

Aesthetic Evaluation of Royal Palace in *Yadanapon* Period (Eastern Royal Zone)

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Abstract

Mandalay is one of the old cities in *Yadanapon* Period (1858.AD-1885.AD), and the last devastating war had seriously destroyed the palace buildings and left with only the memories of the past grandeur of the seat of the two kings: reign *Mindon* and *Thibaw*. In *Yadanapon* Period, the Royal Architecture or Palace Architecture arouse the desire to visualize the glittering halls and spires that they stood on the platform in the center of the fort. It remains many architectural significant of Myanmar Architecture for our future generation. Therefore, the author traces back the style of Mandalay Old Palace at first, which is derived from which previous styles and then he studies on the layout, functional relationships and spatial relationships of Palace Buildings which are mainly taken into consideration. Then, the author analyzes the architectural aspects and design elements of Palace Buildings. The purpose of this paper is to conserve the ritual expression, architectural styles, and characteristics of Myanmar Architecture. Moreover, the author would like to figure out the aesthetic evaluation of Royal Architecture in *Yadanapon* Period with systematic analysis which is based on literature review, site studies, observations and his opinions.

Keywords: Mandalay; Palace Architecture; functional relationship; spatial relationships; Myanmar Architecture; aesthetic evaluation.

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1. Introduction

In Myanmar, the formal name of Mandalay Old Palace is “*Mya Nan San Kyaw*” in Burmese. Mandalay was founded by King *Mindon* in 1858 as a new capital. It is located at 21°59’ N and 96°6’ E, and occupied part of a plain which stretches about thirteen kilometers from the *Irrawaddy* on the west, the Shan Hills on the east, the *Madaya* river on the north, and the *Myitnge* river on the south. After the disastrous Second Anglo-Burmese War of 1852, the former royal palace of *Amarapura* was dismantled and moved to the new location at the foot of Mandalay Hill [6]. The construction of the palace compound was officially completed on Monday, 23rd in May 1859. The palace was not only the royal residence but also the center of kingdom. It is also said that the royal palace of Burma was regarded as the symbolic center of the cosmological island of Mount *Meru* [3].

1.1. Background History of Mandalay Old Palace

In 1853, King *Mindon* ascended the throne of Burma. In 1856, he felt on very tired of his capital, namely *Amarapura* where is associated in his mind with the unfortunate reign of his elder brother and the humiliation of his country. And so new city set up on Friday the 13th of February, 1857, the first stone of Mandalay was laid to please the King and a hundred and fifty thousand people prepared to give up their homes and all their associations, and move to a bare new city. Five great officers of state were selected by the King to supervise the construction of the new city. It was to be a perfect square of 6,666 feet; the walls were to attain a height of 18 cubits; at intervals of 555 feet there were to be turrets for watchmen with gold-tipped spires; and there were to be twelve gates, of which the four principal ones were to bear away from the palace to cardinal points [6]. The greatest care was taken to follow the traditional plan of the older capitals of the country; and it is in this perpetuation of an ancient tradition that the true architectural interest of Mandalay resides.

2. Scope of Study

This paper is primarily scoped to focus on study and analysis of the followings.

- (i) Study on the buildings in Eastern Royal Zone at the Mandalay Old Palace.
- (ii) Study on the distinctive architectural features without included the detail ornamentation of the Mandalay Old Palace in *Yadanapon* Period.
- (iii) Figure out the aesthetic evaluation of Myanmar Old Palace in *Yadanapon* Period.

3. Research Methodology

More informative photographs, site and building measurements are collected for future references and data analysis. As the whole study is the analysis of zoning and function, building elements, and aesthetic evaluation. The datum of Mandalay Old Palace are synthesized from the readings a perspective on literature review that has been consistent with their ritual or beliefs, the author opinions or self-criticism and practice regarding with the verification on past designs. The aesthetic evaluation is figured out with the formal aesthetic with architectural design principles. The evaluation or assessment is conducted from alternative perspectives according to appropriate criteria and design principles upon the royal buildings on the palace platform.

4. Architectural Aspects of Royal Palace

This section will mainly focus on the site access, gates and doorways, site elements in the palace compound and zoning, building layouts on the palace platform, types of roofs and *pyat-that*, and color usage at the Mandalay Old Palace, in *Yadanapon* Period.

