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Conservation Priorities Based on Current Conditions of Wooden Monasteries in Myanmar

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Abstract

ミャンマーは敬虔な仏教国であり、ミャンマー全土には遺跡も含めて数多くの寺院が点在している。ミャンマーにおける仏教寺院はミャンマーの文化を語るうえでとても重要であるが、経済発展の波の中でいくつかの寺院は消滅の危機に瀕している。とくに木造の僧院はその構造的な特徴から、一度メンテナンスが放棄されると老朽化が加速し、一挙に廃墟になりかねない危険性をはらんでいる。この研究の上位の目標は、ミャンマーの木造僧院の保全のためのガイドラインを作成することにあるが、まずは本報において、その現状を報告し、ガイドライン作成のための課題を整理した。

1. Introduction

Throughout the history of Myanmar where has been home to diverse ethnic groups that migrated to the region as well as the stage for the rise and fall of many kingdoms. Therefore, a large number of precious cultural properties and heritage sites exist that embody the history of ancient cultures. In Myanmar, there are essentially three kinds of Buddhist structures: (1) stupas (bell-shaped structures with Holy Buddha relics) (2) temples (place of worship), and (3) monasteries (religious buildings where monks reside and meditate). Among them, this report will concentrate on the conservation prioritization for wooden monasteries. These are very important not only as prominent symbols of Burmese history but also should be preserved for future generations to maintain the national and cultural identity of Myanmar.

However, there is no systematic policy for the preventive conservation of built cultural heritage in Myanmar. Therefore, it is necessary to consider the conservation priorities for protecting the cultural attributes of the wooden monasteries in Myanmar. This research will focus on the main structure of physical places to identify issues that need to be prioritised in conservation efforts. This approach is based on evaluating and using combinations of the attributes to define and implement the priorities for structural conditions and place-based conservation actions.

Conservation prioritisation is about decision support for conservation planning. It aims to answer questions about when, where, and how we can efficiently achieve conservation goals.

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Conservation prioritisation utilizes assessment tools and analyses that are relevant for conservation actions for future conservation management plan.¹ Generally, three main steps are involved in assigning conservation priorities: (i) acquisition and assessment of information on the existing baseline building and on potential impacts, (ii) assignment of values to the structural components concerned and integration of these overall values for alternative possible conservation targets, and (iii) incorporation of legal considerations to determine the practical priorities based on the problems of heritage conservation.² Based on the literature on these immediate challenges for conservation, many conservation professionals and organizations have recognised that greater cohesion, connection, and integration are needed in the conservation field. Therefore, the conservation priorities are the basic essential key step to implement the actions to be taken before the next steps on heritage protection policies, management plan, and intervention. This key step in this research ought to be integrated better and embedded with the relevant fundamental contexts for monitoring a broader operational category of systematic conservation approach.

For these reasons, high-priority strategies and projects should have significant scope for the impact on threats affecting wooden monasteries, which may have significant impacts on many areas of conservation prospects. It is necessary to determine the conservation priorities and examine whether the current potential strategies abate the threats at multiple conservation sites based on the scope of common problems and issues. By evaluating the impact of problems-based priorities, it will be easier to prescribe further key points for conservation processes in terms of how to make legislative protection with relevant policy and management plans for the next upcoming procedures. Moreover, it will enhance the strategies of minimal intervention processes particularly for future sustainability of the conservation monasteries as well.

1.1. Purpose

- To define the heritage values of the monasteries with verified documents and survey resources for physical evidence.
- To make the inventory survey as the hidden heritage collections of wooden monasteries in Myanmar.
- To highlight the critical need of conservation priorities by identifying on these religious structures based on heritage values and assessments.

1.2. Original Points of the Research

The main characteristics of the research are the possible conservation interventions to tackle current and local conservation priorities. The priorities were selected based on past experiences and recorded after modifying them to comply with conservation ethics and regulations. The current study highlights the importance of recognising the authentic value of architectural heritage and spreading awareness about conservation priorities and strategies that would target the urgent and important problem areas and help prolong the life of wooden monasteries in Myanmar. Basic strengthening measures can be applied to these wooden monasteries as per priority and grading level assessment. The principal objective is to help preserve Myanmar's cultural hub of traditional wooden monasteries using inspired conservation efforts and best management practices.

1.3. Problem Statement

The problem statements in this research will be formulated by determining the major measurable impacts of heritage conservation, including heritage tourism, cultural industries, center city revitalisation, and cultural values for religious properties. The research focus is on how to conserve the cultural properties of vernacular structures that could also regenerate the city's urban fabric without destroying or neglecting it.

1.4. Method of Analysis

The research methodology is composed of three main research processes: review, discovery, and utilization mainly based on verified documents on cultural and historical significances, the conditions of religious buildings in Myanmar, and maintenance of current evidences and structural typologies to congregate the fundamental strategies of preventive approaches.

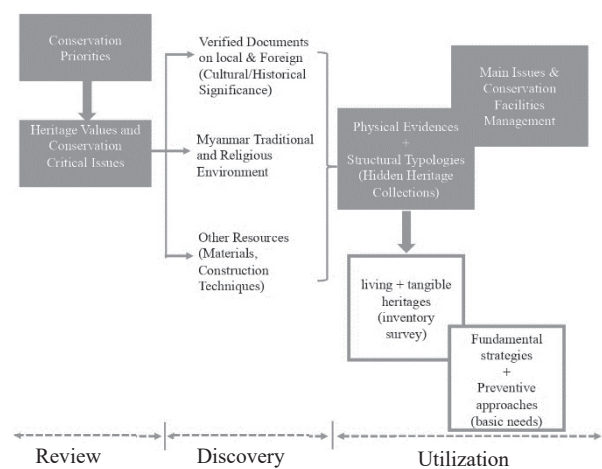


Fig.1.1. Diagram of Research Methodology

According to this diagram 1.1, cultural heritage assets should be followed with providing the wooden monasteries in selected survey data collection in different parts of Myanmar. The analysis underlines the critical approach of inventory plan as foremost with the public, which may serve in a straightforward, honest evaluation for integrating the contrast dimensions of conservation methodology depends on the local current conditions.

2. Background History and Influencing Factors of Wooden Monasteries in Myanmar

Most religions in Myanmar are mainly relied on Buddhism; therefore, the Buddhist monasteries feature prominently among the religious structures. In the old times, the monasteries were highly elaborated to depict the advancement of traditional Myanmar art and architecture. This is one of the reasons why the wooden monasteries are very meaningful and precious for Myanmar citizens; they not only have religious significance but also represent the development of Myanmar's architecture in history and epitomize Myanmar's own architectural dignity, which deserves to be respected, honored, and valued. Therefore, the 18th and 19th centuries were the most developed period of monastic architecture in Myanmar, mostly known for wooden structures.

Therefore, it could be assumed that the traditional Myanmar art and architecture mainly flourished in these eras.³ For this reason, considering the cultural properties of wooden monasteries is necessary for the conservation priority scheme as it will help to conserve them in the appropriate way. Thus, the integrity and authenticity of wooden monasteries should be conserved systematically for the future sustainability of tangible heritage structures.

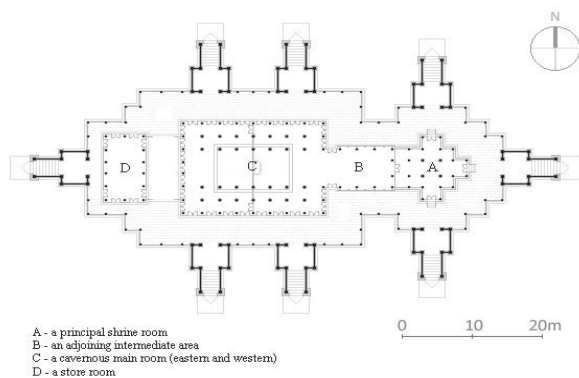


Fig.2.1. A Typical Plan Layout of Wooden Monastery*1

It involves positive intervention to keep wooden monasteries as close to their original condition for as long as possible. With an honest approach to conservation, the initial stage starts with designating priority levels to the heritage structures being conserved in wooden monasteries in different regions of Myanmar. This may lead to the discovery of diverse characteristics of monasteries corresponding to the diverse ethnic cultures and communities across the nation.

2.1. Architectural Characteristics of a Wooden Monastery

The monastery exhibits the use of many traditional Burmese styles having ancient artistic, cultural, and traditional value. The monastery is an attractive traditional wooden building, one of the few types of historical buildings to have survived until now. It consists of many impressive woodcarvings and contains a number of admirable works of art and architecture.

There were four main apartment divisions in a traditional wooden monastery. Generally, it consists of a principal shrine room, an adjoining intermediate area which may serve as a room for the abbot or as a passageway between the shrine and the cavernous main room (including the eastern and western parts), and a smaller apartment at the western end, which usually serves as a store room. The edifice was usually surrounded by a wide veranda where monks perform their daily exercises. To emphasise the hallowed nature of the building, each apartment is marked externally as a set of distinctive multi-storied roofs. Historically, most of the wooden monasteries in Myanmar were only one story high as in form.³ The most important part of the building is located at its symbolic centre - it is a large rectangular hall divided into two square rooms by a partitioning wall.

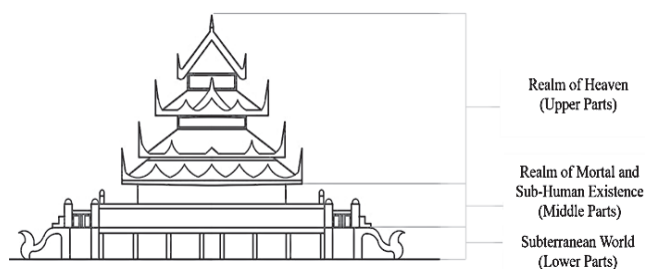


Fig.2.2. General Burmese Monastic Architectural Concept*2

The room nearest to the eastern entrance is a public space where a Buddha image is displayed and rituals involving both monks and laymen are celebrated. The western room is reserved for activities in which only monks are involved. To the west beyond the main hall, a storeroom is situated that may be attached or unattached to the main structure. The entire structure is visually unified by the continuous horizontal terraces and eaves of the various roofs, as seen in figure 2.3.

Generally, the structural composition of a wooden monastery can be divided into three parts as seen in figure 2.3: (1) the upper parts symbolise the realm of the heavens, including roofing, tiered roofs, sculptures, and traditional roof decorative elements; (2) the middle parts represent the realm of mortal and

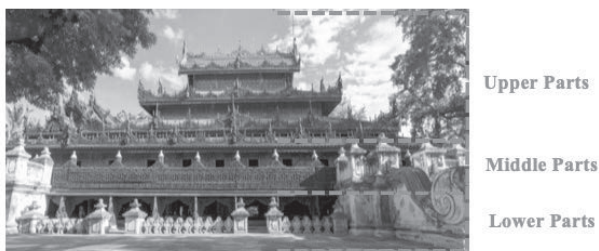


Fig.2.3. Structural Composition of a Monastery ³

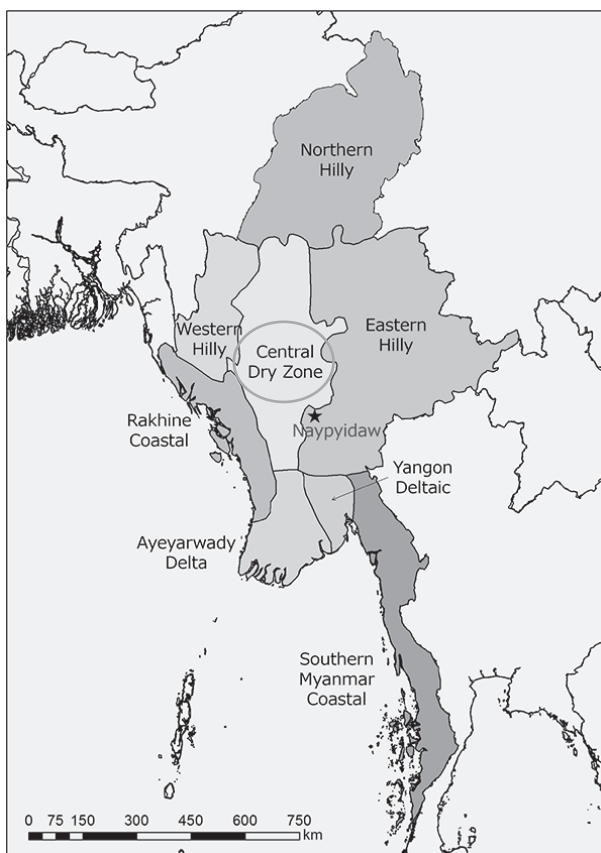


Fig.2.4. Myanmar's Eight Physiographic Regions⁶

sub-human existence, including walls, windows, doors, pillars, and balustrades, and (3) the lower parts characterise the subterranean world, that is, the part below the balustrades, including short supporters, stairs, and the ground decorative elements of a monastery³.

2.2. Weather Effect Based on Climatic Conditions of Wooden Monasteries

This section will discuss the effect of weather on the monasteries. It is also important to identify that the main building material is wood, which is a challenging building material. It burns, it decays, its strength varies depending on the way the grain is oriented, and it is very sensitive to the weather conditions such as temperature and humidity. Generally, wooden structures have cracks or loose joints caused by temperature variation. Most of the wooden monasteries situated in the central dry zone of Myanmar in the circle area of figure 2.4 have been ruined because of the extremely dry climate, which pulls moisture out, causing cracking or warping.

As most of the wooden monasteries were built in the central dry zone, the most challenging factors are high-temperature variation and severe rain. According to the field survey results, most of the structural components of wooden buildings are severely damaged by the lack of weatherproofing, regular treatments, and maintenance. Therefore, it is necessary to analyse extreme events and review the key climate processes applying the structural risk information; for example, roof deterioration, cracking on the wooden pillars and moisturisation directly from the ground may damage the ground floor's short supporters and long pillars particularly.

Thus, conservation efforts must decide the priority level of each action and determine how to help the monastery survive the weather by conducting local vulnerability assessments and adaptation planning activities that are necessary for weatherproofing and treatment procedures on these vernacular monasteries.

2.3. Types of Tree Species Used in Wooden Monasteries

In the history of Burmese traditional architecture, wooden buildings occupy an important place, with the most popular building material being teak wood, a tropical hardwood tree species. Myanmar, also known as Burma, is one of the Asian countries where the overwhelming majority of buildings are wooden and also their architectural and ornamental quality is very high.⁴

Owing to the current high cost of teak wood across the world, it is difficult to obtain large quantities of teak wood for replacing old wood in restoration projects, especially for historic conservation. Most of the surveyed monasteries in this study were built from teak wood in ancient times. At that time, Myanmar was rich in forest resources and the type of wood used for building structures represented the rank and status of the owner. However, nowadays most of the monasteries built of teak wood are endangered due to the lack of maintenance or unsympathetic restorations, an issue emphasised by the rareness and high cost of teak wood, and the loss of craftsmanship.

Without proper restoration, the artistic wood carvings on the monasteries would be lost and it would be impossible to reconstruct the traditional features. Therefore, owing to the scarcity and high cost of teak wood, some wooden buildings in restoration projects are mended using other tree species like hardwood types; Pyin-Ka-Doe (*xylia xylocarpa*); a kind of ironwood tree; and Ingyin (*shorea siamensis*), a kind of tall indigenous tree.

2.4. Site Selection for Surveyed Monasteries

The site selection for the physical field survey is a very important part of this research because wooden monasteries are very rare nowadays in every region of Myanmar. The idea of site selection came from the literature on the evolutionary history of the monasteries, most of which is related to the history of Myanmar Kingdom, wherein the last Kingdom Palace was established in the central part of Myanmar. In that era, especially the 18th and 19th centuries, the donation of Buddhist monastery was favored. Moreover, the building characteristics of the monastery including skillful construction techniques, materials, architectural features, and monastic ornamentation, had to be varied depending on the status of the donor. This is one of the interesting points to be studied in those area.

