong* pavilion, or the preaching hall, was completely finished at this time, as it was used by King Song Tham for his legislation in AD 1612.

The completion of the temple complex in AD 1630 is stated in the royal chronicle of Ayutthaya, as penned by Phanchanthanumas (Jerm);

*'In AD 1630, Horse Year, the King (Prasat Thong) ordered to establish and construct a great Maha Dhatu (the main Prang), enclosed by a gallery whose corners were built in a form of the royal crematorium, including an Ubosot (an ordination hall) and preaching hall and providing many monks in the Kudi (a monk's residence). Thereafter, this temple was named 'Wat Chaiwatthanaram after the finish'...'*

‘ในศักราช ๙๙๒ ปีมะเมียศก (พ.ศ. ๒๑๗๓) ...พระเจ้าอยู่หัวให้สถาปนาสร้างพระมหาธาตุเจดีย์ มีพระระเบียงรอบและมุมพระระเบียงนั้น กระทำเป็นทรงเมรุราชอันรจนาและก่อปรด้วยพระอุโบสถพระวิหารการเปรียญ และสร้างกุฎิถวายพระสงฆ์เป็นอันมาก แล้วเสร็จให้นามชื่อวัดไชยวัฒนาราม...’

(Fine Arts Department, 1996, p. 378)

This text has been accepted by scholars and widely recognised, as it includes a construction time and the year of Wat Chaiwatthanaram's completion, along with its conferred name in AD 1630 and details of the temple complex. In particular, the gallery was decorated with a form of royal crematorium buildings still visible today. As a result, academically, the year 1630 is always referred to as the beginning of construction of Wat Chaiwatthanaram, in contrast to the written time in the Three Seals Law, as described earlier in this article.

Significantly, this study found that the copper plate inscriptions—kept inside the crowned Buddhas and intentionally positioned next to their wooden cores—must be addressed to articulate further duration of the





intentional design of the Ayutthaya groundplan resembling Sri Yasodharapura (Kirdsiri et al., 2018, p. 249-232).

Significantly, Baker and Phongpaichit (2017) have intriguingly proposed that establishing the crowned Buddhas with regal ornaments in the *Meru Thit Meru Rai* around the central *Prang* alludes to the correlation between kings and the Buddha and based on a perception of the splendour and the distance of the Angkor kings.

This article would argue that the aforementioned King Prasat Thong's transformations and Chris and Phasuk's suggestions allow more dynamic dimensions regarding the invention of the typical crowned Buddha as the artistic tradition of King Prasat Thong. They are compatible with the position and date of copper inscriptions in supporting this article's suggestion of further construction processes of the crowned Buddhas inside *Meru Thit Meru Rai* in AD 1649. Undoubtedly, the temple complex of Wat Chaiwatthanaram was tremendously built and repaired during his reign. It revived the tradition of building great temples at the beginning of a reign by repairing and reconstructing the temple complex, previously built in King Song Tham's reign. He further built on the site of his mother's residence, most likely inspired by Angkor's elements, especially the shape of the *Prang*, the cosmological plan and so on.

Consequently, it is plausible to reassess the earlier construction date of Wat Chaiwatthanaram, that its temple complex had been under construction since AD 1612 and completed in AD 1630. Noticeably, the adornment with the remarkable artistic tradition of crowned Buddhas in the reign of King Prasat Thong at Wat Chaiwatthanaram probably emerged in AD 1649. This study yields a dynamic timeline of the construction phases at Wat Chaiwatthanaram and its lively architectural development.

## 7. CONCLUSION

As reviewed in the literary sources of Ayutthaya history, this study argues that Wat Chaiwatthanaram had already been planned and under construction since the reign of King Song Tham (AD 1611-1628). It was clearly described in the introduction to the Three Seals Law, in the section on inheritance, that King Song Tham performed the royal ritual establishing many buildings at Wat Chaiwatthanaram in AD 1612, including the event of the Three Seals Law legislation at the same time. Nonetheless, this study realises that the abovementioned period was in the reign of King Song Tham, although Chao Phraya Kalahom (the King Prasat Thong-to-be) was so highly ranked and a favourite aristocrat that he played a major role in King Song Tham's court. Thus, he was most likely somehow related to the construction of Wat Chaiwatthanaram. It is also well possible that he continued construction until his usurpation, meaning that the overall premises could have been finished early in his reign.

