

## Article

# Vernacular Sacred Architectural Heritage Assessment: The Case of Wat Chedi, Southern Thailand

Kantaphong Srimuang<sup>1</sup>, Wirut Thinnakorn<sup>1,\*</sup>, Sasipim Issarawattana<sup>1</sup>, Narisa Noithapthim<sup>1</sup>,  
Praphatson Saemmongkhon<sup>1</sup> and Reyes Garcia<sup>2</sup>

<sup>1</sup> School of Architecture and Design, Walailak University, Tha Sala, Nakhon Si Thammarat 80160, Thailand; kantaphong.si@wu.ac.th (K.S.); sasipim.is@mail.wu.ac.th (S.I.); narisa.ni@wu.ac.th (N.N.); praphatson.sa@wu.ac.th (P.S.)

<sup>2</sup> Civil Engineering Stream, School of Engineering, University of Warwick, Coventry CV4 7AL, UK; reyes.garcia@warwick.ac.uk

\* Correspondence: twirut@wu.ac.th

**Abstract:** Thailand's vernacular and religious architecture is rich and unique. Wat Chedi, a temple in the southern part of the country, is visited by thousands of Buddhists and tourists every month. Despite of its national importance, Wat Chedi is not considered as a historical site and therefore, the site is undervalued. This study aims to assess the value of Wat Chedi's architectural design and features by proposing a novel point-based criteria based on aesthetic, scientific, educational, and social values. The novel criteria also consider factors such as changes and the respect for changes, which are aligned with the concept of conservation in Southeast Asia. The proposed criteria are then applied to Wat Chedi and to the historic Wat Phra Mahathat Woramahawihan temple, and the results are compared and discussed. The results indicated that whilst Wat Chedi has changed both physically and culturally along with the community and era, it is still a site with significant vernacular architecture and 'high' aesthetic, scientific, educational, and social values, whilst the historical value of Wat Chedi is classified as 'moderate'. Moreover, Wat Chedi's architecture is proven to be a symbol of people's spiritual beliefs. It is proposed that the Fine Arts Department of Thailand (and/or relevant agencies) should adopt the criteria proposed in this study to assess other vernacular and religious sites across the country. It also proposed to register Wat Chedi as a valuable intangible cultural heritage site of faith to be preserved for future generations. This article contributes towards developing more efficient tools to assess the vernacular architecture of faith in Southeast Asia, which in turn can help protect important sites for future generations.

**Keywords:** cultural heritage; vernacular architecture; valuation; faith; Wat Chedi



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## 1. Introduction

Over the past century, there has been an increased awareness on the conservation of historic sites and cultural heritage around the world [1,2]. Conservation of sites relies heavily on appraisals, which are a scientific method of reasoning [3]. In general, the valuation of cultural heritage involves: fully identifying the value of cultural heritage; describing the various values of cultural heritage; and fully assessing and differentiating historical values [4]. Cultural heritage valuation is a tool to comprehend values, prioritise cultural heritage, and explain its values, resulting in actions to support the preservation and future development of historical sites [5]. Different tools and criteria exist to assess historic and cultural heritage [1,2].

### 1.1. Cultural Heritage Conservation in a Global Context

The 1931 Athens Charter for the Restoration of Historic Monuments served a catalyst to promote and emphasise urban planning, give order to the construction of modern monuments, and to use better materials and building techniques to preserve and protect

historic architecture [6]. The establishment of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Council on Monuments and Sites (ICOMOS) supports cultural heritage conservation in different ways. Particularly, the ICOMOS adopted the Venice Charter that considers the significance of urban buildings, rural historical sites, and monuments by valuing the integrity and authenticity of the historical and architectural value to expand conservation from architecture to communities and landscapes, as well as to social and cultural values [7]. The 1987 Washington Charter was subsequently issued to protect and preserve historical sites, urban planning, and rural historical areas. Besides, the Nara Document emphasizes on values and authenticity as co-occurring considerations in assessing cultural heritage [8]. These charters exemplify the significance of historical areas and architecture in terms of their influence on the economy and society [9].

The Burra Charter proposed to determine the value of heritage sites by adopting culture-specific criteria [10]. ICOMOS ratified the charter of the Built Vernacular Heritage around the same time. The latter charter focused on vernacular heritage as this was deemed to reflect people's pride, norms and culture, as well as the community's historic footprint [11]. In 2003, UNESCO adopted the Convention for the Safeguarding of the Intangible Cultural Heritage, which defined intangible cultural heritage as languages, traditions, ceremonies, knowledge, and craftsmanship. Another organization is DOCOMOMO International, established in 1988. One of its missions is to monitor modern heritage, buildings or structures built between 1909–1979, which may be under threat of destruction or decay. Whilst valuable, most of the above charters and criteria adopt a predominantly Westernised view of conservation of architecture, which tends to preserve the authenticity of sites and monuments.