Hence, this research focused on surveying the current conditions of wooden monasteries, mainly in the different regions of Myanmar where has enriched of old wooden monasteries. Therefore, the survey was mainly done into two times, especially in the central area of Myanmar where a large number of traditional wooden monasteries are located. Owing to its location between India and China, Myanmar has nurtured a diversified identity. It is cultural hub where people of various ethnicities and races have come and gone. This cultural heritage, in particular, is a physical proof of Myanmar's cultural richness

and diversity that continues to this day, and a number of its cultural artefacts can be said to represent the cultural heritage of the entire Southeast Asia.

However, under the political and social circumstances in Myanmar after independence, measures for cultural heritage protection remained insufficient for a long time. This is part of the reason why some proposed sites only in Myanmar have been inscribed on the World Heritage List, even though the country is home to some of the world's most famous monuments and is a member of the World Heritage Convention.⁵

The table 2.1 shows the list of survey regions into two parts; August 2018 and April 2019. These regions possess a rich historical background and highly unique cultural heritage properties. The above survey regions make the physical assessment of wooden monasteries' criteria based on data acquisition and monastic structural behavior. Then, each region is described by the name of the monastery, construction year, the present conditions, and functions of the wooden monastery which may be: adaptive reuse, occupied by monks, vacant, deteriorated, ruined, burnt down, or neglected.

Table 2.1. Survey area of wooden monasteries in Myanmar

Survey year	Survey area	Physiography	No. of survey monasteries
2018 August	Mandalay	Central dry zone	15
	Innwa	Central dry zone	1
	Amarapura	Central dry zone	1
	Bagan	Central dry zone	6
	Sa-le	Central dry zone	5
	Inle Lake	Eastern Hilly	10
2019 April	Nyaung-Shwe	Eastern Hilly	2
	Mandalay	Central dry zone	3
	Sagaing	Central dry zone	1
	Hsipaw	Eastern Hilly	5
	Monywa	Central dry zone	5
	Pakkoku	Central dry zone	7
Total no. of monasteries			63

According to the list of 63 monasteries in these survey regions, it can be extracted to study the specific surveys particularly in this central region of Myanmar where have been lots of wooden built heritages developed.

2.5. Restoration Project of Shwe-Nan-Daw Monastery

This section will conduct a case study on one of the wooden monastery restoration projects in Mandalay. Shwe-Nan-Daw monastery was originally part of the Royal Palace in Amarapura, which was the capital of Myanmar twice ¹¹ (1783-1821 and 1842-1859) during the Konbaung period (1752-1885). When the capital city was moved to Mandalay, the building was dismantled, transported to Mandalay from a former capital

Amarapura, and rebuilt there as part of the new all teak Royal Palace in 1857. King Mindon (1853-1878) used the building for his personal living quarters in the compound of the palace. After King Mindon passed away in 1878, his son King Thibaw (1878-1885)¹² decided to dismantle and rebuild it as a monastery in order to commemorate his father. For this reason, King Thibaw relocated the building to its current location outside of the palace grounds, where it was converted into a monastery in 1880. The form and space composition of Shwe-Nan-Daw monastery gives a symmetrical effect with a simple rectangular plan. The concept of this monastery was the form and space composition of the hierarchical concept and idea as the continuity in the arrangement of plan layout precisely into a single linear composition.⁶ Even though it was a single chamber, which was different from other monastery's characteristics, it features artistic and powerful ornamentation of great historical value as it was commissioned by a King.

The National Museum, Mandalay; the Department of Ar-

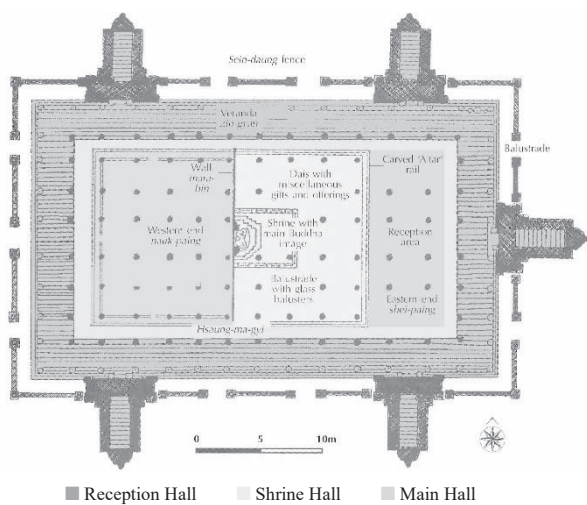


Fig.2.5. Layout Plan of Shwe-Nan-Daw Monastery^{*8}



Fig.2.6. Shwe-Nan-Daw Monastery^{*7}

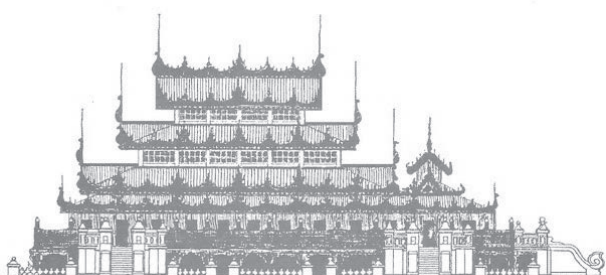


Fig.2.7. Elevation of Shwe-Nan-Daw Monastery^{*8}



Fig.2.8. Repairing of Dragon-Serpent (Nayar) sculptures^{*3}



Fig.2.9. Replacement of New Teak Wood Pillar^{*5}

chaeology, Mandalay; and the World Monuments Fund have been conducting this restoration project since 2014. The structural problems found especially on the southern and western end of the buildings were caused by the following main issues that are necessary for priority restoration. They are the water drainage system around the monastery and the replacement of old pillars and floors. Additionally, it is necessary to conserve the Kongbaung era's artwork, particularly woodcarving sculptures on the balustrades. The water drainage system was managed systematically to create a drainage outlet with an appropriate design around the monastery.

The prime focus of this project was on restoration; conditional assessment of the pillars that had deteriorated were performed, especially in the south-west parts where the subterranean ornamentation such as the Nayar (Dragon-Serpent) sculptures, as seen figure 2.8 are relatively in the stage of very advanced deterioration, physically weakened, and structurally compromised.

The teak pillars covered with the marble cap had been damaged by termites - which are white ants that feed mostly on cellulose (wood), as shown in figure 2.10, leading to structural problems and severe rain. Moreover, these teak pillars were directly exposed to the moisture-laden ground due to the weak maintenance of the foundation. The floor adjacent to the veranda has also been damaged by Mandalay's hot and dry weather due to the lack of proper conservation. The Kongbaung era's woodcarving artwork will also be restored to its original state by famous and expert carpenters.

The pillar replacement in this project uses the following replacement techniques; (1) total replacement, (2) partial replacement, and (3) infill replacement. This restoration project aims at the conservation of the monastery and revitalising its surrounding area, in addition to developing a work force com-

prised of local craftsmen trained on conservation practice and site management skills; including traditional carpentry crafts, traditional timber framing, water damage treatment, and protective measures against fire. This endeavor runs in partnership with local communities and Myanmar's government.⁷

Therefore, a conservation study was conducted on the traditional building technologies employed at the site to gain an understanding of the deterioration and threats to the building's primary building material, teak wood, in the tropical environment. Based on these activities, emergency structural, foundation, and drainage repairs were undertaken. Then, the subsequent work focused on water management upgrades, repair of the monument's staircases, and a comprehensive program targeting the monastery's veranda, where a first floor-level walkway surrounds the building.⁸

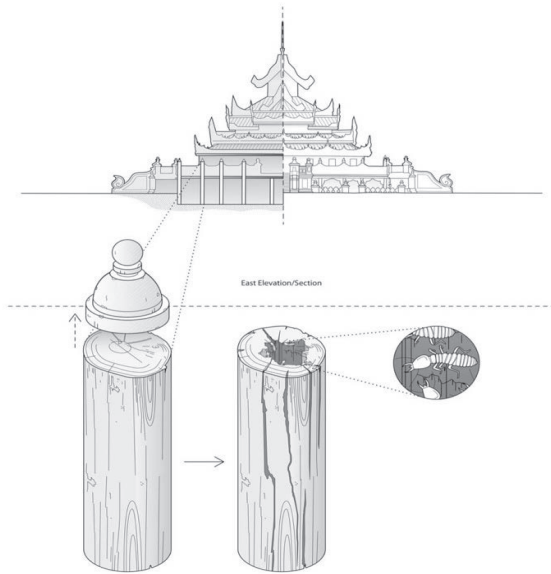


Fig.2.10. Deterioration found on the Termite Issues^{*9}



Fig.2.11. Shwe-Nan-Daw Monastery's Restoration Works^{*10}

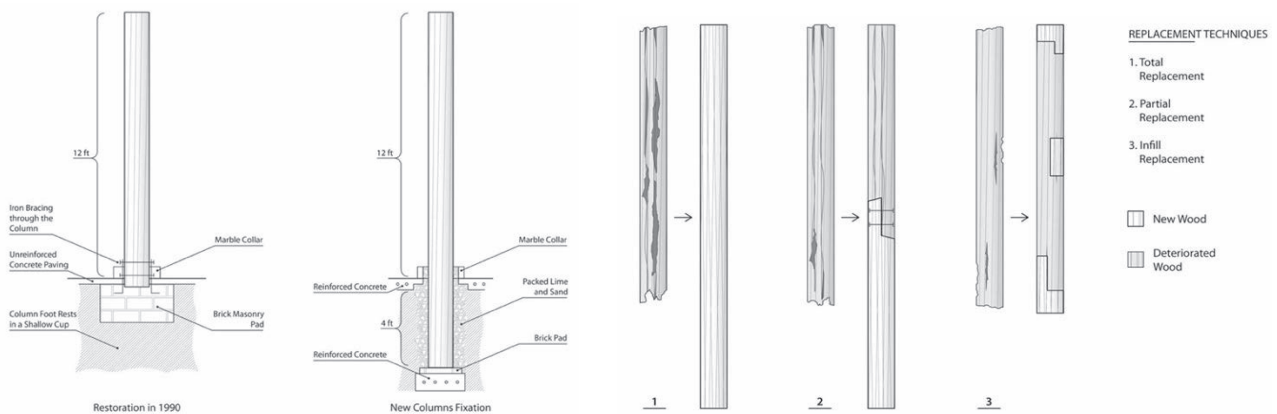


Fig.2.12. Details of Pillar Restoration in Shwe-Nan-Daw Moastery^{*9}

3. Current Conditions of Wooden Monasteries

In Myanmar, wooden monasteries are one of the greatest ensembles of religious structures where may explore traditional Burmese art and architecture. Such kind of buildings are mainly necessary to consider as the historical assets for multiple levels of priorities depending on the status of the current conditions. Accordingly, the following 63 wooden monasteries will state that most of them were built in Konbaung dynasty (1752-1885) at least over 100 years old structures with the descriptions of survey lists and individual information. Then, the heritage value assessment has conducted according to the significance values found on the wooden monasteries by different disciplines to the problems of conservation planning and local conditions relatively.⁹

The physical field survey was mainly done on the structural assessment with development plan into; (1) protection status, (2) brief description of the monastery, and (3) sketch plan and recorded photos on site. For protection status, it is designated for protected monastery or proposed protected monastery or not. Concerning about the descriptions which may include with history, the construction year, materials, façade ornamentation and environmental settlements. Finally, it is also necessary to check the fire safety level and conservation priorities level.

3.1. Physical Assessment of Wooden Monasteries

To find out the priority level of conservation, the criteria of this research mainly based on the physical conservation or maintenance of current conditions heritage value assessment. Specifically, it has been addressing on the building age, the status of the current use for example which is original or new ones depends on its architectural features and functionality. Moreover, there is another important perspective to be noticed that it is fire safety because the structure of the building was mainly built in wood and it is necessary to investigate the conditions of electricity supply for fire prevention measures and fire assessment for providing the fire safety basic level or not; for instance, is there any preparing of fire extinguisher or accommodating water resources like water buckle as in be ready conditions just in case of fire.

Finally, it comes to the important part of the field survey to establish the priority level based on the physical deterioration assessment and structural failure. The four priority levels can be categorized into; 1 – excellent condition or minimal deteri-

orates that do not require refurbishment works but need maintenance works, 2 – good condition or small deteriorates in the structure that do not require immediate actions for conservation but regularly require superficial repairs works, 3 – moderate condition or relevant deteriorates with unavoidable danger but require appropriate interventions to reinforce the structure, and 4 – poor condition or major deteriorates whereas the monasteries are newly constructed or old and new materials are in mixed conditions and also unstable structural problems and urgently require reinforcement actions and adaptation of critical safety measures for appropriate conservation respectively. In these following tables, Kyaung means monastery in Myanmar terms.

The result of grading levels of wooden monasteries is proceeded according to the significance values of history, building age, architecture, maintenance system. It is also necessary to consider the conservation capacity based on the limited conservation resources and situations of Myanmar as developing country. In this study, the criteria for the conservation grades make on the qualitative content analysis was used to evaluate the relationship between the monastic architectural heritage and conservation conditions. It can be concluded that the conservation system can be investigated and analyzed at the four grades by the cultural value, economic value, historical value and identity greatly influence the local evaluation to develop the priorities for its conservation of those architectural heritage.

According to the above data, the criteria for physical assessment of these monasteries are mainly figured out into structural behaviors and current conservation conditions and maintenance systems. However, the fire assessment which is surprisingly found out nearly 0% of fire protection in most of the wooden monasteries. Moreover, the following pie chart is the explanation of the grading level assessment differentiated on the priority levels of wooden monasteries in different regions of Myanmar.

Grade 1: Outstanding monasteries, to be systematically inspected and preserved in perfect condition (G-1) – 8%

Grade 2: Exceptional monasteries, to be regularly inspected, maintained and repaired (G-2) – 27%

Grade 3: Important monasteries, to be periodically inspected, maintained and repaired when urgently needed (G-3) – 36%

Grade 4: Miscellaneous groups which are newly constructed or old and new materials mixed (G-4) – 29%

The above percentages for each grade show the analytical survey based on the current conditions of wooden monasteries focusing on conservation management plan. These tables show the old wooden monasteries' structures nowadays are very ruined and destroyed by the natural and by the people misunderstanding maintenance systems. Moreover, the conservation

methods in some regions are very drained because of the local intervention. Therefore, these records are taken to the old wooden monasteries at least over 100 years by photographs, drone and some ground measurements and collected some of the documents and old books for further data references productively.