4.1. Site Access to the Palace

The master plan of the royal city was confined with 144-square block grid patterned city, anchored by a 16 square block of palace compound at the center and Mandalay Hill was located at the northern side of the palace city wall. The royal compound was surrounded by equal four sides in 6666 feet long walls and a moat 210 feet wide, 11 feet in deep.

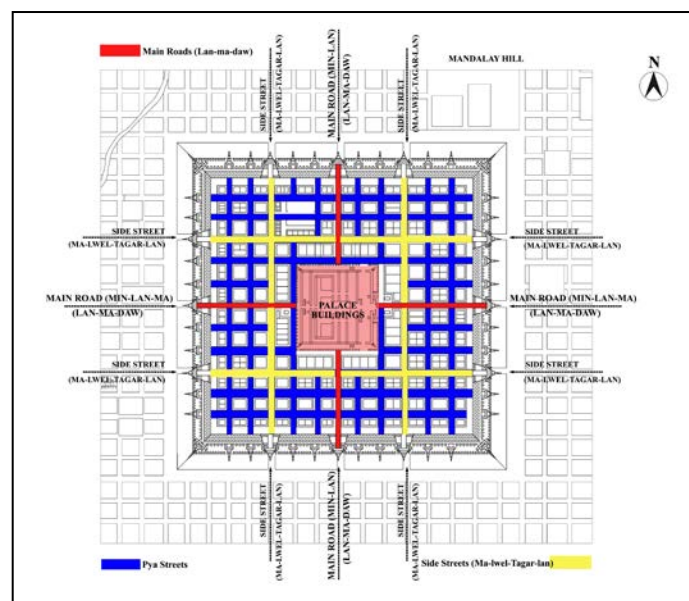


Figure 1: Site Access to the Royal Palace

4.2. Gateways of Mandalay Old Palace

According to the studied on the architectural aspects of Royal Palace in *Yadanapon* Period, there were twelve gates on outer palace city walls so as to access toward the inner city walls of the royal palace.

4.3. Site Elements in the Compound of the Mandalay Old Palace

The Mandalay old palace compound is a complex building type that contains a variety of site elements. The layout of the site elements can be seen or marked in the following layout plan of Mandalay Old Palace.

There are several elements can be found in the compounds of Mandalay Old Palace. Some site elements found in the palace compounds are the City Wall, the Moats and Bridges, the Gateways and Bastions, the Masonry

Screens, Clock Tower, Tooth-Relic tower, *Thibaw's* Monastery, *Hlut-daw* (Supreme Court), the Mint, and the Clusters of Royal Family's Tombs [5].