### *1.2. Southeast Asian Context and Thailand*

In Southeast Asia, however, the concept of 'conservation' is different as it evolves around change, as well as on the way religion and local communities play an important role in defining the value of a site [12]. As such, the concept of conservation is much broader and dynamic, and it is heavily influenced by people's religions and beliefs. Accordingly, new ad hoc criteria specific for Southeast Asia (and particularly Thailand) are deemed necessary to account for such differences and to protect more effectively historic and cultural heritage in the region.

Discussions on the dynamics of vernacular architecture are currently found in fields such as social anthropology, psychology, philosophy, geography, and environmental studies. The study of vernacular architecture has remained a less explored field of study until the present day [13]. We have adopted Oliver's (2006) definition to embrace "all the types of building made by people in tribal, folk, peasant and popular societies where an architect, or specialist designer, is not employed" [14]. Additionally, it is proposed that the definition of vernacular architecture should cover other formal architectural styles, including monuments, and the use of materials and techniques by vernacular craftsmen, which has been modified over time [15]. In vernacular architecture, besides the building's originality, the significance of a building's role as a catalyst for change should be considered for determining the value of cultural heritage.

Thailand's vernacular and religious architecture is rich and unique. The restoration of religious sites in the country has a long-standing history. However, it was only during the reign of King Rama V (1853–1910) that restoration was formalised. The Historical Society of Siam was founded in 1907 to preserve religious architecture. Influenced by Western customs, King Rama VI founded the Royal Society of Thailand to protect archaeological sites. The Antiquities Act was enacted in 1934 by the Fine Arts Department in order to preserve historical sites, collect data to define the nation's identity, and champion government policies and governance in conservation. Thailand joined the World Heritage Convention in 1987, and the World Heritage Committee registered Sukhothai and Phra Nakhon Si Ayutthaya as Thailand's first world heritage sites [16]. To date, the Fine Arts

Department is primarily responsible for valuing and preserving the cultural heritage of the country.

Whilst agencies and restoration acts were established during the reign of King Rama VI, the Thai government and people in the 20th century were still accustomed to traditional restoration methods that lacked an understanding of proper conservation due to the lack of knowledge and understanding of international conservation criteria [17]. In the past, the purpose of preserving historical structures was to extend their life, and this was typically commissioned by members of the royal court or important individuals [18]. Currently, both internationally and in Thailand, the concept of conservation encompasses both tangible and intangible cultural heritage values.

However, conservation efforts in Thailand, with the Fine Arts Department as the main responsible agency with the authority to draft and enforce the law regarding heritage conservation, concentrate on sites deemed to have a high historical and archaeological significance, and/or with ties to prominent individuals. A typical example of one of such sites is Wat Phra Mahathat Woramahawihan in Nakhon Si Thammarat province (Figure 1). The site receives thousands of visitors per year, and it has been on UNESCO's World Heritage tentative list since 2013.



**Figure 1.** View of Wat Phra Mahathat Woramahawihan—considered as a cultural and historical heritage site by the Fine Arts Department of Thailand.

### 1.3. Wat Chedi

By adopting the above approach, other sites around the country deemed as less relevant remain largely ignored and thus, undervalued and unprotected. One of such sites is Wat Chedi or Chedi Temple, located in the north part of the same province. Wat Chedi is believed to have been built during the Ayutthaya period (14th–18th century) [19]. Popular belief indicates that Luang Pu Thuat, a revered Buddhist monk, lived there briefly and thus locals built a small pagoda in his honour. Before resuming his itinerant travels, a child disciple named 'Ai Khai' was appointed as a deacon and carer of the temple, alongside with other locals. Shortly after, Ai Khai passed away. Eventually the site decayed and only the pagoda's ruins remained. Years later when locals re-discovered the site, they named it "Wat Chedi" (i.e., pagoda temple) [19]. The story behind Ai Khai is controversial as it is a local tale with no evidence to confirm if such a child ever existed.

Despite this, in 1982, a statue of Ai Khai was built inside the main temple and became famous after people claimed that the statue granted their requests. People winning the lottery have claimed that the worship of Ai Khai granted them good luck, which gave national prominence to the site [20]. At present, Wat Chedi is one of the most well-known temples in the country. Thousands of pilgrims and tourists visit the site in tours specifically arranged by travel agencies (Figure 2). For this reason, Wat Chedi has become a sacred place [21]. Numerous buildings have been built to enshrine holy objects and to perform rituals that reflect people's beliefs, faith, and traditions within the community [22].



**Figure 2.** General view of Wat Chedi on a busy day with many worshippers and visitors.

Despite the proven national importance of Wat Chedi, the site is not considered as a historical site by the Fine Arts Department of Thailand. This fact raises two research questions which are the focus of this study: (i) why is Wat Chedi not considered a historical place?; and (ii) what architectural value and importance does Wat Chedi have? An investigation on the architecture of Wat Chedi is thus necessary to explore knowledge related to the conservation and changes of the site.