Table 3.1 Physical assessment of wooden monasteries

Region	Name	Built Year	Status	Electricity Supply	Fire Assessment	Priority level
Bagan	Nat-Taung Kyaung	19 th C	Monastery	Yes	No	2
	Dakinawun Kyaung	19 th C	Monastery	Yes	No	2
	Taung-Bi Kyaung (Eastern)	19 th C	Vacant	No	No	2
	Nyaung-U Yoke Sone Kyaung	Konbaung Period	Monastery	Yes	No	3
	Nyaung-U Nat Daunt Kyaung	Konbaung Period	Monastery	Yes	No	3
	Hman-Kyaung	Around 1870	Fired in 2017	-	-	4
Sa-le	Yoke-Sone Kyaung	1882	Museum(Adaptive reuse)	No	No	1
	Lei-Tha Kyaung	1870	Monastery	Yes	No	2
	Mahar-Gandawun Kyaung	19 th C	Monastery	Yes	No	4
	Kyauk-Sa-Yon Kyaung	1888	Monastery	Yes	No	3
	Thein Kyaung	1858	Monastery	Yes	No	3
In-le Lake	Nga-Phe-Chaung Kyaung	1843	Monastery	Yes	No	2
	Kyaung-Ni Kyaung	1846	Monastery	Yes	No	4
	Bago Kyaung	1973	Monastery	Yes	No	4
	A-Nauk-Shwe Kyaung	1940s	Monastery	Yes	No	4
	Patama-Taik	Around 1846	Monastery	Yes	No	4
	Thar-Lay-Taung Kyaung	1832	Monastery	Yes	No	4
	Bein-Daw Kyaung	1925	Monastery	Yes	No	4
	Myay-Ni-Gone Kyaung	1851	Monastery	Yes	No	4
	Nyaung-Oak Kyaung	Around 1832	Monastery	Yes	No	3
	Shwe Kyaung	1924	Monastery	Yes	No	4
Nyaung-Shwe	Tate Nam Kyaung	1903	Monastery	Yes	No	4
	Shwe-Yan-Pyay Kyaung	1888	Monastery	Yes	No	2
Yesagyo	Pakhangyi Kyaung	1886	Museum(Adaptive reuse)	No	No	1
	Pakhannge Kyaung	1864	Remains-Ruins	No	No	3
Pakkoku	Taw-Way-Kan Kyaung	Bagan period (11th - 13th C)	Two Monasteries in one	Yes	No	3
	Ohn-Don-Bin Shwe Kyaung	1738	Vacant, maintained by the monk	No	No	2
	Atula-Mingalathiri Kyaung	19 th C	Monastery	Yes	No	4
	Khan-Taw-Taung Kyaung	19 th C	Monastery	Yes	No	3
	A-Neint Kyaung	19 th C	Fired in 1989	-	-	4
	Yoke-Sone Kyaung	19 th C	Fired in 1957	-	-	4
	Mandalay Taik	1907	Monastery	Yes	No	2

Table 3.2 Physical assessment of wooden monasteries

Region	Name	Built Year	Status	Electricity Supply	Fire Assessment	Priority Level
Mandalay	Shwe-Kyin Kyaung	1860	Monastery	No	No	1
	Shwe-Nan-Daw Kyaung	1878-83	Museum(Adaptive reuse)	No	No	1
	Taik-Taw Monastery	1857	Remains, Ruins	-	-	4
	Yamethin Kyaung	1870s	Monastery	Yes	No	2
	Moe Kaung Kyaung	1871-75	Monastery	Yes	No	3
	Kye-Myin Kyaung	1875	Monastery	Yes	No	2
	Sa-Daw-Wun-Min Kyaung	1878-1885	80% Ruination	No	No	3
	Thin-Gaza Kyaung	1861	Monastery	Yes	No	3
	Shwe-In-Bin Kyaung	1895	Monastery	Yes	No	1
	Mya-Daung Monastery	1884	Remains, Ruins	-	-	3
	Thakawun Kyaung	1879	Vacant	No	No	2
	Bha-Mo Kyaung	1820	Monastery	Yes	No	2
	Mahar-Min-Htin Kyaung	1878	Monastery	Yes	No	3
	Ashoka-Yama-Taik, Yadana-Bon-Kyaw Monastery	1787-1790	Remains, Ruins	-	-	3
	Pin-Thar Monastery	1878-1885	Monastery	Yes	No	2
	Medaw Kyaung, Queen Mother's Monastery	1842	Remains, Ruins	-	-	3
	Thameedaw Kyaung, The Princess Monastery	1842	Remains, Ruins	-	-	3
	Pyi-Min-Thar Kyaung	1839	Monastery	Yes	No	2
	Innwa Bagaya Kyaung	1834	Museum(Adaptive reuse)	No	No	2
	Ariya-Wun-Tha Kyaung	Innwa Period	Monastery	Yes	No	2
Amarapura Bagaya Kyaung	1782-83	New with brick structure	Yes	No	4	
Hsipaw	Bo-Daw Kyaung	1891	Monastery	Yes	No	3
	Maha-Nanda-Kantha Kyaung	1848	Monastery	Yes	No	2
	Maddayar-Shwe Kyaung	1863	Monastery	Yes	No	3
	Kyin-Thee Kyaung	1774	Monastery	Yes	No	3
Monywa	Yayhaw Kyaung	1893	Monastery	Yes	No	3
	Sagumaw Kyaung	1936	Vacant, Ruin	No	No	3
	Taing-Tayar Kyaung	1896	Vacant, Ruin	No	No	3
	Mahar-Zawtika-Yama Taik	1894	Monastery	Yes	No	4
	Min-Ye Kyaung	1375	Monastery	Yes	No	3
	Bon-Pyan Kyaung	1858	Monastery, Ruin	Yes	No	3

3.2. Bagan

The following monasteries are extricable tied to conservation's primary objective in Bagan region. Kyaung means monastery in Myanmar terms.

3.2.1. Nat-Taung Kyaung

This elegant Nat-Taung Kyaung is possibly known as the oldest monastery in the Taung-Bi area also called Mya-Taung taik (monastic compound). Concerning the founding of the main monastery around 19th century dating back to about 200 years ago. The monastery has been refurbished time by time because of the monastic antiquity design is very detailed and ornamentation especially in the majority of wood-carvings. The current conditions of this monastery is regularly repaired and maintained by the monks. (See fig 3.1 – 3.2)

3.2.2. Dakinawun Kyaung

This monastery is situated in the same compound of Hman Kyaung and had been stood as a monastic site around 19th cen-

tury for 200 years in Bagan. The balustrades and the few remaining carvings are older and probably came from an earlier building. But the current conditions have found that some intervention in roofing area in the entrance of western style masonry staircases and it was refurbished as the original restoration in 1996 for the basic necessity's enhancement of the structure. It is now maintained by the monks. (See fig 3.3 – 3.5)

3.2.3. Taung-Bi Kyaung (Eastern)

This large monastery is close to the town of Bagan which is locally known as Taung-Bi monastery in 19th century around 200 years old. It was refurbished in 1991 and dismantled under the supervision of the Department of Archaeology. This monastery has been vacant from 1998 to until now and it has also plan to settle the monks over there because the structural condition is very well to reside and it is necessary to maintain the traditional monastic architecture for future perspectives as heritage in UNESCO world heritage zone. (See fig 3.6 – 3.8)

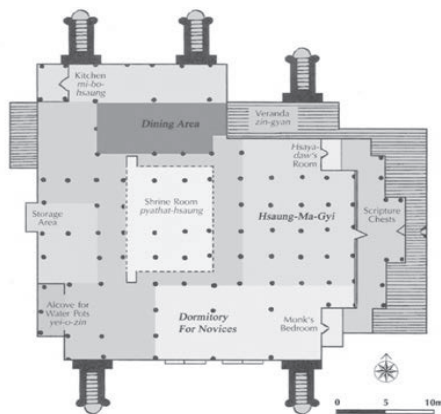


Fig.3.1. Plan of Nat-Taung Kyaung^{*8}

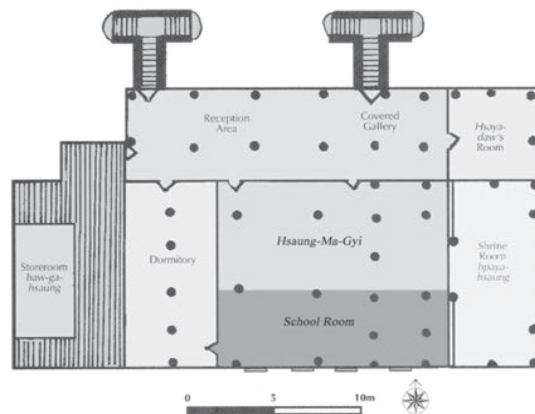


Fig.3.3. Plan of Dakinawun Kyaung^{*8}



Fig.3.2. Nat-Taung Kyaung^{*4}



Fig.3.4. Dakinawun Kyaung in 1998^{*8}



Fig.3.5. Dakinawun Kyaung^{*4}



Fig.3.6. Taung-Bi Kyaung (Eastern)^{*4}



Fig.3.7. Taung-Bi Kyaung (Eastern)^{*4}



Fig.3.8. Taung-Bi Kyaung (Eastern)^{*4}

3.2.4. Nyaung-U Yoke-Sone Kyaung

This monastery dates to the Kon-Baung period. It was refurbished in 1998 and inhabited by the monks where is located in Nayung-U township, Bagan. It is surrounded by the new monastic compound and the original monastery is maintained by the chief monk. There has found out some interventions for original structural enhancement. But the structural condition has deflection on west and south side of this monastery. (See fig 3.9 – 3.11)

3.2.5. Nyaung-U Nat-Daunt Kyaung

Nayung-U Nat-Daunt Kyaung is also the compact monastery in its compound dating back to the Kon-Baung period. It has been occupied by the monks and maintained with the help

of local people. It has the characteristics of Kon-baung monastic composition and architectural elements are simple linear composition expressing the traditional Burmese art and architecture. There has also found out some interventions for original structural enhancement. (See fig 3.12 – 3.15)

3.2.6. Hman Kyaung

Hman Kyaung is located within the precincts of the Ananda Temple at Bagan. It was built around 1870 and in 1998, the monastery was in a most perilous state of repair. But after this, the original structure was unfortunately fired in 2017 and now this monastic compound is newly constructed with brick structure monasteries and the remains of the original building cannot be seen in this compound. (See fig 3.16 – 3.17)

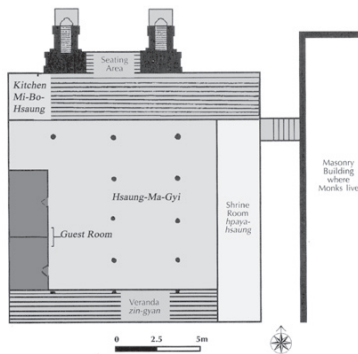


Fig.3.9. Plan of Nyaung-U Kyaung^{*8}



Fig.3.10. Nyaung-U Yoke-Sone Kyaung^{*4}



Fig.3.11. Nyaung-U Yoke-Sone Kyaung^{*4}



Fig.3.12. Nyaung-U Nat-Daunt Kyaung^{*4}



Fig.3.13. Nyaung-U Nat-Daunt Kyaung^{*4}



Fig.3.14. Old Furniture in Nyaung-U Kyaung^{*4}



Fig.3.15. Interior of Nyaung-U Kyaung^{*4}

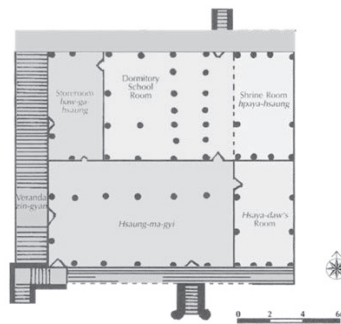


Fig.3.16. Former Plan of Hman Kyaung^{*4}



Fig.3.17. New Monastic Compound of Hman Kyaung^{*4}

3.3. Sa-Le

The following monasteries are extricable tied to conservation's primary objective in Sa-Le region. Kyaung means monastery in Myanmar terms.

3.3.1. Yoke-Sone Kyaung

This monastery, which is famous for its fine wood-carvings, is located in Sa-Le, an important town during the Bagan period (1044-1287). It was built in 1882 and now it is reused as the museum of traditional monastery building but it has been stolen many wooden carvings and into a state of disrepair. In the 1970s, the structure was refurbished what was left of the building and placed it on a concrete slab. It is now under the conservation by the Department of Archaeology. (See fig 3.18– 3.20)

3.3.2. Lei-Tha Kyaung

Lei-Tha monastery is located Sa-Le nearby the Yoke-sone monastery. It was built around 1870 donated by the farmer couple during the reign of King Min Don. Fortunately, some details regarding its founding have been preserved for posterity in the monastery library. In 1998, the monastery underwent renovations by the Department of Archaeology, Bagan. (See fig 3.21 – 3.22)

3.3.3. Mahar-Gandawun Kyaung

Mahar-Gandawun Kyaung is located in Sa-Le region and built in 19th century monastic building. There is no exactly records of this monastery but the remains of staircase and the architectural features show the linear composition of late Kon-Baung era. The remaining stairs is the original styles and some parts are replaced with new materials especially found on the main roof and the additional roof on stairway area. The current condition of this monastery is maintained by the monks. (See fig 3.23 – 3.24)

3.3.4. Kyauk Sa-Yon Kyaung, Shin-Pin-Sar-Gyo Monastic Compound

This monastery is towards the rear or western entrance of Shin-Pyin-Saw-Gyo monastic complex, founded in 1888. It is resembled like a Burmese house of the colonial era. This has also some intervention on the ground façade with fences for the prevention of animals and theft. It is quite far from Sa-Le city and the whole compound is constructed with pagoda, wooden monasteries, ordination hall and rest shelters for the pilgrims or in case of flood victims from nearby regions. (See fig 3.25 – 3.26)

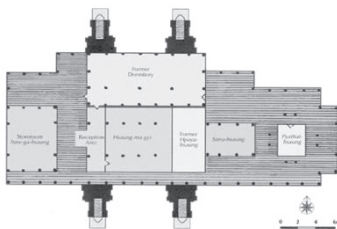


Fig.3.18. Plan of Yoke-Sone Kyaung^{*8}



Fig.3.19. Yoke-Sone Kyaung^{*4}



Fig.3.20. Yoke-Sone Kyaung^{*4}

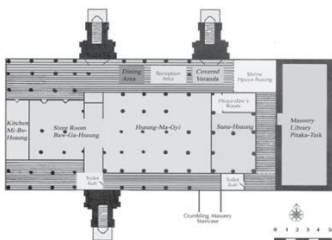


Fig.3.21. Plan of Lei-Tha Kyaung^{*8}



Fig.3.22. Lei-Tha Kyaung^{*4}



Fig.3.23. Mahar-Gandawun Kyaung^{*4}



Fig.3.24. Original Brick Stairs of Mahar-Gandawun Kyaung^{*4}

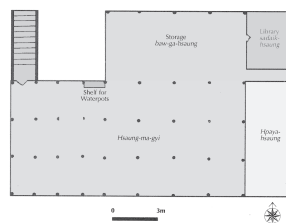


Fig.3.25. Plan of Kyauk Sa-Yon Kyaung^{*8}



Fig.3.26. Kyauk Sa-Yon Kyaung^{*8}

3.3.5. Thein Kyaung, Shin-Pin-Sar-Gyo Monastic Compound

This monastery in Shin-Pin-Sar-Gyo large monastic compound is located about 16km to the south of Sa-Le city. The tradition asserts that the first monastery there was founded in 1338 during the early Ava period and other buildings have been added from time to time. However, the current buildings are dating back from 1858. The compound has also numerous rest houses to accommodate for visiting pilgrims and in the seasonal flooding period, these are like refugee camp for the local people from neighboring villages. This monastic complex can be found pagoda, wooden monasteries, ordination hall and rest shelters for the pilgrims or in case of flood victims from nearby regions. (See fig 3.27 – 3.28)

3.4. Inle-Lake and Nyaung Shwe

The following monasteries are extricable tied to conservation's primary objective in Inle-Lake and Nyaung Shwe regions in Shan State. Kyaung means monastery in Myanmar terms.