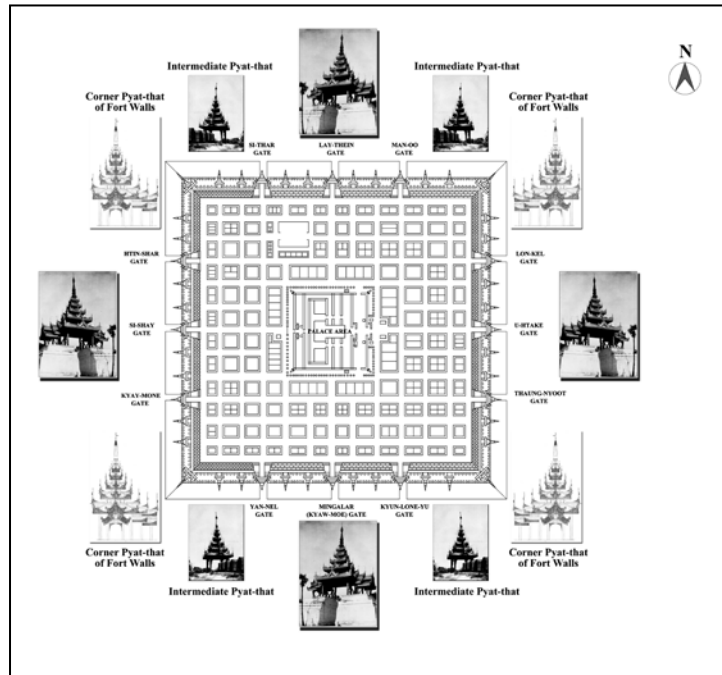


Figure 2: Gateways at the Mandalay Old Palace

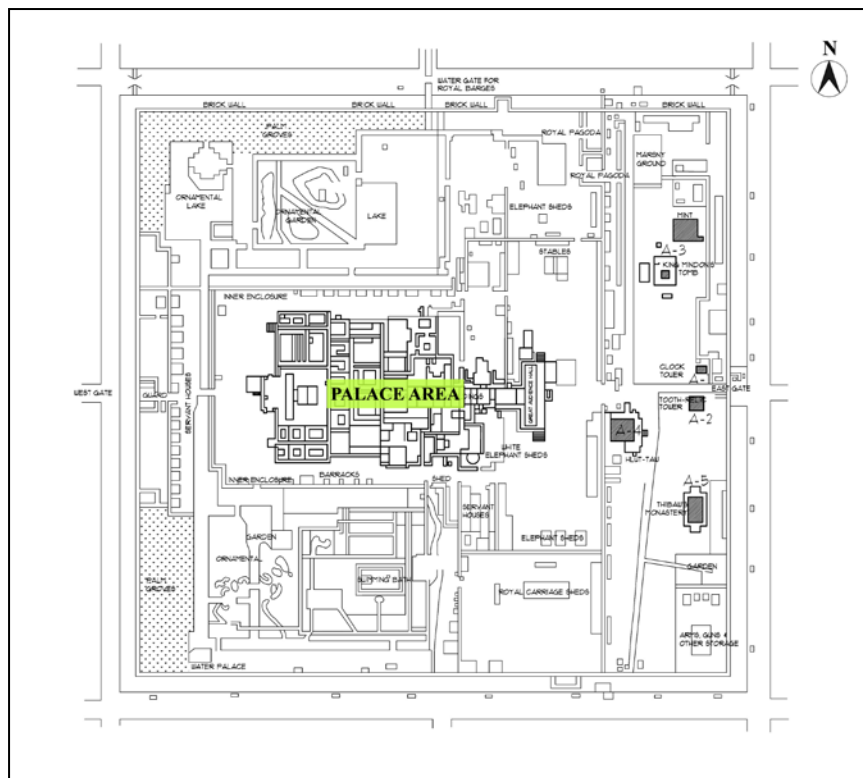


Figure 3: Site Plan of the Mandalay Old Palace [5]

4.4. Zoning on the Platform of the Mandalay Old Palace

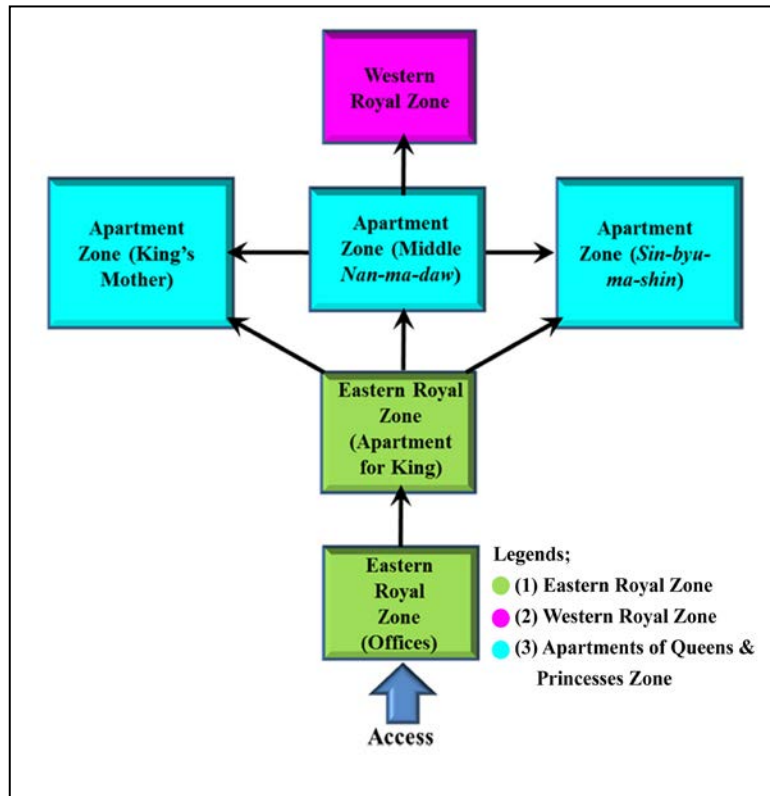


Figure 4: Zoning Diagram of the Mandalay Old Palace

4.5. Building Layouts of the Mandalay Old Palace

The main royal buildings were settled on the east-west axial direction. The royal palace is constructed on the elevated brick platform and plank flooring laid on that platform. The buildings on the eastern part were mainly used for office or meeting space.