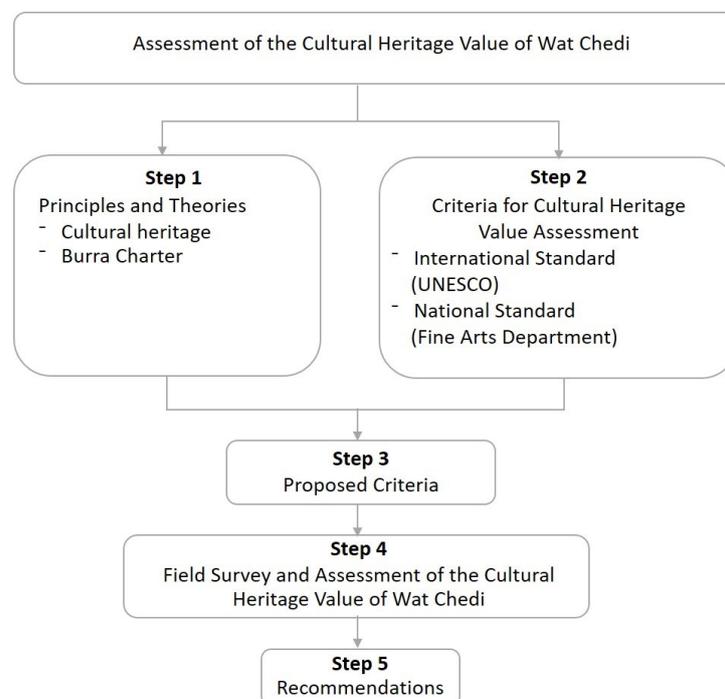
This study aims to assess the value of Wat Chedi's architectural design and features by proposing a novel point-based criteria based on international/national conservation concepts. Here, the term 'value' is treated straightforwardly as importance or worth of something. A field survey is initially conducted to identify the architecture at the site. Subsequently, novel valuation criteria are proposed and used to assess Wat Chedi's credentials. An appraisal comparison is made between Wat Chedi and the Wat Phra Mahathat Woramahawihan, an archaeological site protected by the Fine Arts Department. Qualitative and quantitative results are discussed, and recommendations are given to better assess the architectural value of faith/religious sites in Thailand. The results of this article are expected to contribute towards developing more efficient tools to assess the vernacular architecture of faith in Southeast Asia, which in turn can help protect important religious sites for future generations.

## 2. Research Methodology

To achieve the aim of this research, this study adopts the following research methodology, as depicted in the flowchart of Figure 3:

- Step 1. Review of relevant conservation principles and theories, which explicitly include cultural heritage. Particular focus will be given to the Burra Charter as it includes cultural heritage values.

- Step 2. Revise the criteria for cultural heritage value assessment using national and international standards (UNESCO and Fine Arts Department of Thailand).
- Step 3. Propose novel architectural valuation criteria for religious sites in Thailand.
- Step 4. Conduct an onsite field survey to evaluate and appraise the architecture in Wat Chedi.
- Step 5. Provide recommendations on why Wat Chedi should be considered a protected site.



**Figure 3.** Flowchart of methodology adopted in this study.

### 2.1. Guidelines for the Conservation of Historic Towns and Urban Areas: The Need for Cultural Heritage

The 1987 Washington Charter is a major catalyst for conservation of historic towns and urban areas. It includes, but is not limited to, the following qualities to be preserved:

- Urban patterns, as defined by lots and streets.
- Relationships between buildings and green and open spaces.
- The formal appearance, interior and exterior, of buildings as defined by scale, size, style, construction, materials, colour and decoration; and
- The relationship between the town or urban area and its surrounding setting, both natural and human-made.

Culture or community norms are regarded as a component of community preservation and growth. Equalising diversity is also a part of the charter [23].

To acknowledge that culture is at the core of international development, UNESCO has created the Culture for Sustainable Urban Development Initiative [24], which considers culture in various forms, including industry and tourism. To create sustainable development, it is essential to analyse urban areas' natural and cultural resources from different angles. Participation of interested parties are encouraged in every action. The initiative also considers how the integration of community cultural heritage values contribute to the identity of the historical community.

In addition to preserving international heritage and material heritage to increase economic value, a comprehensive conservation strategy and consideration of local heritage must also be implemented [25]. The conservation concept should consider and accept changes that have happened in historical sites. This method must incorporate identifying, preserving, and managing heritage. Managing heritage will be one of the goals of a

sustainable development strategy [26]. The preservation of historical communities must go together with economic development, society, tradition, and city policy via an interdisciplinary approach, as well as the connection of the historic town to its neighbours [27]. Strong community involvement that values local cultural heritage can help prevent the loss of that community's cultural identity and rich cultural heritage [28].

This study found that the concept of preserving historical communities requires an understanding of the environment and culture of each area, as well as an appreciation of the tangible and intangible historical value and cultural heritage. Preservation must encompass a cultural heritage of international and local significance, as well as the changes occurring in the area. Unfortunately, the current criteria by the Fine Arts Department do not take into account (nor give value to) the environment, intangible heritage, and changes that occur in the area. The authors of this study propose that changes should be respected and should be included in any future criteria for assessing the cultural heritage of historical sites in Thailand. Therefore, the next section proposes new criteria to assess the credentials of Wat Chedi, as well as other similar sites around the country.