Fig.3.27. Thein Kyaung*⁴



Fig.3.28. Thein Kyaung*⁴

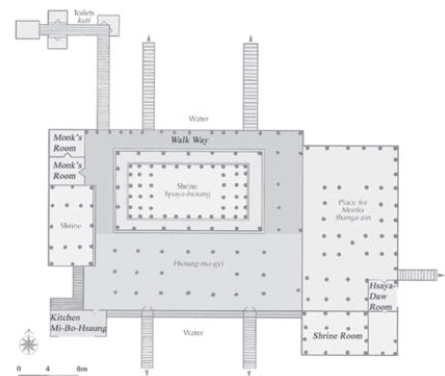


Fig.3.29. Plan of Nga-Phe-Chaung Kyaung*⁸



Fig.3.30. Nga-Phe-Chaung Kyaung*⁴



Fig.3.31. Kyaung-Ni Kyaung*⁸

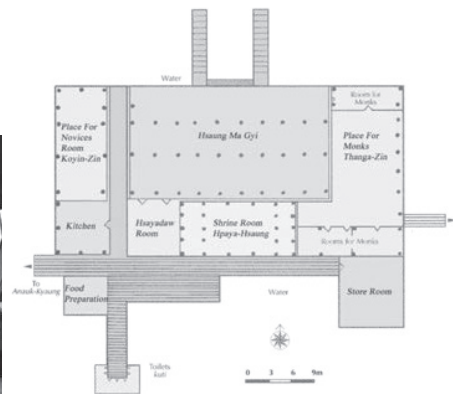


Fig.3.32. Plan of Kyaung-Ni Kyaung*⁴

3.4.1. Nga-Phe-Chaung Kyaung

This large spacious Nga-Phe-Chaung Kyaung is also known as jumping cat monastery was built around 1843 from village donations in Ywa-ma, In-Le Lake. The vicinities of this monastery are bordered by the lake and maintained by the local people and the monks. It is necessary to consider the humidity and moisture to the structure because it is constructed in the lake. In Shan states, the monasteries are slightly difference from Burmese culture according to Shan traditional style of their ethnic and regional characteristics. (See fig 3.29 – 3.30)

3.4.2. Kyaung-Ni Kyaung

Kyaung-Ni Kyaung is constructed in 1846 and donated with the help of local villagers. In Shan monasteries, the monastic ornamentation is simple and less. It is constructed in the lake and there is necessary for careful conservation approaches for restoration of Shan monasteries. Furthermore, the current condition is regularly maintained by the monks and local villagers but there is less knowledge of conservation plan for the restoration of original structure. (See fig 3.31 – 3.32)

3.4.3. Bago Kyaung

This edifice Bago Kyaung in In-Le lake has long supported a monastic building built by public donations in 1973. But the monk and the local people maintained the original style of the basic layout remained unchanged. Therefore, this giant wooden two-story monastery is very precious for Shan people and they believe with their ethnic and culture for future persistence. The functional composition of Shan monastery is mainly employed for the main hall especially for the teaching for the novices and spacious expression. (See fig 3.33 – 3.34)

3.4.4. A-Nauk-Shwe Kyaung

This monastery is similar in plan to Kyaung-Ni Kyaung built in the 1940s from public donations. The current condition is very new building because most of them are more than conservative intervention such as modern color and decorative elements. (See fig 3.35 – 3.36)

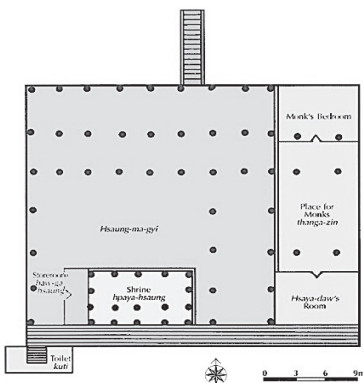


Fig.3.33. Plan of Bago Kyaung*8



Fig.3.34. Bago Kyaung*4

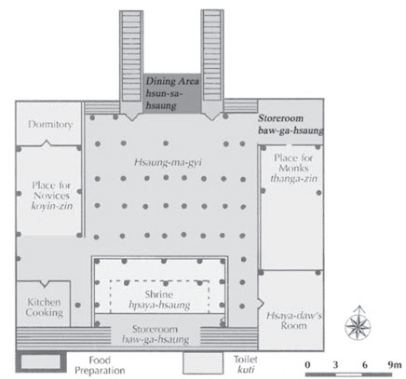


Fig.3.35. Plan of A-Nauk Shwe Kyaung*8



Fig.3.36. A-Nauk Shwe Kyaung*4



Fig.3.37. Plan of Pahtama Taik*16



Fig.3.38. Pahtama Taik*4



Fig.3.39. Pahtama Taik*4

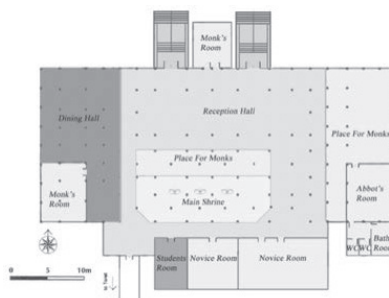


Fig.3.40. Plan of Thar-Lay-Taung Kyaung*16



Fig.3.41. Thar-Lay-Taung Kyaung*4

3.4.5. Pahtama Taik

Also called 'first monastery' located in Ywa-ma village, the special architectural interest is colonial style covered verandahs and telescopic roofing different from other monasteries. The monastery built in 1846 by public donations and there has been occupied by the monks in current conditions. (See fig 3.37 – 3.39)

3.4.6. Thar-Lay-Taung Kyaung

This ancient Thar-Lay-Taung Kyaung is located in In-Le Lake. It was built in 1832. The monastic characteristics is similar to the Konbaung monastic characteristics in central region of Myanmar. The conservation plan has not well developed yet but regularly checked and maintained the deterioration parts of the structure with the help of local villagers and public donations. This monastery is now maintained by the monk (See fig 3.40 – 3.41)

3.4.7. Bein-Daw Kyaung

It is situated in Ywa-Ma village in In-Le lake. It was donated by U Toe Lone, a wealthy Teak trader, in 1925 AD. This is the only two-storied monastery built on stilt among the samples. It is said to be built by the builders from Lower Myanmar. The construction techniques and the use of materials show this monastery as a modernized building among the others built in the same period. Some alterations such as replacing wire netting with glass panels in the windows on the roof neck to prevent from bailing rain water and addition of two entrance brick staircases with multi-tiered roofs can be seen. The monastery is well maintained by the monks and it is very traditional Shan style monastery.¹⁰ (See fig 3.42 – 3.43)

3.4.8. Myay-Ni-Gone Kyaung

This monastery is located in the Myay-Ni-Gone village on In-Le lake which was built in 1851 AD. It was donated by local people of this period. At the present, the monastery is sincerely guarded by the villagers for its considerable number of antique Buddha images. In order to maintain the original superstructure of the old building, the floor was lowered approximately one meter below. No evidence of original building except the Buddha hall is left. The very new extended shrine was built in 2000 AD.¹⁰ (See fig 3.44)

3.4.9. Nyaung-Oak Kyaung

This monastery is located in Inn-dein village on the southern bank of Bilu Chaung Creek. It is situated beside the covered walkway which leads to the famous Shwe Innsein Pagoda group of Inle lake. Facing towards Bilu Chaung Creek, it is an old monastery of which the construction time and the donor are not clearly known. It is said to be constructed long before the Japanese Occupation period. However, according to the built evidences, it is taken as the earliest built monastery in Southern Shan states.¹⁰ (See fig 3.45)

3.4.10. Shwe Kyaung

Shwe Kyaung, with the meaning of golden monastery is located in Ywa-Thit included in Ywar Thar village tract on the west of Nyaung-Shwe township. It was constructed in 1924 AD. U Klyana, the first abbot of Shwe Kyaung, supervised the construction with common donations. The original monastery was later extended in 1953 AD. Most parts of the monastery are extensions and only Buddha hall shows the original structure.¹⁰ (See fig 3.46)

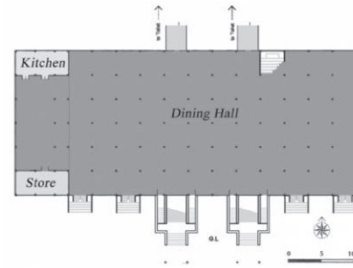


Fig.3.42. Ground Floor Plan of Bein-Daw Kyaung^{*16}

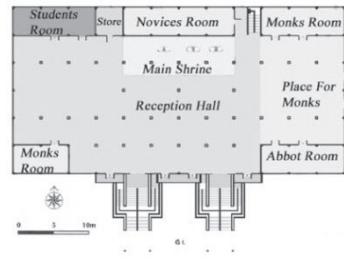


Fig.3.43. First Floor Plan of Bein-Daw Kyaung^{*16}

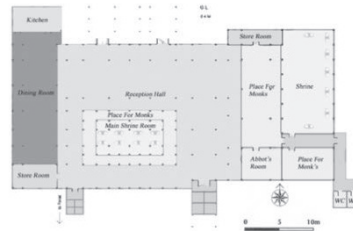


Fig.3.44. Plan of Myay-Ni-Gone Kyaung^{*16}



Fig.3.45. Plan of Nyaung-Oak Kyaung^{*16}

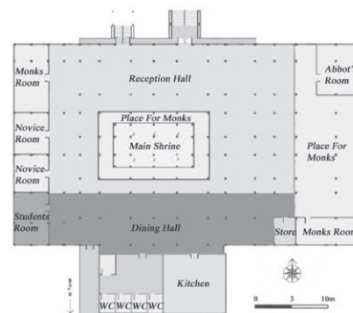


Fig.3.46. Plan of Shwe Kyaung^{*16}

3.4.11. Tate-Nam Kyaung

The monastery is located in one of the busiest area of Nyaung-Shwe township which is the quay side to the villages around Inle Lake. Tate-Nam Kyaung means the monastery at the quay. It was constructed in 1903AD. It was supposed to be common donations since the name of the donors are inscribed on the columns. Only Buddha Hall and Abbot's room show the original structures. The alterations in reception hall vary from the normal way of extensions among the samples. It is maintained by the monks and local villagers.¹⁰ (See fig 3.47)

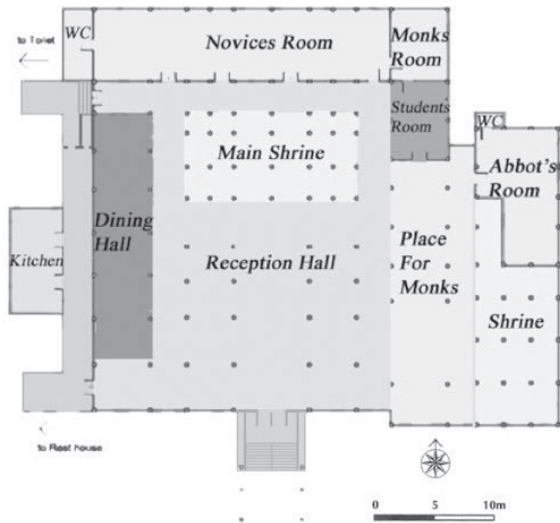


Fig.3.47. Plan of Tate-Nam Kyaung^{*16}

3.4.12. Shwe-Yan-Pyay Kyaung

This famous Shwe-Yan-Pyay Kyaung is located in Nyaung-Shwe. This is the gem of the mixture of Shan-Burmese religious architecture built in 1888 by Nyaung-Shwe Saopha (Shan Kingdom). Not only the exterior but the interior is very ornamented with glass mosaic and architectural interest in style of oval-shaped window in that era as to enhance the dignity and power of donors. Now this is under the protection of Department of Archaeology, Nyaung-Shwe township. (See fig 3.48 – 3.53)

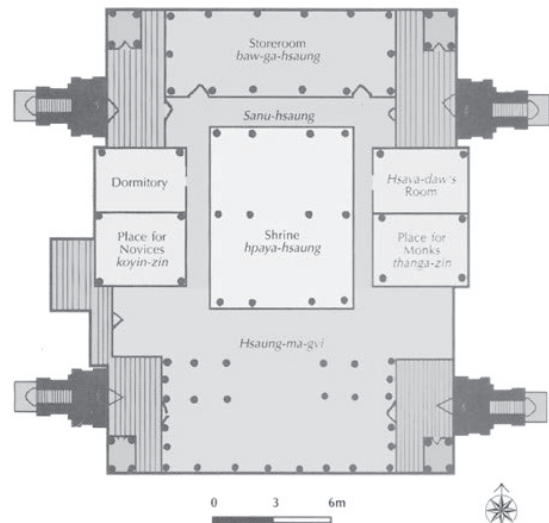


Fig.3.48. Plan of Shwe-Yan-Pyay Kyaung^{*8}

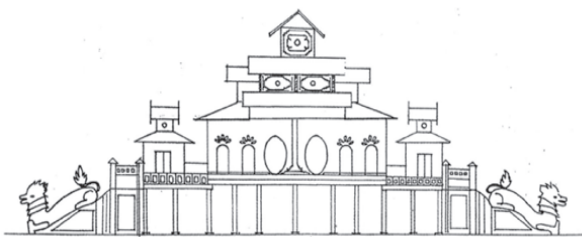


Fig.3.49. South Elevation of Shwe-Yan-Pyay Kyaung^{*17}

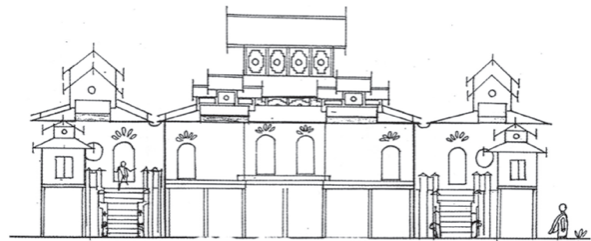


Fig.3.50. East Elevation of Shwe-Yan-Pyay Kyaung^{*17}



Fig.3.51. Shrine Area of Shwe-Yan-Pyay Kyaung^{*4}



Fig.3.52. Shwe-Yan-Pyay Kyaung^{*4}



Fig.3.53. Shwe-Yan-Pyay Kyaung^{*4}

3.5. Mandalay

The following monasteries are extricable tied to conservation's primary objective in Mandalay division. Kyaung means monastery in Myanmar terms.