The apartments of Queens and Princesses would see at the west side of the palace platform. The building layout and composition, and architectural styles of this palace are similar to the *Inn-wa (Ava)* Royal Palace in *Konbaung* Period.

4.6. Types of Roofs

There are two types of roofs such as pitch roof and flat roof that would be seen at the Mandalay Old Palace. The classification of the roof forms are Seven-tiered Spire Roof, Three-tiered Hip Roof, Two-tiered Hip Roof, Three-tiered Roof (*Yun-htet*), and Two-tiered Gable Roof which all would be seen at the buildings on the palace platform.

4.7. Color Decoration at the Buildings of the Mandalay Old Palace

There were four main color decorations that would be seen the buildings on the platform of the palace. The compartments completely gilt embellished on the buildings which was commonly used by the King, and compartments of the Chief Queens. The compartments partially gilt over red paint embellished on the *Sanu-zaung*, *Dawei Halls*, *Le-tha-zaung* and Tea Hall.

The building painted red would be seen at the apartments of the lesser queens, and high tower (*Nan-Myint*). The building painted white would be seen at the *oak-tikes* which were mainly constructed with brick during the reign of King *Thibaw*.

4.8. Types of Pyat-that at the Buildings of the Mandalay Old Palace

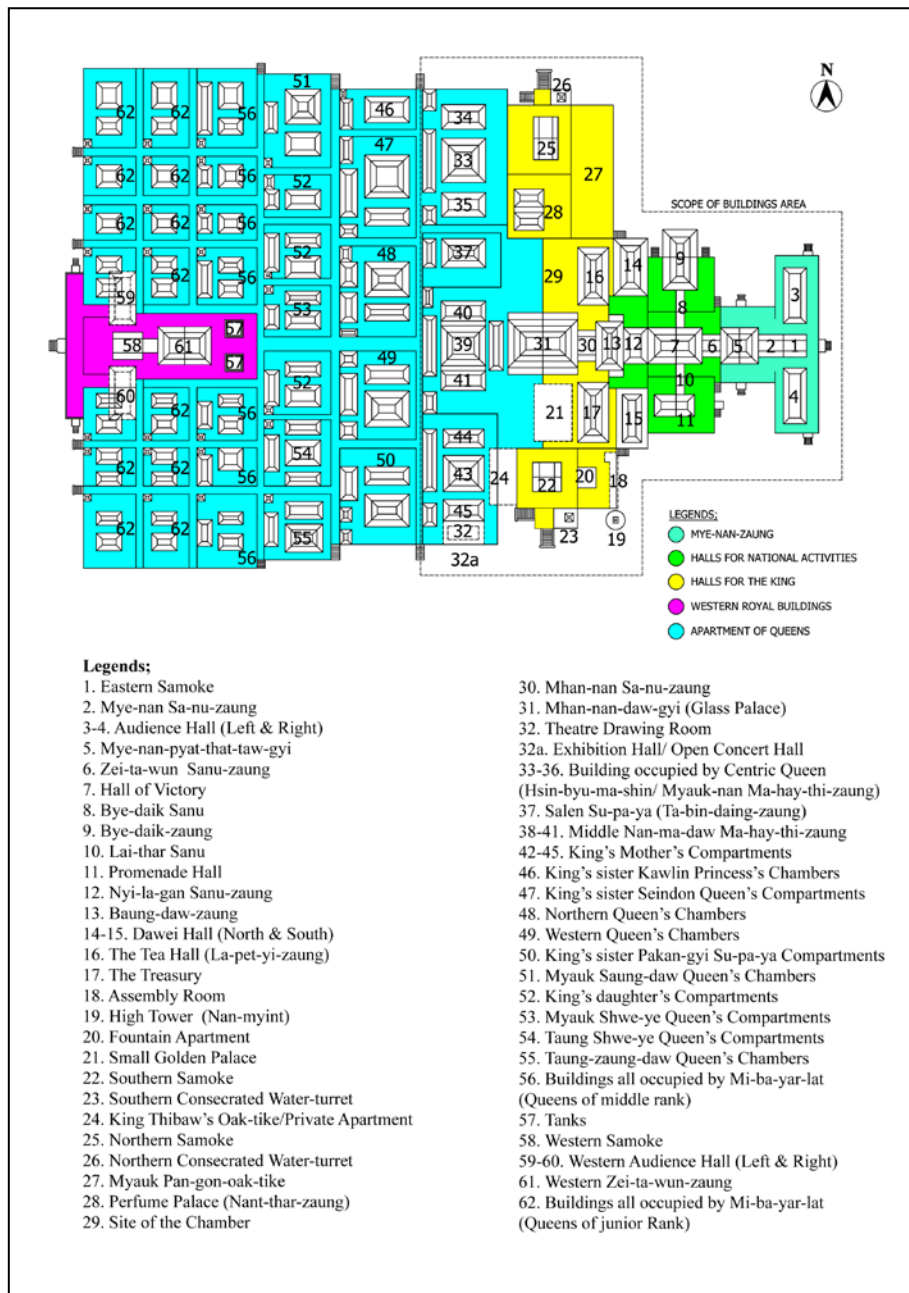


Figure 5: Layout Plan and Space Utilization of the Mandalay Old Palace

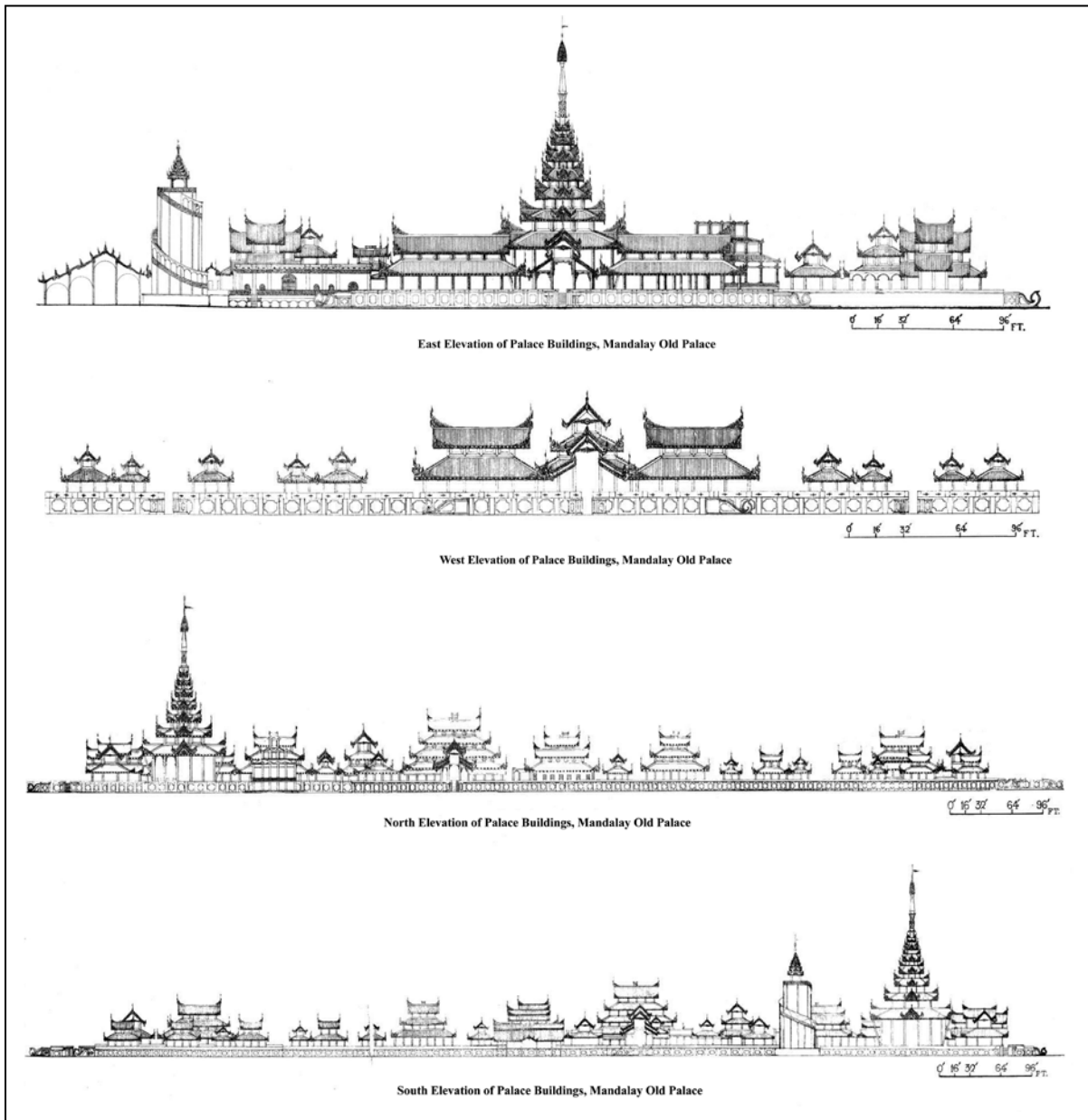


Figure 6: Elevations of the Mandalay Old Palace [5]

4.9. Opening Designs

Most of the doorways were richly decorated in the buildings of the royal palace, which were mainly constructed with wooden frames and leaves.

Table 1: Types of *Pyat-that* at the Buildings of the Mandalay Old Palace

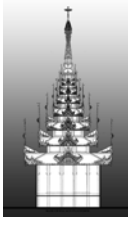




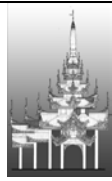






Type	Names	Location	Figure	Remark
I	<i>Lay-daunt Pyat-that</i>	<i>Mye-nan-pyatthat-taw-gyi</i>		Square plan-shaped and seven-tiered roof spire Highest, largest, grandest and noblest <i>pyat-that</i>