## 2.2. A Novel Assessment Criteria of Cultural Heritage Sites in Thailand

To develop the criteria for Wat Chedi, the authors considered the Burra Charter (Step 1), as well as UNESCO's standard criteria for the international level, the Thai Fine Arts Department's criteria for the national level (Step 2). These criteria are deemed to be as the most suitable for the architectural and cultural setting in Thailand. UNESCO's concept of conservation includes both tangible and intangible heritage. Tangible cultural heritage can be linked to natural resources, whereas the intangible one is to the culture, which can be transmitted from generation to generation [29]. A scientific evaluation can indicate building values and select the most appropriate technique to preserve them [2]. The Fine Arts Department's valuation criteria for cultural heritage does not cover the above aspects, but it is the criteria currently used in the country. A brief summary of the criteria is given in the following paragraphs.

*The Burra Charter*, used to manage cultural heritage in Australia, describes value of cultural heritage based on four factors:

- Aesthetic value is the value that is perceived by all senses, including the form, size, colour, texture, material, odours, and sounds associated with the function of the location.
- Historic value is the basis for all values associated with historical events and individuals at any point in time, where significant events occurred.
- Scientific value refers to research value that is related to size and rarity, and it can serve as a source of information in the future.
- Social value refers to a location's worth as a centre of a minority's spirituality, belief, politics, race, or culture.

*UNESCO's World Heritage Convention*. This recognises Outstanding Universal Value (OUV) and divides world heritage into four categories: buildings, building groups, sites, and cultural landscapes. World heritage sites are required to comply with six criteria [30]. Accordingly, sites must:

- Represent a masterpiece of human creative genius.
- Exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning, or landscape design.
- Bear a unique (or at least exceptional) testimony to a cultural tradition or to a civilization which is living, or which has disappeared.
- Be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.
- Be an outstanding example of a traditional human settlement, land use, or sea use, which is representative of a culture (or cultures), or human interaction with

the environment, especially when it has become vulnerable under the impact of irreversible change.

- Be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria).

*Fine Arts Department* [16]. Thailand's Fine Art Department has four evaluation criteria for historic sites and buildings based on authenticity, as follows:

- Aesthetic value is the beauty of architecture, landscape, planning, or decoration, which are intricate, beautiful, and exquisite, showing expertise of builders.
- Historical and archaeological value represents an entity as crucial evidence related to events, historical figures, or periods reflecting their economy and society, including art history, architecture, landscape, and planning.
- Scientific and educational value shows benefits for education based on the authenticity of the source as well as credibility, rarity, meaningfulness, uniqueness, and representativeness of a particular period, location, or style.
- Social value concerns succession, local bonds, and social acceptance or reputation from that particular place.

A comparison between the criteria indicates that the UNESCO World Heritage designation criteria are primarily based on the connection between the heritage site and historical occurrences, historical figures, or design principles. Although UNESCO's criteria and the Burra Charter criteria do not agree on all points, there are some similarities in how they assess cultural heritage since they both include intangible heritage.

The criteria adopted by the Fine Arts Department to evaluate historical sites are comparable to the Burra Charter's, as both of them consider four aspects. However, the Fine Arts Department's criteria do not give the same level of detail and do not cover the current concept of conservation. They still mainly focus on ancient buildings deemed as having utmost authenticity.

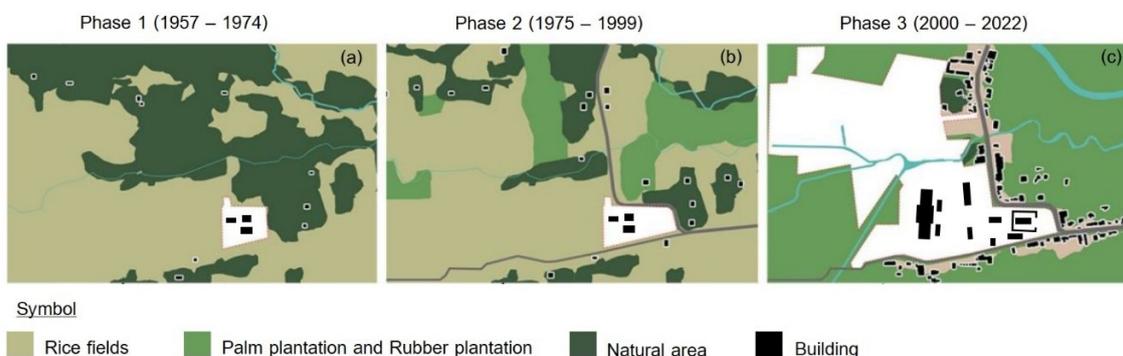
By promoting the authenticity of the archaeological sites, the Fine Arts Department and UNESCO World Heritage criteria are aligned on certain cultural heritage points. However, the Fine Arts Department's criteria do not address the current concept of conservation, which respects both local and global heritage. Additionally, the criteria have not yet acknowledged site development and changes in the area.