3.5.1. Shwe-Kyin Kyaung

Shwe-Kyin Kyaung originally founded in 1860 by the King Min-Don located in the northern slopes of Mandalay hill. This monastery has positively intervention on the posts, roof decoration profuse than the original. In 1993, as part of the government renovation program, it was restored as the original glory of monastic elements and well-preserved for the wooden heritage for the long run persistence. (See fig 3.54 – 3.56)

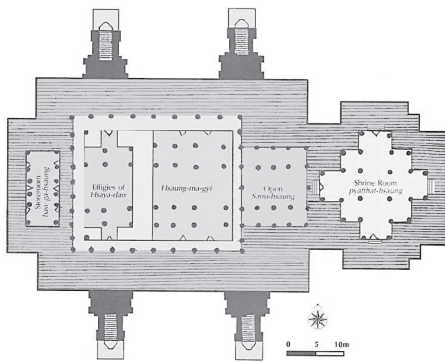


Fig.3.54. Plan of Shwe-Kyin Kyaung*8



Fig.3.55. Shwe-Kyin Kyaung*5



Fig.3.56. Shwe-Kyin Kyaung*5

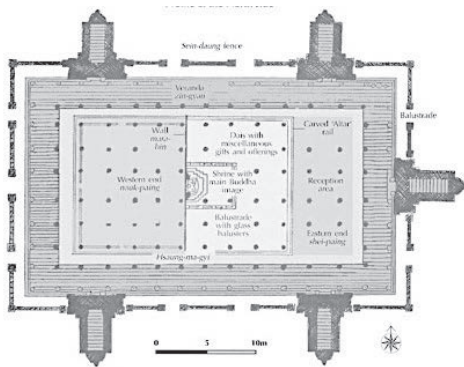


Fig.3.57. Plan of Shwe-Nan-Daw Kyaung*4



Fig.3.58. Interior of Shwe-Nan-Daw Kyaung*8



Fig.3.59. Shwe-Nan-Daw Kyaung*4

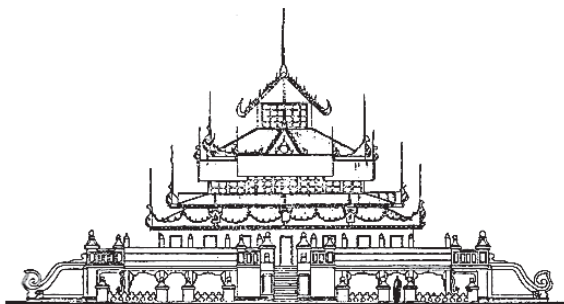


Fig.3.60. East Elevation of Shwe-Nan-Daw Kyaung*11

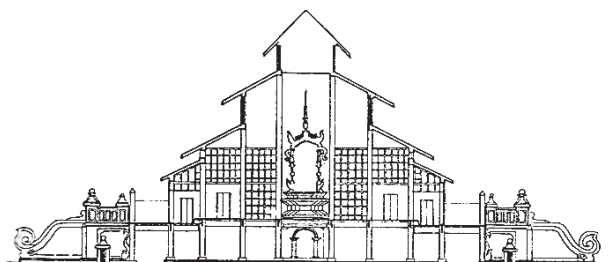


Fig.3.61. Section of Shwe-Nan-Daw Kyaung*11

3.5.2. Shwe-Nan-Daw Kyaung

Shwe-Nan-Daw Kyaung is very famous for its intricacy architectural details and donated by the last Kon-Baung Kingdom of Myanmar in 1878-1883 in Mandalay. It is the most significant of Mandalay's historic buildings, since this monastery remains the sole major survivor of the former wooden Royal Palace built by King Mindon in the mid 19th C. This is also only the remaining structure of original royal palace of Myanmar. This is now national property and it is going to be registered to the UNESCO world heritage after conservation with the aid of world monument fund and Japanese organization for some restoration works. (See fig 3.57 – 3.61)

3.5.3. Taik-Taw Kyaung

Taik-Taw Kyaung built in 1857 and one of the famous and largest monasteries donated by the King. But nowadays the whole structure of this monastery had been already disappeared and only four brick staircases where can see in yellow circle area of figure 3.36 are remained in its original location maintained by the local monks. (See fig 3.62 – 3.64)

3.5.4. Yamethin Kyaung

Yamethin Kyaung was initially built in the 1870s donated by the minor queen, the Governor of Yamethin's daughter. In 1898, the monastery was moved to the current location of Mandalay. Over the years ago, it has been remodeled many times to

meet the colonial appearance of its staircases and telescopic roofing system and its fascia board decoration and the interior of wall partition with glass mosaics. In this monastic compound, there is small business of car workshop running and this may effect to the structure of the monastery in the long run. (See fig 3.65 – 3.67)

3.5.5. Moe Kaung Kyaung

Moe-Kaung Kyaung is located next to Yamethin Kyaung and originally built in 1871-75 by the Governor of Moe-Kaung. It is also similar to the colonial style and externally refurbished in 1998. Now it is maintained by the monks in its original compound. (See fig 3.68 – 3.70)

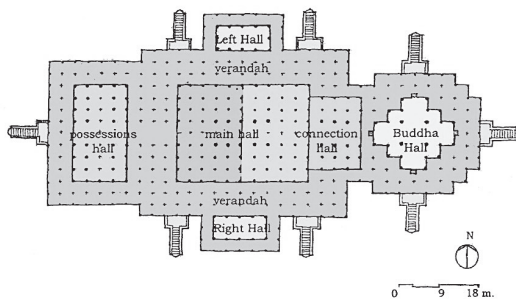


Fig.3.62. Plan of Former Taik-Taw Kyaung*⁸



Fig.3.63. Old Photo of Site Plan of Taik-Taw Kyaung*¹³



Fig.3.64. Remains of Brick Stairs*⁵

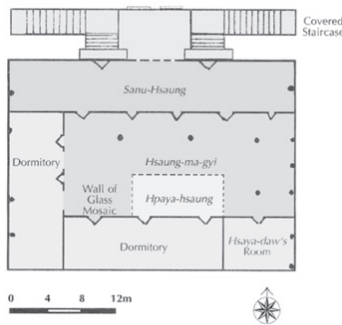


Fig.3.65. Plan of Yamethin Kyaung*⁸

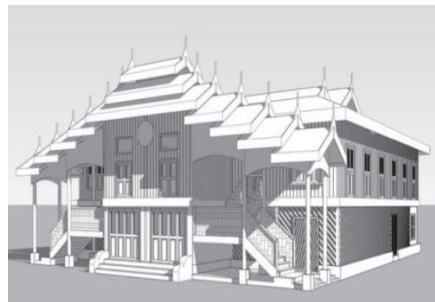


Fig.3.66. Yamethin Kyaung*¹⁴



Fig.3.67. Yamethin Kyaung*⁵

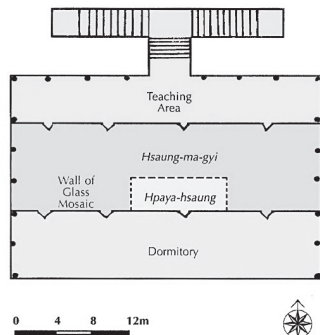


Fig.3.68. Plan of Moe-Kaung Kyaung*⁸

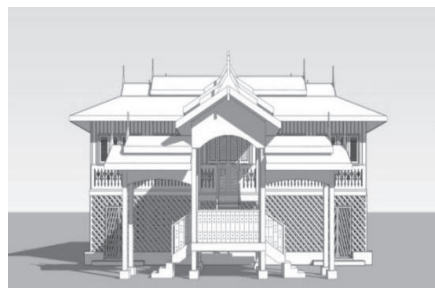


Fig.3.69. Moe-Kaung Kyaung*¹⁴



Fig.3.70. Moe-Kaung Kyaung*⁵

3.5.6. Kye-Myin Kyaung

Kye-Myin Kyaung is close to Moe-Kaung Kyaung built by minor queen of King Mindon and donated in 1875. It is also similar to the colonial style and externally refurbished in 1998. Now it is maintained by the monks in its original compound. (See fig 3.71 – 3.73)

3.5.7. Sa-Daw-Wun Min Kyaung

This is very old monastery built during the reign of King Thibaw (1878-1885). It underwent several relocations before being reassembled at its present site. The current condition of this monastery is totally ruined inside and outside in the percentage 90 out of 100. But there has not yet conservation plan

for it and now it is a neglected and vacant building. (See fig 3.74 – 3.76)

3.5.8. Thin-Gaza Kyaung

Thin-Gaza Kyaung is also one of the famous monastic spired roofing styles located in the Deiwun quarter of Mandalay. It was built in 1861. It is currently used as a monastery and accommodated. However, the structural composition is very vulnerable because of larger and spacious structure with many rooms are very in a perilous state without proper maintenance. In the western end of this monastery is very deflection into one direction and ruined parts need extensive repairs. (See fig 3.77 – 3.79)

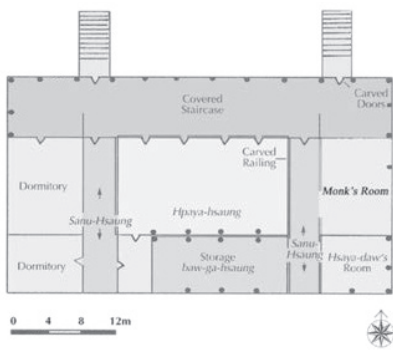


Fig.3.71. Plan of Kye-Myin Kyaung*⁸

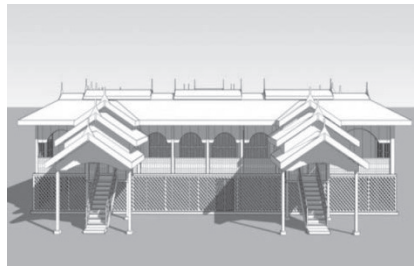


Fig.3.72. Kye-Myin Kyaung*¹⁴



Fig.3.73. Kye-Myin Kyaung*⁵

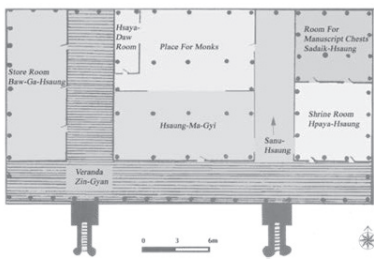


Fig.3.74. Plan of Sa-Daw-Wun Min Kyaung*⁸



Fig.3.75. Deterioration of Thin-Gaza Kyaung*⁵



Fig.3.76. Sa-Daw-Wun Min Kyaung*⁵

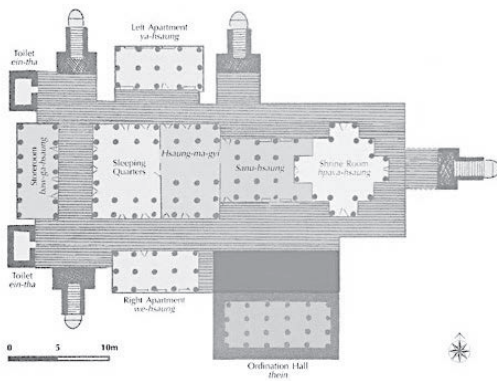


Fig.3.77. Plan of Thin-Gaza Kyaung*⁸



Fig.3.78. Thin-Gaza Kyaung*⁵



Fig.3.79. Thin-Gaza Kyaung*⁵

3.5.9. Shwe-In-Bin Kyaung

Shwe-In-Bin Kyaung is situated in quiet compound of Deiwun quarter in Mandalay. It was donated by Chinese merchant in 1895 and one of the Burmese classical monastery in its elaboration. The special architectural interest is its connecting passage way with the arch-covered wall which cannot be found out in other monasteries from Mandalay. In 1998, the monastery was renovated for tourist attraction. (See fig 3.80 – 3.84)

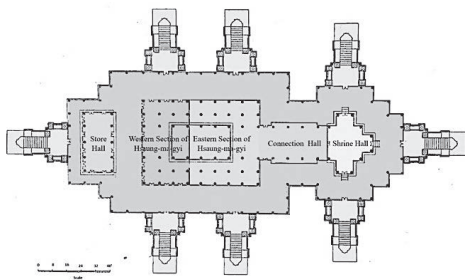


Fig.3.80. Plan of Shwe-In-Bin Kyaung^{*8}



Fig.3.81. Arched Connecting Passage-way of Shwe-In-Bin Kyaung^{*4}



Fig.3.82. Wooden Balustrades of Shwe-In-Bin Kyaung^{*4}

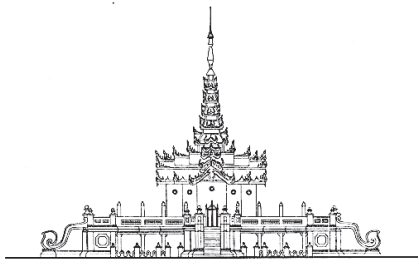


Fig.3.83. East Elevation of Shwe-In-Bin Kyaung^{*11}

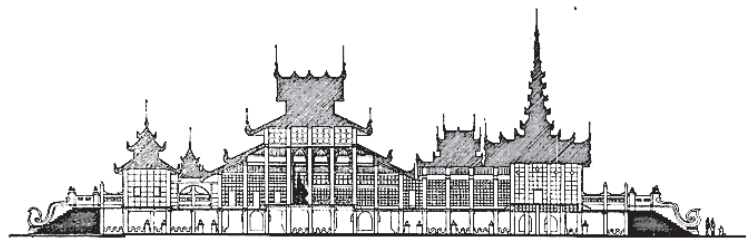


Fig.3.84. Section of Shwe-In-Bin Kyaung^{*11}



Fig.3.85. Old Photo Record of Myadaung Kyaung^{*13}



Fig.3.86. Current Existing Site Plan of Myadaung Kyaung^{*5}



Fig.3.87. Old Photo Record of Myadaung Kyaung^{*13}

3.5.10. Myadaung Kyaung

Myadaung Kyaung, the last wooden monastery of enormous scale built in 1885 donated by King Thibaw. This was also the last monastery built by the monarchs of Myanmar. The current status of this monastery is already disappeared and only remained two brick staircases and in this original location where other new modern monastery are located. (See fig 3.85 – 3.87)

3.5.11. Thakawun Kyaung

Thakawun Kyaung built in 1879 by Kin-Wun-Min-Gyi, a senior minister¹³, is located in the Deiwun quarter of Mandalay. He has visited as a Burmese envoy to Europe during the last years of Kon-Baung dynasty. And he learnt and saw the advances in industry and the architectural achievements of the foreign countries. Therefore, this is one of the rare unique wooden monasteries with inner storeys because the minister intended to design this monastery into the combination style with Italian, French and other European elements for fine Euro-Burmese wood carving. (See fig 3.88 – 3.90)

3.5.12. Bha-Mo Kyaung

Bha-Mo Kyaung is located in the Bodhi-gon quarter of Mandalay. The original was built at Amarapura and then it was

relocated to the current area of Mandalay in 1857. The monastery was repaired in 1993 by the Department of Archaeology. The storeroom was added in the western end later to fulfill the traditional monastic layout and also as per the functional requirement. Now the current status is well-maintained by Bha-Mo Sayadaw Phayagyi (chief monk). (See fig 3.91 – 3.93)

3.5.13. Mahar-Min-Din Kyaung

Mahar-Min-Htin Kyaung was originally constructed in 1852 at Ava. With the changing of the capital, it was relocated to Mandalay donated by the minister during the King Mn-don in 1878. It is also very magnificent monastery and therefore, the conservation plans have yet to be drawn up by the Department of Archaeology, Mandalay for the desirability of preserving this monastery. (See fig 3.94 – 3.96)

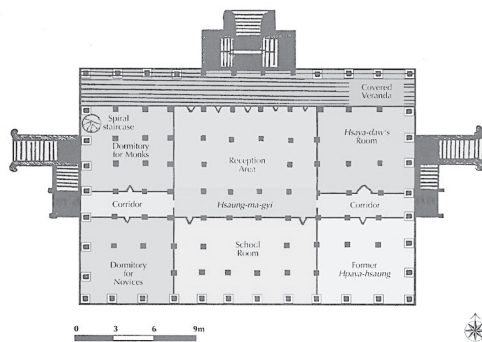


Fig.3.88. Plan of Thakawun Kyaung*⁸



Fig.3.89. Thakawun Kyaung*⁴



Fig.3.90. Thakawun Kyaung*⁴

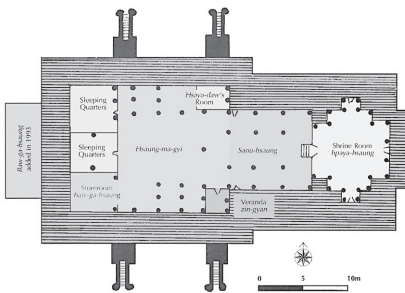


Fig.3.91. Plan of Bha-Mo Kyaung*⁸



Fig.3.92. Bha-Mo Kyaung*⁵



Fig.3.93. Store room of Bha-Mo Kyaung*⁵

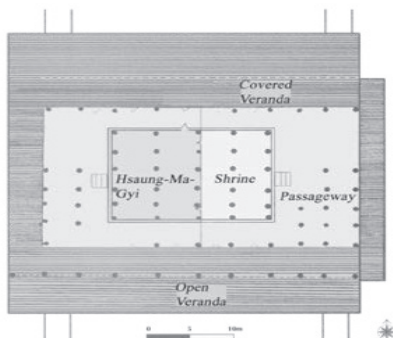


Fig.3.94. Plan of Mahar- Min-Htin Kyaung*⁸



Fig.3.95. Mahar-Min-Htin Kyaung*⁴



Fig.3.96. Mahar-Min-Htin Kyaung*⁴

3.5.14. Ashoka-Yama-Taik, Yadana-Bon-Kyaw Kyaung

Ashoka-Yama-Taik also called Yadana-Bon-Kyaw Kyaung constructed during 1787-1790 with massive monastery type in this era and it is still located in its original location. There can be seen the remaining 10 brick staircase and maintained as the original ruins of these staircases by the monks without any reconstruction. (See fig 3.97 – 3.99)