	<i>Lay-daunt Pyat-that</i>	Southern & Northern Consecrated <i>Pyat-that</i>		Square plan-shaped and seven-tiered roof spire Timber structure <i>pyat-that</i>
	<i>Lay-daunt Pyat-that</i>	High tower (<i>Nan-myint</i>)		Square plan-shaped and seven-tiered roof spire Timber structure <i>pyat-that</i>
II	<i>Yuan-sat-pyay Pyat-that</i>	Four central gates of outer city walls		Seven-tiered roof spire Timber structure <i>pyat-that</i>
	<i>Yuan-sat-pyay Pyat-that</i>	Flank gates of outer city walls		Five-tiered roof spire Timber structure <i>pyat-that</i>
	<i>Yuan-sat-pyay Pyat-that</i>	At the four corners of outer city walls		Five-tiered roof spire and two Yuan-saungs were included on both sides Timber structure <i>pyat-that</i>
III	Brick <i>Pyat-that</i>	King <i>Mindon's</i> tomb		Square plan-shaped Brick <i>pyat-that</i> , plastered over and whitewashed

Table 2: Some Opening Designs at the Mandalay Old Palace

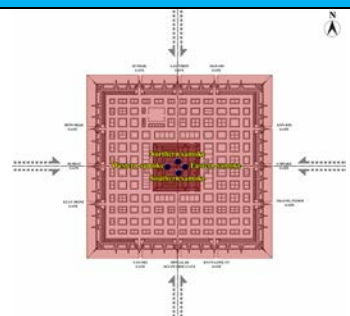
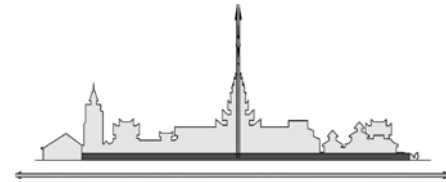
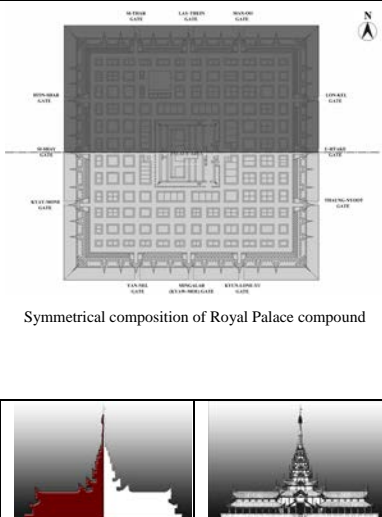
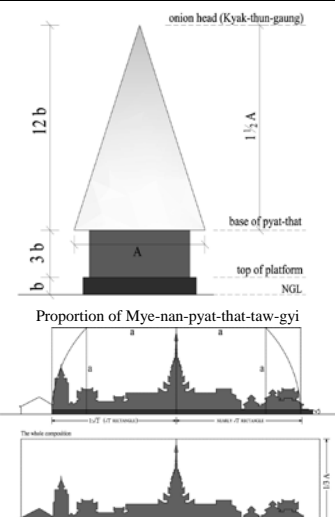