The novel point-based criteria (Step 3) are fully described in reference [5,31]. Table A1 of Appendix A presents a summary of the criteria, which consider aesthetic, historic, scientific and educational, and social values. The criteria were derived from the essence of assessing the World Cultural Heritage and classification value of cultural heritage. These criteria encompass both tangible and intangible heritage, including the aspect of authenticity. The criteria also consider factors such as *changes* and the respect for *changes*, which are aligned with the conservation concept in Southeast Asia [12]. With added emphasis on the scientific and educational value to encompass factors of changes, the criteria are, however, inconsistent with the Department of Fine Arts' criteria, which focus on ancient historical sites closest to authenticity according to Western approaches (e.g., UNESCO). Section 3 below reports the results from the application of these novel criteria to Wat Chedi.

### 2.3. Architectural Development of Wat Chedi

Wat Chedi has developed over three main Phases (Step 4 of Figure 3). In Phase 1 (1957–1974, Figure 4a), Wat Chedi was a small, abandoned temple with a 3.56-acre land area, a one-floor monk's house, a square wooden tent, a rural-style canteen, and a partially destroyed Buddhist chapel [32]. Phase 2 (1974–1999, Figure 4b) corresponds to the site re-discovery by locals, when structures were restored/rebuilt, and additional monks' houses, a sanctuary, and other structures were built up. After the four-lane road 3017 was constructed, the surrounding environment changed rapidly. Traditional crops were replaced with rubber and palm tree plantations, shops opened to sell religious artefacts, and new restaurants

started serving visitors. During the latest Phase 3 (1999–2022, Figure 4c), the temple area increased from 15.81 acres (2015) to 79.0 acres (2022), with the addition of a new canteen, a two-floor chapel, new sanctuaries, a temple wall, and a ‘mandapa’ (i.e., a pavilion or hall for public rituals), a crematorium, 7.9 acres of parking lots, and Ai Khai’s shrine [32]. All these factors resulted in the rapid and dynamic transformation of the site and surrounding area.



**Figure 4.** Changes in around Wat Chedi between (a) 1957–1974, (b) 1975–1999, and (c) 2000–2022.

#### 2.4. Ceremonies and Cultural Activities at Wat Chedi

Besides Buddhist ceremonies, praying and making votive offerings are also interesting and distinctive activities. People fill the temple up with tens of thousands of rooster statues and firecrackers. These offerings and activities have stimulated the economy on a provincial and even national scale, benefiting Nakhon Si Thammarat and other surrounding provinces [33]. Wat Chedi is a potential cultural space that has had a positive impact on the Wat Chedi community’s economic growth, particularly from religious and spiritual tourism [34].

From the field survey carried out at the site, it can be concluded that religious activities at Wat Chedi have led to environmental, social, and economic changes, which gives the temple a distinct identity.

#### 2.5. Vernacular Architectural Heritage at Wat Chedi

Vernacular architecture refers to construction done by villagers, and includes homes and other structures that fulfil requirements specific to the culture’s values, economics, and ways of life [35,36]. Vernacular architecture is influenced by economic growth, social development, culture, and the environment [37]. In order to have a distinctive style for the community, the buildings’ original style may be modified to accommodate the residents’ preferred way of life [38]. The nature of vernacular architecture is informal, but it also has some formality because of the significance and utility of buildings. The community’s relationship with its surrounding environment is primarily expressed through vernacular architecture. Local and regional culture and significance are simultaneously expressed through vernacular architecture [39].

Table 1 summarises the existing buildings and facilities at Wat Chedi (up to 2022), including their use, type of material used in construction, and age. Likewise, Figure 5a shows the location of the buildings within the site, whereas Figure 5b presents examples of different architectural styles at Wat Chedi. Figure 5a,b show that the uniqueness of the buildings is represented through planning to accommodate many visitors or those coming to pray and make votive offerings to Ai Khai. This is evident from the planning of the location and space for parking space and toilets (which are at the heart of the site) and from the huge size of the Pho Sadet Buddha image hall (where the Ai Khai statue is), which can accommodate hundreds of people (Figure 5b, photo 8). Table 1 also shows that the main materials (reinforced concrete and masonry) and structural systems (beams and columns) used in Wat Chedi are similar to those found in other temples and structures built throughout Thailand [40]. The results from the field survey indicate that, whilst many buildings are relatively modern, they can be classified as vernacular architecture. This is

justified because different buildings were erected based on different needs in order to meet demands of religious activities and cultural tourism. At present, Wat Chedi still continues to grow and develop in terms of the physical structures and surrounding areas, from the construction of new buildings and the expansion of the temple area to accommodate visitors both as Buddhists and general tourists. Both the buildings and other developments reflect the shifting dynamics of the social and cultural worship and offerings in different periods of time.