3.5.15. Pin-Thar Kyaung

Pin-Thar Kyaung was built during the reign of King Thi-baw and the original function of this monastery was the Yadanarbon Style resident of Prince Pin-Thar. Therefore, after donated by the prince, it has been accommodated by the monks

as the monastery and also maintained by the monks. (See fig 3.100 – 3.101)

3.5.16. Medaw Kyaung: Queen Mother’s Monastery

The Queen Mother’s monastery which was one of the impressive wooden monasteries, built in 1842 donated by the King’s step-mother. The monastery was known for its immense beauty which won the attention, admiration and attribution of Myanmar traditional art and craft advancement. Unfortunately, it was bombed during the second world war and now it can only see the existing great walls of entrance brick gate of this monastery and other parts were already burnt out by the fire. (See fig 3.102 – 3.104)

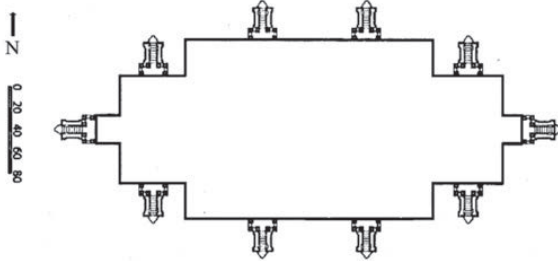


Fig.3.97. Plan of Remaining 10 Brick Staircases of Ashoka-Yama-Taik, Yadana-Bon-Kyaw Kyaung^{*5}



Fig.3.98. Current Existing Site Plan of Ashoka-Yama-Taik^{*5}

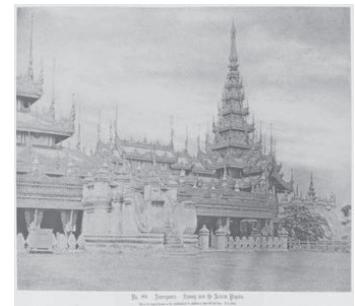


Fig.3.99. Old Photo Record of Ashoka-Yama-Taik^{*12}

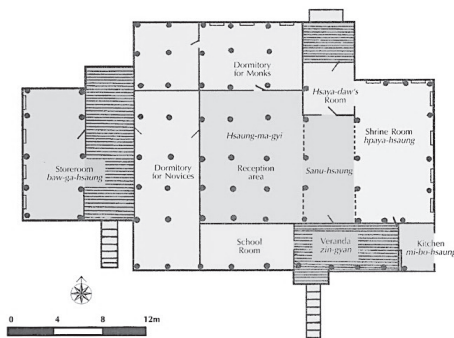


Fig.3.100. Plan of Pin-Thar Kyaung^{*8}

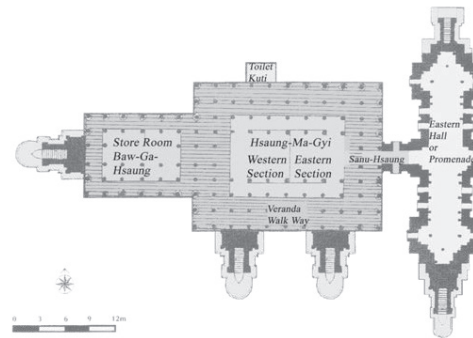


Fig.3.102. Former Plan of Medaw Kyaung: Queen Mother’s Monastery^{*15}



Fig.3.101. Pin-Thar Kyaung^{*5}

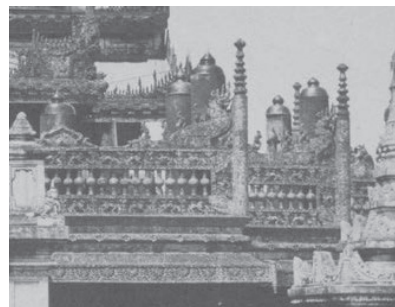


Fig.3.103. Old Photo Record of Medaw Kyaung: Queen Mother’s Monastery^{*13}



Fig.3.104. Existing Brick Gate of Medaw Kyaung: Queen Mother’s Monastery^{*5}

3.5.17. Thameedaw Kyaung: The Princess Monastery

The Princess monastery built in 1842 and adorned one of the finest wooden monasteries of Burma. Around the original location of its monastery, it has newly constructed by modern monastery and Nun school as the interventions. Therefore, the existing entrance walls and brick staircases are remained. (See fig 3.105 – 3.106)

3.5.18. Pyi-Min-Thar Kyaung

Pyi-Min-Thar Kyaung is located near Tagun-Taing viallge currently occupies the original site of the San-Kyaung taik complex. The present monastery is combination of two monasteries; one of which was built prior to 1846 by Pyi-Min-Thar (the Prince) and the other part built by the uncle of the prince.

Traces of the original wood-carving are still evident along the badly weathered balustrade and the well preserved previously. In 1988, the monastery was repaired especially the verandah and maintained under the Mandalay Department of Archaeology. (See fig 3.107 – 3.108)

3.5.19. Innwa Bagaya Kyaung

Bagaya monastery was founded during the reign of King Min Hkaung (1401-1422) in Ava dynasty. It was rebuilt in 1698 by the King Min-Ye-Kyaw-Htin. It is ornamentally simple and very authentic Ava monastery. Then, it was refurbished again in 1991 by the Mandalay Archaeology Department and restored as the museum of functional adaptive reuse. (See fig 3.109 – 3.112)

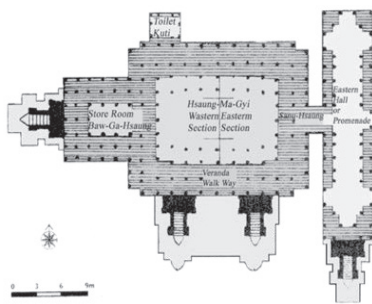


Fig.3.105. Former Plan of Thameedaw Kyaung: Princess Monastery*15



Fig.3.106. Old Photo Record of Thameedaw Kyaung: The Princess Monastery*13



Fig.3.107. Pyi-Min-Thar Kyaung*5

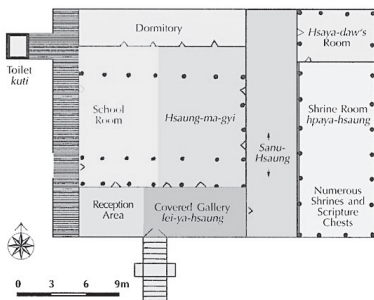


Fig.3.108. Plan of Pyi-Min-Thar Kyaung*8

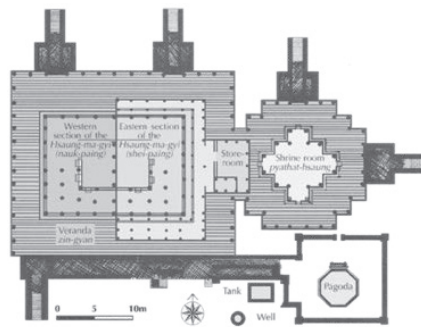


Fig.3.109. Plan of Bagaya Kyaung (Innwa)*8



Fig.3.110. Bagaya Kyaung (Innwa)*5

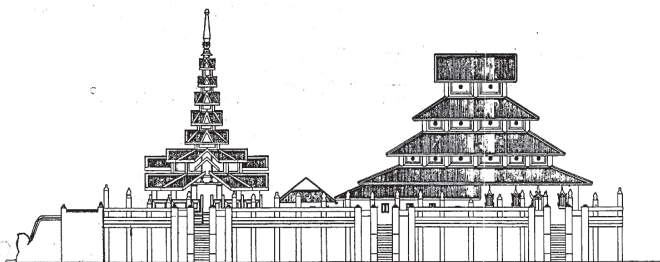


Fig.3.111. North Elevation of Bagaya Kyaung (Innwa)*11

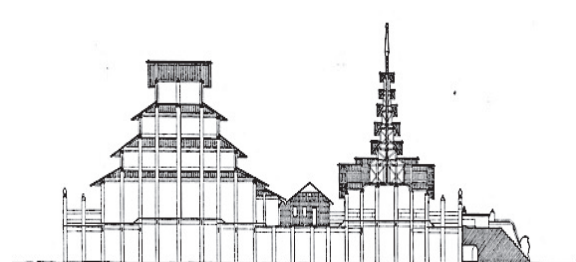


Fig.3.112. Section of Bagaya Kyaung (Innwa)*11

3.5.20. Ariya-Wun-Tha Kyaung

Ariya-Wun-Tha Kyaung which is also called Sagaing Yoke-Sone Kyaung located on the Sagaing hills individually and in a very quiet and peaceful place. This little gem of monastic architecture was conceived as a place of meditation for a single monk. The original component parts are during the late Ava period and dismantled structure from the capital to the hills. It was refurbished in late 1970s by the Department of Archaeology and has been settled by a single monk and open to the public visit. (See fig 3.113 – 3.118)

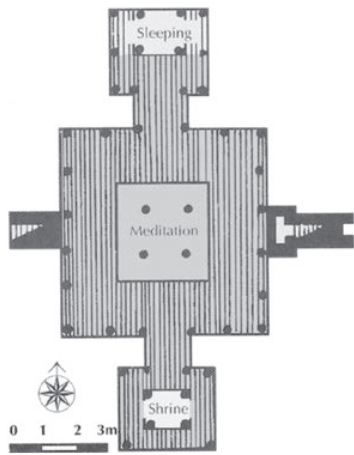


Fig.3.113. Plan of Ariya-Wun-Tha Kyaung*⁸



Fig.3.114. Shrine Room of Ariya-Wun-Tha Kyaung*⁵



Fig.3.115. Ornamented Door of Ariya-Wun-Tha Kyaung*⁵



Fig.3.116. Ariya-Wun-Tha Kyaung*⁵



Fig.3.117. Ariya-Wun-Tha Kyaung's Meditation Room*⁵



Fig.3.118. Ariya-Wun-Tha Kyaung's Balustrades Ornamentation*⁵



Fig.3.119. Current Existing Site Plan of Bagaya Kyaung*¹²



Fig.3.120. Bagaya Kyaung (Amarapura)*⁵



Fig.3.121. Bagaya Kyaung (Amarapura)*⁵

3.5.21. Amarapura Bagaya Kyaung

The original structure of Amarapura Bagaya Kyaung was constructed in 1782-83 by King Bo-Daw-Hpaya located in Amarapura. This monastery was fired in two times; one in 1821 and again in 1866. Therefore, this new structure of Amarapura Bagaya monastery was completely rebuilt again with using reinforced concrete for the whole building and now it is not used by the monks as the function of the monastery. It is preserved in the adaptive reuse as the museum for public pilgrims. (See fig 3.119 – 3.121)

3.6. Hsipaw

The following monasteries are extricable tied to conservation's primary objective in Hsipaw area in Shan State. Kyaung means monastery in Myanmar terms.

3.6.1. Bo-Daw Kyaung

This monastery was donated by Saopha (Shan Kingdom) in 1891 at Pangthein-Taung quarter of Hsipaw. The main monastery building is splendid but only the skeleton structure remained and the wall is repaired with brick. It is maintained by the local villagers. (See fig 3.122 – 3.124)

3.6.2. Maha-Nanda-Kantha Kyaung

Maha-Nanda-Kantha Kyaung is located in the new village of Hsipaw donated by Saopha at 1848. Its distinctive features

is long corridor way and covered with spired roof. This type of monastery did not remain in other areas of Northern Shan state. It is under the protection of the Department of Archaeology. (See fig 3.125 – 3.127)

3.6.3. Maddayar-Shwe Kyaung

Maddayar-Shwe Kyaung is also the ancient monastery in Hsipaw and the interview with the older people, this was also donated by Saopha (Shan Kingdom). This monastery was built in 1863 located in the new village of Hsipaw. In current, it is maintained by the chief monk and local people. The structural conditions of this monastery is in good conditions and it should be regularly maintained and checked with proper maintenance plan. (See fig 3.128 – 3.130)

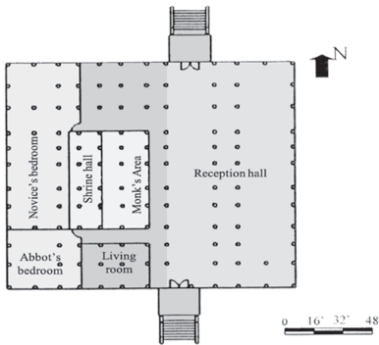


Fig.3.122. Plan of Bo-Daw Kyaung^{*18}

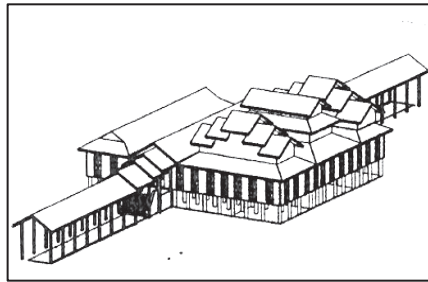


Fig.3.123. Bo-Daw Kyaung^{*18}



Fig.3.124. Bo-Daw Kyaung^{*5}

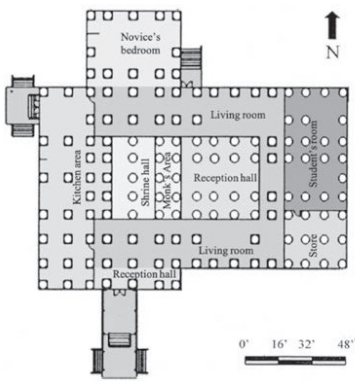


Fig.3.125. Plan of Maha-Nanda-Kantha Kyaung^{*18}

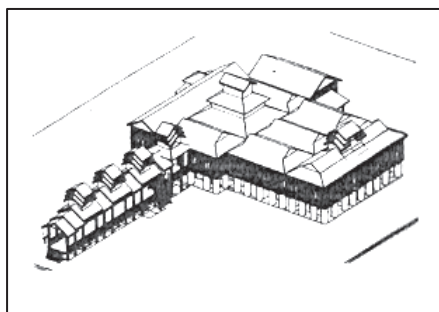


Fig.3.126. Maha-Nanda-Kantha Kyaung^{*18}



Fig.3.127. Maha-Nanda Kantha Kyaung^{*18}

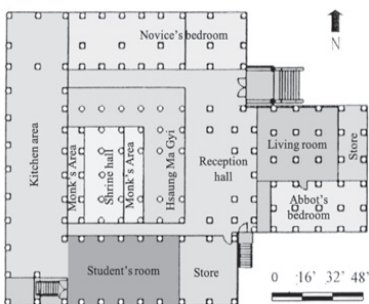


Fig.3.128. Plan of Maddayar-Shwe Kyaung^{*18}

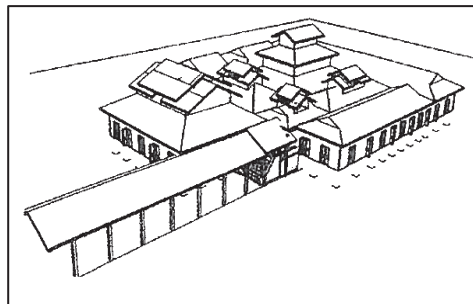


Fig.3.129. Maddayar-Shwe Kyaung^{*18}



Fig.3.130. Maddayar-Shwe Kyaung^{*5}

3.6.4. Kyin-Thee Kyaung

Kyin-Thee Kyaung is the oldest wooden monastery in Hsipaw and also the only donated by the Saopha (Shan Kingdom) and Myanmar King in 1774 as ancient monastery in Shan state. It consists of many Shan ancient architectural features which are quite different to the monasteries in central regions of Myanmar. (See fig 3.131 – 3.133)

3.6.5. Yay-Haw Kyaung

Yay-Haw Kyaung is located in Pangthein quarter of Hsipaw township. It was donated by Saopha (the hereditary ruler of a Shan state of Burma) Saung Kyar Khaing at 1893 AD. It is maintained by the local people but all the walls are repaired with bricks and not the original wall. Moreover, not the main monastery but the monastic compound could be found that many colonial buildings were built at the Saopha time (Shan Kingdom time). Now it is occupied by the local monks and maintained the original condition of traditional Shan monastery. (See fig 3.134 – 3.135)

3.7. Monywa

The following monasteries are extricable tied to conservation's primary objective in Monywa district. Kyaung means monastery in Myanmar terms.