The Three Seals Law also suggests that the *ubosot* was originally used as a royal *vihara* for Wat Chaiwatthanaram. Meanwhile, the *Meru Thit Meru Rai* was called '*Phra Chetuphon*' and a ruin of a wooden-masonry building in the north of *ubosot* was called '*Phlapphla Thong pavilion*', where the legislation of the Three Seals Law took place.

Arguably, the copper plate inscriptions, which were kept inside the crowned Buddhas, reinforce the construction timeline of the typical crowned Buddhas in the reign of King Prasat Thong (AD 1630-1656), such that these typical Buddhas were not invented during his early reign. In fact, regarding the time of *Meru Thit Meru Rai*, it now becomes clearer that it had been under construction since AD 1612 (Office of the Royal Society, 2007: 375). It can be presumed, however, that *Meru Thit Meru Rai* was finished in AD 1630. Crucially, it is essential to note that *Meru Thit Meru Rai* was originally established with the Buddhas.

Concerning the terminology of *Phra Chetuphon*, the *Meru Thit Meru Rai* previously housed Buddhas. Thereafter, the former Buddhas were somehow rebuilt or repaired in the form of crowned Buddhas, since they had been coincidentally built with the intentional allocation of the copper plate inscriptions in AD 1649, in the late reign of King Prasat Thong. Consequently, the copper plate inscriptions contributed to expanding the longer time frame for the construction phase of Wat Chaiwatthanaram and offering clues to the initial work on the crowned Buddha and that of the typical artistic tradition of King Prasat Thong's reign. However, due to the limited history of architecture employed in this study, plenty of controversial assumptions require further scientific investigation to yield the exact dates.

For the reconstruction of the architecture of Wat Chaiwatthanaram, the premises can be divided into three main groups: 1) masonry construction, 2) wood-masonry construction and 3) wood construction, all with varying degrees of deterioration.

Group 1: the group of masonry construction is fairly well preserved. The main *prang* and the subsidiary *prangs* at the corners remain in good condition. Once they have been applied with the 3D Laser Scanner, the

architectural data results can be completed, including the reconstruction of the gilded metal plaques attached on prangs, with the exception of the loss of Nophasun.

Group 2: the group of wood-masonry construction, comprising *Meru Thit Meru Rai* and the Gallery. The 3D Laser Scanner can record all eight *Meru Thit Meru Rai*, by which the nuanced decay can be found. Therefore, the related evidence is required in order to create more valid information. The gallery, too, with its collapsed wooden superstructure, can be traced to its original superstructure by examining the location of the wood frame structure inserted into the masonry walls and pillars of *Meru Thit Meru Rai*. Thus, the scale and height of wooden structures can be known, rendering an accurate reconstruction of its gable.

For the *ubosot*, it is the wooden-masonry building: bases, walls, pillars made of bricks and the superstructure made of wood. Since all that remains of the *ubosot* are its bases, only the building plan can be done. However, by employing a comparative study with contemporary Ayutthaya buildings, the reconstruction of the *ubosot* can be partially imagined, enough to attract visitors and researchers to conduct more research when further evidence is found.

Group 3: the group of wood construction, '*Phlapphla Thong pavilion*', is mostly decayed, with only its masonry bases and wooden pillars decorated with gilded lacquer' (a royal gilded lacquered pavilion). Unfortunately, due to the scarcity of evidence, this study employs an analogy to compare this building to the preaching hall of Wat Yai Suwannaram. The study of *Phlapphla Thong pavilion* remains controversial and requires further study.

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