**Table 1.** Buildings at Wat Chedi, including their use, materials, and age.

No.	Name	Use	Material/Structural System	Age (Years)
1	Chapel	Religious activities	Reinforced concrete and masonry bricks	15
2	Abbot's cubicle	Abbot's residence	Reinforced concrete and masonry bricks	20
3	Multipurpose pavilion	Religious activities and local product market	Reinforced concrete and masonry bricks	9
4	Wooden temple	Temple board office and visitor welcome area	Wooden structure	3
5	Thai-style cloister	Monks' residence	Wooden structure	8
6	Toilet	Visitor toilets	Reinforced concrete and masonry bricks	6
7	Multipurpose hall	Visitor resting area	Reinforced concrete and masonry bricks	3
8	Pho Sadet Buddha image hall	Praying and making votive offerings to Ai Khai	Steel structure and masonry bricks	5



**Figure 5.** (a) Location of buildings, and (b) different architectural styles of buildings in Wat Chedi.

### 3. Results

#### *Vernacular Architectural Heritage in Wat Chedi*

Table 2 reports the results from the application of the novel assessment criteria proposed in Section 2.2 to Wat Chedi by the research team. For comparison, the same criteria were applied to Wat Phra Mahathat Woramahawihan temple. In this table, each criterion is scored from 0 to 3.0 to find an average valuable vernacular architectural heritage score as follows:

2.01 to 3.00 points: High valuable vernacular architectural heritage  
 1.01 to 2.00 points: Moderate valuable vernacular architectural heritage  
 0.01 to 1.00 point: Low valuable vernacular architectural heritage

For example, in the sub-criterion “Artistry”, both Wat Phra Mahathat and Wat Chedi scored 3.0 because they are beautifully ornamented with traditional Thai temple styles. In terms of the sub-criterion “Community layout”, Wat Phra Mahathat scored 2.0 since the temple is located in a historic town area and has blended with the surroundings, such as some local houses and three other Thai-style temples. On the contrary, Wat Chedi scored only 1.0 because the temple rather stands out from the community. Most houses near Wat Chedi in the area have one or two floors, which are considered small and different compared to Wat Chedi. The following sections discuss further the results presented in Table 2.

**Table 2.** Valuation criteria of the cultural heritage in Wat Chedi and Wat Phra Mahathat Woramahawihan\*.

Criteria	Sub-Criteria	Wat Chedi	Average Score	Wat Phra Mahathat Woramahawihan	Average Score
Aesthetic value	Artistry	3	2.25	3	2.5
	Architecture	3		3	
	Layout plan	2		2	
	Community layout	1		2	
Historical value	Local history	3	1.67	3	3.00
	Historical evidence	1		3	
	Long lifespan	1		3	
Scientific and educational value	Authenticity	1	2.00	3	3.00
	Wisdom	1		3	
	Uniqueness	3		3	
	Rarity	2		3	
	Pivotal moments	3		3	
Social value	Ceremonial	3	3.00	3	3.00
	Community relationship	3		3	
	Continuously used	3		3	
	Improved the economy	3		3	
<b>Total average score</b>			2.31	2.88	

\* Note: Point-based assessment criteria: Very clear = 3, Moderately clear = 2, Slightly clear = 1, No information = 0.

- **Aesthetic value.** Most of the interior architecture of both temples is based on the traditional Thai style, with stunning decorative patterns, especially in the main chapels, which house the temples’ main Buddha statues. Wat Phra Mahathat has a beautiful and traditional layout plan, which has experienced little change over time. There are groups of big trees at the site. The temple’s buildings are consistent with the surrounding areas. On the other hand, due to ongoing construction, the space inside Wat Chedi is not yet clearly separated between the Phutthawas (monks) area and Sangkhawat (people) area. However, the Sangkhawat area has a lot of trees, which creates a comfortable atmosphere. As the temple area has grown over time, numerous gift shops and restaurants have opened in front of the temple and alongside the road 3017.
- **Historical value.** Both Wat Phra Mahathat and Wat Chedi have connections with the local community’s history. The architecture of Wat Phra Mahathat is a strong evidence of Nakhon Si Thammarat’s ancient community establishment. Conversely, in Wat Chedi, only the Ai Khai and the main Buddha statue remain as physical relics of former buildings, despite its long association with the surrounding area. In the past decade, the temple and numerous structures have been demolished and rebuilt either partially or totally, thus resulting in the absence of old architecture as historical

evidence. As a result, the average historical score value of Wat Chedi (1.67) is much lower than that of Wat Phra Mahathat (3.00).