3.7.1. Sagumaw Kyaung

Sagumaw Kyaung is located in Monywa, Le-zin village and built in 1936 in the late colonial period. The structural condition of this monastery is very weak in current conditions and it may be no longer existed for 4 or 5 years if the conservation management plan would not be considered for it.

Therefore, the features of the monastery is a combination style of traditional Burmese architecture and colonial decorative masonry stairs style which is very rare to find this original little gem of monastic architecture. Therefore, this style of wooden monastery in the central region of Myanmar would be managed with systematic conservation plan not only for the identity of this region but also the unique combination of traditional and colonial characteristics. (See fig 3.136 – 3.139)

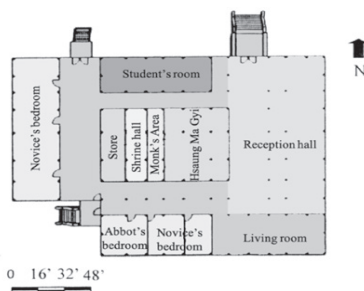


Fig.3.131. Plan of Kyin-Thee Kyaung^{*18}

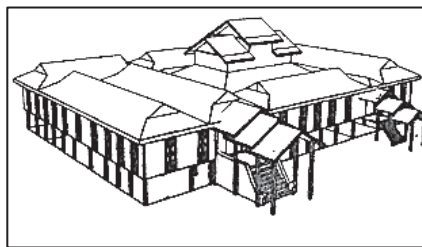


Fig.3.132. Kyin-Thee Kyaung^{*18}



Fig.3.133. Kyin-Thee Kyaung^{*18}

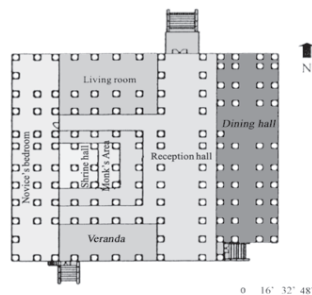


Fig.3.134. Plan of Yayhaw Kyaung^{*18}

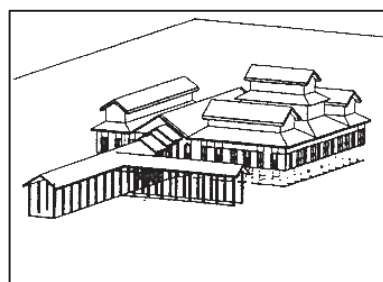


Fig.3.135. Yayhaw Kyaung^{*18}

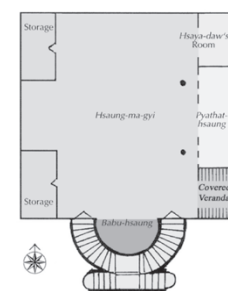


Fig.3.136. Plan of Sagumaw Kyaung^{*8}

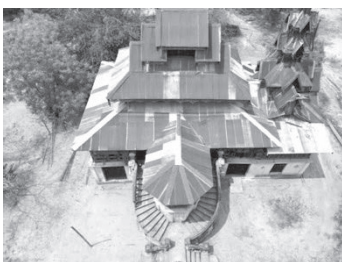


Fig.3.137. Sagumaw Kyaung^{*5}



Fig.3.138. Sagumaw Kyaung^{*5}

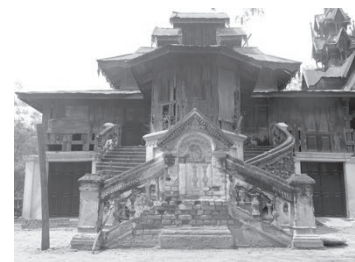


Fig.3.139. Front View of Sagumaw Kyaung^{*5}

3.7.2. Taing-Tayar Kyaung

Taing-Tayar Kyaung is located in Monywa, Le-zin village and constructed in 1896 using local carpenters, masons, blacksmiths and goldsmiths. The monastery is famous for its architectural esthetics of the seven-tiered pythat roofing and it has not been occupied since the mid-1960s and the structural condition is very vulnerable especially in the connection of the roof, interior of the flooring and other elements. (See fig 3.140 – 3.142)

3.7.3. Mahar-Zawtika-Yama Taik

This monastery is also called Thu-Dhamma monastery was founded in 1894 located in Khin-Mon village, Monywa. This is very traditional and central Burmese monastic architectural

composition in a larger complex of monastic buildings. This has been found that some intervention in the additions of new paintings and the modern elements such as installation electronic equipment which may be dangerous in case of fire. (See fig 3.143 – 3.144)

3.7.4. Min-Ye Kyaung

Min-Ye Kyaung is located in A-Myint village which is far 28km from Monywa district. This monastery was donated by the King Swar-Saw-Ke in 1375 over 644 years old wooden building. This very old monastery maintained by the monks that has been found that refurbished many times and the original of staircases and the roofing parts are the characteristics of Innwa era. (See fig 3.145 – 3.148)

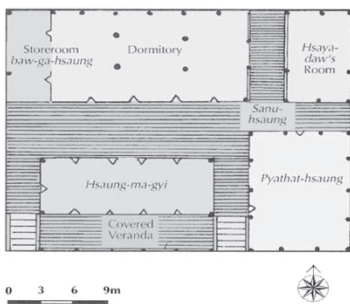


Fig.3.140. Plan of Taing-Tayar Kyaung^{*8}



Fig.3.141. Taing-Tayar Kyaung^{*5}



Fig.3.142. Interior of Taing-Tayar Kyaung^{*5}

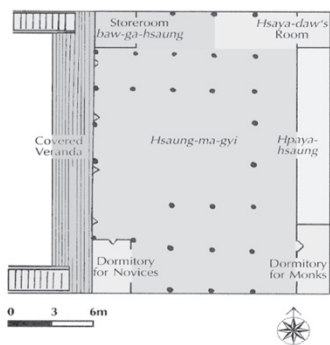


Fig.3.143. Plan of Mahar-Zawtika-Yama Taik^{*8}



Fig.3.144. Mahar-Zawtika-Yama Taik^{*5}



Fig.3.145. Top View of Min-Ye Kyaung^{*5}



Fig.3.146. Top View of Min-Ye Kyaung^{*5}



Fig.3.147. Min-Ye Kyaung^{*5}



Fig.3.148. Min-Ye Kyaung^{*5}

3.7.5. Bon-Pyan Kyaung

Bon-Pyan Kyaung is also near to the Min-Ye Kyaung and the monastic characteristics is similar composition but smaller one. It is quite far from Monywa located in Min-Ye village. It was also donated by King Min-Lat-War in 1858 of Kon-Baung era. There has also found that the complex of some detrimental features needed for the conservation definitely as the very old wooden monastery.

The structural condition is deteriorated by neglect or old age of the monastery. But in this compound, there has other new monasteries and the original main monastery should be preserved very systematically for such this of linear composition of Kon-baung wooden monastery and this edifice is very rare to find in that area too. Now it is looked after by the local monks. (See fig 3.149 – 3.151)



Fig.3.149. Bon-Pyan Kyaung*5



Fig.3.150. Ruins of Bon-Pyan Kyaung*5



Fig.3.151. Interior of Bon-Pyan Kyaung*5

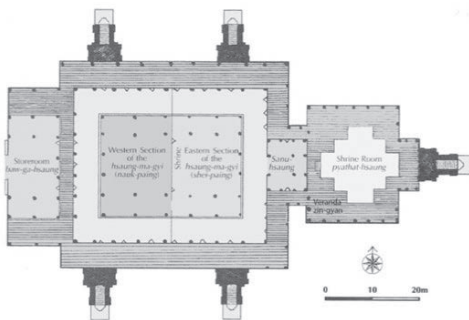


Fig.3.152. Plan of Pakhangyi Kyaung*8



Fig.3.153. Roof Spire of Pakhangyi Kyaung*5

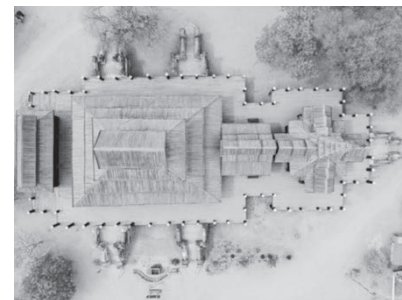


Fig.3.154. Bird's Eye View of Pakhangyi Kyaung*5



Fig.3.155. Pakhangyi Kyaung*5



Fig.3.156. Pakhangyi Kyaung*5



Fig.3.157. Bird's Eye View of Pakhangyi Kyaung*5

3.8. Yesagyo

The following monasteries are extricable tied to conservation's primary objective in Yesagyo area. Kyaung means monastery in Myanmar terms.

3.8.1. Pakhangyi Kyaung

Pakhangyi Kyaung is located 27km north of Pakkoku district built in 1886. For the reason of concerning with the impressive conservation, it has been repaired and restored to some of its former glory using the original materials as possible. Even though the former roof ornaments have not survived but this is very rare monastery which is using the original material of roofing in a very advantage conditions of well-preservation. In 1996, the government submitted the monastery, along with other exemplars from the Kon-Baung dynasty for inclusion into the World Heritage List.¹⁴ (See fig 3.152 – 3.157)

3.8.2. Pakhanng Kyaung

Pakhanng Kyaung is ten kilometers south of Yesagyo township, Pakkoku district. There has only the remains of a formerly wooden monastery constructed in 1871. At present, the remains of masonry mango-bud staircases and the existing foundation wooden pillars has left. However, it is displayed as the existing of ruined conditions to know the traditional wooden construction techniques for conservation of other monasterions. This monastery which was taken and started to preserve this existing in 1996-1967. The monastic features are quite similar to the Konbaung layout and some original carvings of this monastery is preserved in a nearby masonry library.¹⁴ (See fig 3.158 – 3.162)

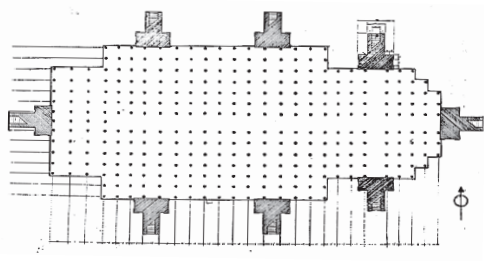


Fig.3.158. Plan of Pakhanng Kyaung¹⁹



Fig.3.159. Existing Conditions of Pakhanng Kyaung²⁵

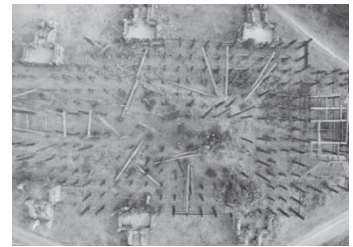


Fig.3.160. Bird's Eye View of Pakhanng Kyaung²⁵



Fig.3.161. Existing Sturcture of Pakhanng Kyaung²⁵



Fig.3.162. Existing Brick Stairs of Pakhanng Kyaung²⁵



Fig.3.163. Top view of Taw-Way-Kan Kyaung Building 1²⁵



Fig.3.164. Taw-Way-Kan Kyaung Building 1²⁵



Fig.3.165. Taw-Way-Kan Kyaung Building 1²⁵



Fig.3.166. Taw-Way-Kan Kyaung Building 2²⁵

3.9. Pakkoku

The following monasteries are extricable tied to conservation's primary objective in Pakkoku district. Kyaung means monastery in Myanmar terms.

3.9.1. Taw-Way-Kan Kyaung

This quiet and old monastic compound is located in Pakkoku, Myaing township. The monastery was donated by the King in late Bagan period. There has two wooden monasteries; the building 1 is well maintained and reside in it. However, the building 2 is vacant condition and some parts are previously ruined such as the brick staircase and some wooden pillar deterioration. Moreover, it is protected under the ministry of religious affairs and culture. (See fig 3.163 – 3.166)

3.9.2. Ohn-Don-Bin-Shwe Kyaung

Ohn-Don-Bin-Shwe Kyaung is one of the good examples of wooden monasteries from Myanmar. Originally it was one of fifteen apartments given by various donors which comprised the impressive Marorama Kyaung Taik (Monastery group). It built in 1738 and the only remaining apartment nowadays and probably the earliest surviving Burmese wooden monastic building in existence maintained by the Department of Archaeology with the help of chief monk and the local villagers. (See fig 3.167 – 3.170)

3.9.3. Atula-Mingalar-Thiri Kyaung

In this monastic compound, there has two structures; one building is main monastery and another one is storage. It is sit-

uated in Pauk township, Magway division and also old monastic features over 100 years old. But some parts especially in the facades have found new intervention with modern color and materials using in the original structure of main building. (See fig 3.171 – 3.172)

3.9.4. Khan-Taw-Taung Kyaung

Khan-Taw-Taung Kyaung also called Bagan monastery, located in Pakkoku. The construction period of this monastery is probably in the early 19th century according to the interview with the chief monk. In this monastery, there has also the historical documents of inscriptions. But the monastery is often suffered by the seasonal flood every 3 or 4 years in rainy season. (See fig 3.173 – 3.175)

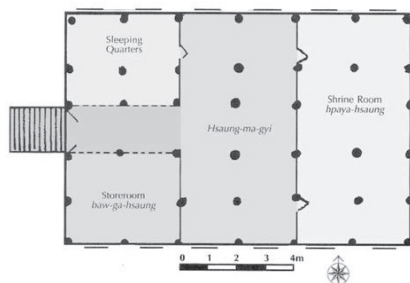


Fig.3.167. Plan of Ohn-Don-Bin-Shwe Kyaung*⁸



Fig.3.168. Ohn-Don-Bin-Shwe Kyaung*⁵



Fig.3.169. Interior Furniture of Ohn-Don-Bin-Shwe Kyaung*⁵

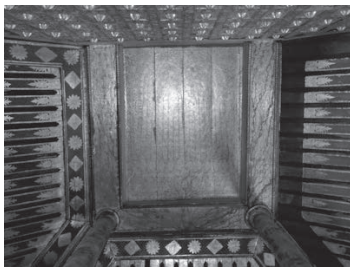


Fig.3.170. Gilded Ceiling of Ohn-Don-Bin-Shwe Kyaung*⁵



Fig.3.171. Atula-Mingalar-Thiri Kyaung*⁵



Fig.3.172. Atula-Mingalar-Thiri Kyaung's Storage*⁵



Fig.3.173. Khan-Taw-Taung Kyaung*⁵



Fig.3.174. Khan-Taw-Taung Kyaung*⁵



Fig.3.175. Vulnerable Conditions in 2nd Floor of Khan-Taw-Taung Kyaung*⁵

3.9.5. A-Neint Kyaung

The former 19th C A-Neint Kyaung wooden monastery located in south-west of Pakkoku. It succumbed to fire in 1989 and there are no plans to rebuild the monastery. Currently in that area, the remains of masonry library occupying in the north-east corner in the current existing site plan of yellow circle area. (See fig 3.176 – 3.178)