- Scientific and educational value. The buildings in Wat Phra Mahathat have high authenticity, and therefore, these buildings are enlisted by the Department of Fine Arts. The layout plan and design reflect the wisdom and beliefs of Buddhism, Brahmanism, and Hinduism. Such a temple is rare and unique. Although Wat Chedi has a long history with the community, the buildings are relatively new additions to the area (see last column of Table 2). Apart from the statue of Ai Khai, very little remains of past buildings at this time. Nonetheless, the rituals of blessings and with rooster statues and toys is a continuing developing tradition. Most importantly, various aspects of changes in Wat Chedi are worth studying. For instance, further studies should focus on environmental changes around Wat Chedi during the past five years, as well as on the development of offerings to Ai Khai, which have changed from live chickens in the past, to chicken statues and toys nowadays. People can study the authenticity of and from Wat Phra Mahathat, but they can learn about changes from Wat Chedi. The issues of changes should, therefore, be recognised. The two temples are both important as learning centres for the communities.
- Social value. Wat Phra Mahathat is the origin of Buddhist tradition and a famous tourist destination. Therefore, the site generates a large income for the province. On the other hand, Wat Chedi has a legend linked to the story of Ai Khai. There are community rituals and beliefs that have been passed down for generations, such as making a wish and bow to Ai Khai. Wat Chedi has received great attention from Buddhists across the country over the past decade. As a result, the temple and surrounding communities have experienced physical transformations and robust economic expansion. As a result of the important social value within the community, both sites have received the highest score (3.00) in Table 2.

Overall, the novel proposed criteria give total average scores of 2.31 (out of 3.00) for Wat Chedi, and 2.88 for Wat Phra Mahathat Woramahawihan sites, respectively. Whilst the historical value of Wat Chedi is classified as ‘moderate’ (average score of 1.67), the social value of the site is ‘high’ (average score of 3.00). Likewise, the aesthetic value of Wat Chedi is deemed as “high” (2.25) and almost comparable to that of Wat Phra Mahathat (2.5).

#### 4. Discussion

In a country like Norway, discrepancies between value assessment criteria by national authorities and the reality of local understanding can be found [41]. Similarly with this case, although the concept of conservation has expanded to include both tangible and intangible cultural heritage, UNESCO and the Fine Arts Department in Thailand place a strong emphasis on the authenticity of architecture with high historical and archaeological value, which demonstrates the connection between history and buildings. For instance, Wat Phra Mahathat Woramahawihan has high values in all four aspects of the proposed criteria: aesthetics, historical, scientific and educational, and social, thus leading to a high total average score of 2.88 out of 3.0 (see Table 2). This was expected as the site holds historic evidence of Nakhon Si Thammarat’s origins, and it is an ancient Buddhist centre in Southeast Asia.

Wat Chedi’s vernacular archaeological structures have changed due to environmental, economic, social, and cultural influences. Vernacular architecture adapts with social and economic changes, which affect the architecture’s formation and characteristics [42]. Studies of Thai architecture mostly focus on the preservation of original architectural designs, but modern Thai vernacular architecture has evolved over time as a result of environment and culture—an area which is not thoroughly researched yet [43]. The study of vernacular architecture and cultural heritage should be integrated with research and professional practice in order to be interdisciplinary and to drive in a common development direction [44]. Modern buildings at Wat Chedi have a beautiful architectural style, but they have become less authentic over time, preventing their registration as a historical site.

Wat Chedi is deemed as having a valuable vernacular architectural heritage due to its connection to history and the local community, as determined by the relatively high total average score of 2.31 out of 3.00 in Table 2. The site is a representation of the spirituality and faith of people. The results in Table 2 also indicate that whilst the architectural authenticity of Wat Chedi may not be as valuable as other sites, its spiritual and religious significance cannot be denied. The development of the site also stimulates the local economy through people's faith. Wat Chedi is, therefore, a valuable religious cultural heritage that the Thai government should recognise, along with other similar sites across Thailand.

Based on the findings of this study, it is proposed (Step 5 of Figure 3) that the Fine Arts Department (and/or related agencies) should adopt the criteria proposed in this study and register Wat Chedi on their lists of historic sites based on the temple's social values, particularly the tradition of praying and making offerings. It should be noted that the criteria proposed in this study can also be applied to other temples or heritage sites proved to be valuable in various aspects relating to traditions, expressions, myths, stories, arts, social practices, rituals, events, knowledge, and personal experiences of significant historical events or cultural events that shape historical and local character [45]. Moreover, future research should evaluate other case studies to provide a database of potential sites to be recognised by the Fine Arts Department, because there are many other sites we can identify as having the same situation, such as Wat Rong Khun, the White Temple in Chiang Rai Province, and even Nakhon Si Thammarat City Pillar Shrine, or other newly built sacred sites.

## 5. Conclusions

This study assessed the value of Wat Chedi's architectural design and features by adopting criteria based on international and national conservation concepts. It was found that the Fine Arts Department of Thailand tends to prioritise sites with physical buildings with high historical and archaeological significance. The concept of historical site preservation now encompasses both tangible and intangible heritage. To account for these, novel point-based assessment criteria were proposed that include four factors to determine the architecture value of sites: aesthetic value, historical value, scientific and educational value, and social value. Particularly, in the scientific and educational value, the point of emphasis is on examining changes as well as respecting them. The novel criteria were then applied to Wat Chedi and Wat Phra Mahathat Woramahawihan sites, where the latter was used as a representative of a historical site recognised by the Fine Arts Department. Based on the results of the study, the following conclusions can be drawn:

- Wat Chedi has become one of the most well-known and significant temples in Thailand, because thousands of Buddhists and tourists visit it daily.
- The novel proposed criteria give total average scores of 2.31 (out of 3.00) for Wat Chedi and 2.88 for Wat Phra Mahathat Woramahawihan sites, respectively. Whilst the historical value of Wat Chedi is classified as 'moderate' (score of 1.67), the social value of the site is 'high' (score of 3.00). Likewise, the aesthetic value of Wat Chedi is deemed as 'high' (2.25) and almost comparable to that of Wat Phra Mahathat (2.5).
- It is proposed that the Fine Arts Department (and/or relevant agencies) should adopt the criteria proposed in this study to assess other vernacular and religious sites across Thailand. It also proposed to register Wat Chedi as a valuable intangible cultural heritage site of faith to be known and to be inherited for future generations.