3.9.6. Yoke-Sone Kyaung

The early 19th century of former Yoke-Sone Kyaung was one of the famous of Pakkoku's wooden monastery but fire and neglect have destroyed many of these formerly splendid edifices. It was consumed by a fire in 1957 and replaced by a masonry building in 1958. Yoke-Sone means the monastery orna-

mented with lots of sculptures but after it was fired, these sculptures have been installed in another new monastery nearby this area. (See fig 3.179 – 3.180)

3.9.7. Mandalay Taik

Mandalay Taik is located Pakkoku on the west bank of the Irrawaddy river north-east of Bagan. It was founded around 1907 served as the colonial period style. In this compound, there is four-storeyed painted wooden monastery which is also the monumental largest building. It was refurbished and further extended in the 1930s. The current condition is well-maintained by the chief monk and some parts of it need to be checked regularly as an advanced stage of conservation of this magnificent monastic characteristic. (See fig 3.181 – 3.183)

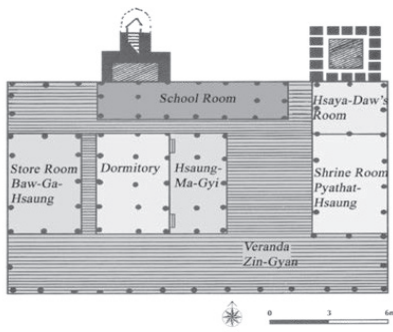


Fig.3.176. Plan of A-Neint Kyaung*⁸



Fig.3.177. Current Existing Site Plan of A-Neint Kyaung*¹²



Fig.3.178. Remains of Masonry Library*⁵

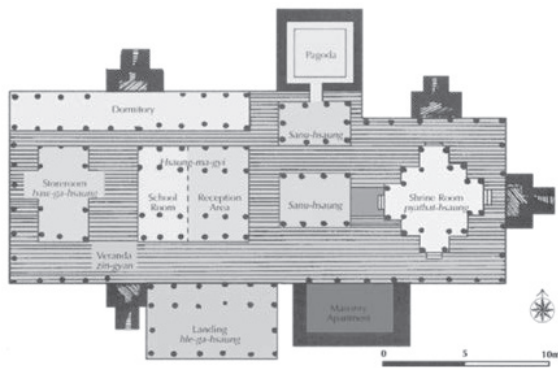


Fig.3.179. Former Plan of Yoke-Sone Kyaung*⁸

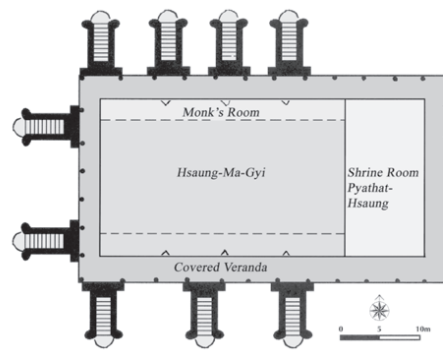


Fig.3.181. Plan of Mandalay Taik*⁸



Fig.3.180. Old Wooden Sculptures from Former Yoke-Sone Kyaung*⁵



Fig.3.182. Mandalay Taik*⁵



Fig.3.183. Mandalay Taik*⁵

3.10. Heritage Value Assessment of Wooden Monasteries in Myanmar

The following heritage values can be significantly found on the wooden monasteries in Myanmar.

(i) Historic Significance Value

The wooden monasteries in Myanmar are representative of the important trend of history. They are lots of historic value influenced and associated in most of the monasteries are related with the history of Burma Kingdom monarchy. The historic significance value is much greater where evidence of the association or event happened at the places.

(ii) Social Significance Value

These heritage wooden monasteries reveal the social standards of the lifestyles of Kingdom era between the standards of the people recognizing by the paintings, sculptures, techniques and styles. Therefore, the social value can be found on particular communities or cultural groups in each monastery depending on the different regions, different society of the ethnic groups, and ranks of the donor of the monastery.

(iii) Cultural Significance value

The cultural significance value of the wooden monasteries links the identity of the culture from the past to present or future generations.¹⁵ Cultural significance is embodied in the monastery itself, its fabric, setting, use, associations, meanings, records, related places and related objects.

(iv) Spiritual Significance Value

Monasteries are religious buildings and it is a very sacred place for Myanmar culture and tradition. In the old times, the monastery had been the educational school. Moreover, the spiritual value assists to identify the old memories of the Kingdom palace and the relative's and the strong roots of colonial era.

(v) Aesthetic Significance Value

The integrity and the authenticity of Myanmar traditional art and architecture demonstrates a high level of traditional art and artistic, creative and craft technical achievement that may be expressed through the design, construction and technical attributes on these monasteries.

(vi) Scientific Significance Value

The wooden monasteries have scientific or research value about important aspects of the past. The related buildings and sites may also be able to address important research questions relating to the site, its history, earlier practices, materials, and/or usage.

4. Key Findings on Main Issues for Creating Conservation Priorities

In this paper, the solution measures for creating conservation priorities are as follows:

4.1. Common cases of damage,

4.2. High risk of fire, and

4.3. SWOC (strength, weakness, opportunities, and challenges) analysis found on the current issues.

There is an essential framework of performing the key findings related to the following factors in these survey areas.

- Highlighting the percentage of traditional heritage wooden monasteries in Myanmar.

- Making physical and conditional assessments as part of the conservation record.

- Finding basic feasible ways of recording for conservation of wooden monasteries within procurable resources.

- Determining the extent of the lack of legal infrastructure supporting heritage conservation due to the presence of a wide range of heritage conservation priorities in Myanmar for other sectors.

- Reviewing these wooden monasteries not only traces back the historical review or understanding of the prevailing cultural heritage infrastructure, but also sheds light on the current status of monastery conservation with practical field surveys, interviews, consultation of previous conservation research, and sketches and drawings.

- Proposing draft approaches for unclear limitations and clarification on development and fundamental stages in reforming the substantial heritage conservation.

- Creating balanced conservation management for these structures should be encouraged to promote sustainable cultural tourism to showcase the nation's prestige.

4.1. Common Cases of Damage Found on Current Conditions of Wooden Monasteries

Currently, there is a variety of conservation approaches to prepare existing wooden monasteries for detrimental conditions. This subsection will discuss the nature or characteristics of damage found in monasteries, especially those found in Mandalay, which has the highest number of wooden monasteries. These monasteries stand to lose their historic significance in the near future in the absence of urgent conservation efforts following the prescribed guidelines. Most cases of damage to features and structures of monasteries mainly exhibit one of the



Fig.4.1. Ruin conditions of Sa-Daw-Wun-Min Monastery*4



Fig.4.2. Ruin conditions of the Interior in Sa-Daw-Wun-Min Monastery*4



Fig.4.3. Ruin conditions of Sa-Daw-Wun-Min Monastery*4



Fig.4.4. Western Part of Thin-gaza Monastery*4



Fig.4.5. Western Part's Passageway Flooring of Thin-gaza Monastery*4

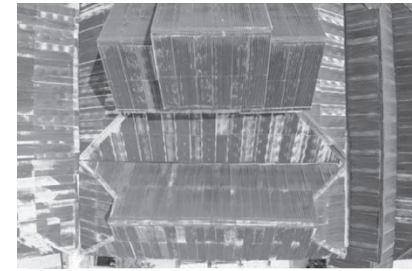


Fig.4.6. Roof Plan of Kyin-Thee Monastery, Hsipaw*5

following conditions: (a) Ruins, (b) Structural weakening, and (c) Roof and drainage problems. Example of monasteries with the above three types of damage are given below.

(a) A case of ruins: Sa-Daw-Wun-Min monastery, Mandalay

About 80% of this wooden monastery in Mandalay is unfortunately in ruins. It is expected to collapse in a year and more. It is assumed that the data collection and conservation efforts should be focused on the issue of ruins as it is the most pressing conservation problem.

(b) A case of structural weakening: Thin-gaza monastery, Mandalay

In cases of structural weakening, the monastic features are still present and it is possible to immediately restore structural stability. However, the whole could be partially restored at the points of structural failure. As seen in figures 4.4 and 4.5, some parts of structurally weakened monasteries have become fragile enough to collapse easily. If such structures are not conserved they could turn into debris, in which case it may be difficult to restore the original fabric. Thus, conservative intervention can help prolong the existence of old heritage.

(c) Roof and Drainage Problems

Concerning roof drainage systems, the design of the monastery may have an impact on the built-in drainage system due to the connections between multiple roofs, resulting in low

waterproof performance, which causes water leakage and debris inside the structure. Moreover, when securing the roof protection of wooden monasteries, it is necessary to differentiate the criteria based on: (1) period of destruction, (2) cause of destruction, and (3) technical conditions. As the roof is a very important part of the whole structure when considering conservation, it is a priority to assess the physical conditions for the conservation sustainability of the structure. In figure 4.6, the blue line shows the leakage of the connecting roof layers. Thus, for all the above issues, conservation priorities should be considered for such specific conditions in Myanmar.

4.2. High Risk of Fire

Another issue is that materials of the monasteries are mainly constructed of wood. Therefore, it is necessary to consider fire safety as the main concern. In all of the surveyed monasteries from Myanmar, the percentage of fire safety preparedness plans is nearly zero (0%). Due to Myanmar being a developing country there is limited funding or budget for fire safety preparedness of monasteries. The strategies to produce a fire safety plan outlines the recommended action in four phases in the case of natural or man-made fire. The four phases mentioned above are: prevention, preparedness, response, and recovery. The issue of fire safety focused on the establishment of conservation priorities and plans at first, and then the priority

measurement should be set up based on the material used in the monasteries. The risk of fire safety for wooden monasteries is a critical issue at this moment in Myanmar. Nonetheless, these monasteries present a great risk as they are often not well prepared for current fire hazards. This section reviews the fire safety management system for wooden heritage monasteries based on selected research carried out to focus on fire prevention measures.

According to the site survey records, there should be awareness of fire prevention measures for wooden monasteries. Fire mitigation should be firmly proposed with active fire prevention measures such as the use of water buckets 24/7, the easy availability of water sources, and feasible ways of installing fire extinguishers for future safety as the basic steps for protection against fire. Moreover, other challenges found in suppressing fire and provision of escape in manual accommodation methods and the installation of electrical fire services are very dangerous approaches for immediate fire breakouts. Thus, the following action plan may also be proposed for every wooden monastery with specific conservation training with Immediate Action Plan (IAP).⁸

1. Reducing Ignition Sources (IS)
2. Limiting Combustible Materials (CM)
3. Providing Means for Detection and Alarm (DA)
4. Exit/ Emergency Access (EA)
5. Improving Manual Suppression (MS)
6. Improving Firefighting Facilities
7. Updating Fire Safety Management Procedures (MP)
8. Training (TR)

4.3. SWOC (Strengths, Weaknesses, Opportunities and Challenges) Analysis for Heritage Conservation of Wooden Monasteries

For SWOC analysis, there may be possibilities of strength, weakness, opportunities, and challenges for the consideration of improved appreciation of the heritage conservation of traditional Myanmar wooden monasteries. In this research, the SWOC analysis identifies the main strategic priorities in relation to an overall objective achieved by the high quality of the remaining original fabric, infrastructure, maintenance systems, and safety. Therefore, the following categories in each sector of SWOC conditions will be considered on the fundamental requirements of heritage conservation for these wooden monasteries as a practical field survey and theoretical analysis and

references.

STRENGTH

- Outstanding traditional monastic architecture
- Last Myanmar Kingdom's inheritances
- National understanding among ethnic groups
- Volunteer spirit and community pride

WEAKNESS

- Lack of understanding of the conservation practice for preserving cultural value of heritage buildings
- Lack of legal protection and designation
- Lack of understanding of the restoration sites, interpretations, management; weak or no support
- Delay of co-creation on cultural and heritage tourism
- Poor conservation laws

OPPORTUNITIES

- Identify ways and means to prioritise and improve policies that can engage and benefit the community based on previous Bagan UNESCO World Heritage
- Nurture the capacities for conservation knowledge sharing and participation
- Role of tourism infrastructure
- Engage in heritage tourism, cultural industries, small business incubation, center city revitalization, and property values

CHALLENGES

- Clearer understanding of how heritage conservation currently functions, or might function in the future
- Decline in safety and security
- Awareness about fire safety
- Structural regeneration and conservation sustainability
- Local community involvement

4.4 Proposed Priorities Actions

In this research, the priority actions for wooden monasteries have been identified and have been prioritized according to whether they should be undertaken immediately or initiated within various time frames depending on the structural behavior, conservation conditions and local community.¹⁶

Actions that should be undertaken immediately:

- Manage and monitor roof and site drainage of the monastery.
- Reduce fire hazard to the site by regular check and provide basic fire emergency plan for wooden structure.
- Cooperate with governmental organizations, particular professional associations and with the help of volunteer students

for wooden monasteries to identify and manage water, drainage, and fire risks, as well as visual and privacy impacts, particularly in relation to future development on adjoining properties.

- Investigate approaches to restore, revitalize and structural enhancement for structural weakening monasteries.
- Monitor the adaptive reuse type of monasteries as museum set up the rules for all uses, activities, and proposals for adaptation to identify, avoid, and mitigate heritage impacts on significant building, site elements, attributes, and significant values.

It is recommended that the following reactions and processes it be initiated within the next 12 - 24 months:

- Prepare and implement a conservation management plan and policy for the stage of well-conserved conditions.
- Develop a maintenance plan for the building complex, contents and collections, and landscape that includes cyclical and priority maintenance requirements.
- Remove trees identified as hazardous and threatening to the monastery complex.
- Prepare and implement a heritage risk management plan (including a disaster preparedness plan).

It is recommended that the following reactions and processes it be initiated within the next 24 - 36 months:

- Develop a comprehensive site drainage and water management plan to coordinate objectives and controls on water use and drainage throughout the site.
- Prepare a monastery and its environs' condition survey, and schedule for the conservation of the monasteries' master plan.
- Implement high-priority repair and conservation and maintenance works, prioritizing measures to significantly for vulnerable monasteries.
- Prepare and implement a visitor management plan for adaptive reuse type of monasteries as museums.
- Prepare and implement a regular maintenance plan, including cyclical maintenance and priority maintenance works requirements.
- Prepare a documentation record of the monastery for each restoration works.

5. Conclusion

In conclusion, the conservation of wooden heritage monastery is very important for Myanmar because it can provide and promote a sense of cultural-national identity and continuity for

future generations in a fast-changing world. The wooden heritage monasteries represent the old history and strong-traditional culture of our nation. This study presents conservation priorities and strategies for protecting architectural heritage, which is among the most valuable assets of the nation, and highlights the need for preventive conservation measures to protect them for potential threats, including unexpected and sudden natural disasters such as earthquakes and floods. The fundamental level of strengthening actions for wooden historic monasteries is categorised into four grading priority levels and helps identify the most affected and conserved regions based on criteria. The significance of the monasteries is determined through their historical and cultural value and physical assessment of the existing safety condition of the building, which is related to its vulnerability status. The possible technical interventions must be determined based on experience in the past and record after sorting out these to comply with conservation ethics and regulations. Finally, part of this research constitutes together the authentic value of architectural heritage and spreads awareness with important priorities and strategies that deal with issues of prolonging wooden monasteries in Myanmar.

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Source of the Figures

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