The latter point is justified as the novel valuation criteria proposed in this study found that Wat Chedi has:

- High social value (average score of 3.00). The buildings serve as a hub for the community's Buddhist traditions. There are legends and stories about the temple that show the holiness and faith of Buddhists across the country, resulting in a significant economic expansion for the temple and its surrounding community.

- High aesthetic value (average score of 2.25). The buildings are decorated with artisanal patterns in the architectural style of central Thailand. The layout of the temple grounds accommodates both religious activities and touristic services.
- High scientific and educational value (average score of 2.00). The majority of buildings rarely resemble designs from the past. The statue of Ai Khai and the rituals that have been passed down to the present day are the defining characteristics of Wat Chedi.
- Medium historical value (average score of 1.67). Due to the temple's rapid expansion, the majority of the buildings are less than ten years old and possess little resemblance to the original structures, with the exception of the Ai Khai statue, which serves as an important historical monument for the temple and community.

These assessment criteria were created and tested with only a few sites. Therefore, they can be re-evaluated and applied with more sites and by different and a greater number of stakeholders, particularly those receiving direct impacts like monks living in the temples, people working in the temples, or villagers settling nearby the temples, so as to derive a more comprehensive set of criteria in the future.

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## Appendix A

**Table A1.** Valuation criteria of vernacular architecture, adapted from [5,31].

Criteria and Sub-Criteria	Description
1. Aesthetic value	A single building or a collection of buildings designed to suit ethnic group's advantages or beliefs in mind. Beautifully crafted but also simplistic with the use of regional resources. Built with the environment in mind. Can demonstrate the unity of art, architecture, area planning, and community planning.
1.1 Artistry	Details of architectural patterns or decorative elements that were created using regional materials and decorated with fine village craftsmanship.
1.2 Architecture	Structures or clusters of structures constructed by villagers that built on ethnic groups' utilitarian or religious beliefs. They have an association between environmental resources, work locations, or ethnic groups' beliefs as seen in building styles. technological framework, construction techniques, materials, viewpoints, and building usage strategies.
1.3 Layout plan	A building or a group of buildings' surroundings typically include open areas, trees, and water sources that are connected to the building's construction and have a delightful atmosphere.
1.4 Community layout	The areas of the community and the surrounding environment that are important to the development of the community, such as rivers, resources, transportation routes, and landmarks, as well as a collection of buildings that are harmonious and united despite having various architectural styles, contribute to the aesthetic of the old town community area.

Table A1. Cont.

Criteria and Sub-Criteria	Description
2. Historical value	A building or clusters of constructions that serve as historical markers for towns or villages. It is associated with a local occurrence at a particular time in history. There is a particular architectural design that symbolises the origins of the community or its early culture.
2.1 Local history	A building or collection of buildings that are connected to significant figures or historical occurrences in the community and reflect its historical economy, society, culture, politics, and system of government.
2.2 Historical evidence	Historical testimony from villagers or communities that is convincing and complete
2.3 Long lifespan	The building is older than 50 years and can be used to date historical events.
3. Scientific and educational value	A building or group of buildings demonstrating originality, rarity, uniqueness, and utility from factors, beliefs, or wisdom in construction or planning by being able to convey the purpose to be clearly understood
3.1 Authenticity	Structures or parts of structures that can convey meaning through art, architecture, space planning, technology, materials, and usability.
3.2 Wisdom	Knowledge of a craftsman passed down from ancestors or knowledgeable individuals in various locales
3.3 Uniqueness	A singular structure or a collection of structures with similar features in terms of architecture, construction materials, uses, or cultural representation that serve to characterise a time or place.
3.4 Rarity	There is only one, or only one in a specific area.
3.5 Pivotal moments	Factors that affect design or structure or thought on the building such as technology, belief, social, tradition, economic, or politics
4. Social value	A building or groups of buildings connected to local legends, stories, or rituals that are widely known and accepted by the populace have all been used to advance the local economy.
4.1 Ceremonial relationship	A building or structures of buildings that are connected to customs, principles, and literary, artistic, or philosophical works.
4.2 Community relationship	A building or collection of structures with a strong emotional connection that serves as the neighbourhood's spiritual centre or is well-liked by the neighbourhood
4.3 Continuously used	A building or clusters of buildings that are constantly used for activities because of the building itself or its intended use.
4.4 Improved the economy	A way of ensuring returns and the welfare of the community or other related people

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