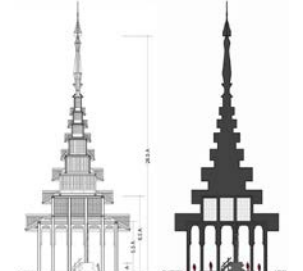

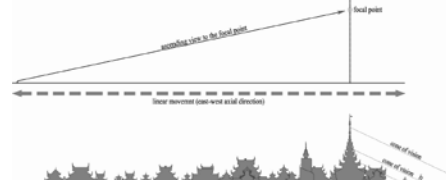
Opening Designs	Location	Material	Remarks
	Doorway at the <i>Zeita-wun-zaung</i>	Wooden door	it is the gilded doorways with detailed open-work foliage on jambs and lintel and highly adorned with wood carvings
	Doorway at the North <i>Samoke</i>	Wooden door	it is the gilded doorways with graceful proportion and highly embellished with wood carvings
	Door design at the Glass Palace	Wooden door	this door design is the creation of gilded glass mosaic incorporated with semicircular arch and square blocks
	Door design at the Middle <i>Nan-ma-daw Ma-hay-thi-zaung</i>	Wooden door with semicircular glass fanlight	fanlight design is the floral shaped-glass in the semicircular and the upper door leaves having louvered opening
	Door design at the King's Mother's Compartment	Wooden door with semicircular glass fanlight	semicircular fanlight on top adorned with floral motifs and the door leaves is in the forms of inclined square blocks (<i>Yar-sa-mat-kwet</i>)

5. Aesthetic Evaluation of the Mandalay Old Palace

The following design principles & design aesthetics have been evaluated and which all are primarily analyzed

on the Mandalay Old Palace during the *Yadanapon* Period (1858-1885AD).

Table 3: Applied Design Principles at the Mandalay Old Palace

Item	Design Principles	Type	Design Principles
A	<p>Building Approach</p>  <p>Frontal approach to the Royal Palace</p>	E	<p>Contrast in Direction</p>  <p>Contrast in direction at the palace facade</p>
B	<p>Balance</p>  <p>Symmetrical composition of Royal Palace compound</p> <p>Balance on palace facade</p>	F	<p>Proportion</p>  <p>Proportion of Mye-nan-pyat-that-taw-gyi</p> <p>Proportion of the palace facade</p>
C	<p>Emphasis</p>  <p>Emphasis at the palace facade</p>	G	<p>Human Scale</p>  <p>Human scale in the Mye-nan-pyat-that-taw-gyi</p>
D	<p>Unity with Dominance</p>  <p>Unity with dominance at the palace facade</p>	H	<p>View & Movement</p>  <p>View & Movement toward Mandalay Od Palace</p>

6. Structure and Material Usage

Table 4: Structure and Material Usage at the Mandalay Old Palace

Sr. No	Components or Building elements	Structure & Materials	Remarks
1	Palace Buildings Walls	Teak panel or plank Brick masonry	Some <i>Sa-nu</i> and <i>Samokes</i> devoid walls and used railing with balustrades
2	City walls	Brick with red earthen masonry	Under the base of main gates & flank gates' <i>pyat-that</i>
3	Raised Platform	Brick retaining wall	Surrounded by two brick walls, forming with the platform two enclosures
4	Floors	Timber floor	Supported with traditional wooden joists and members (<i>Yet-ma, Nwa, Kaladet</i>)
5	Roofs	Wood Shingles (Conjecture) C.G.I sheet roofing (in 1904 AD)	Except Assembly Hall, Fountain Apartment, <i>Myauk Pan-gon-oak-tike</i>
6	Columns	Circular Teak column Coated with glass mosaic column	The <i>kun-sin-taing</i> extended from the ground to the uppermost roof
7	Openings	Wooden doors & windows	Some <i>Sanu</i> and <i>Samokes</i> devoid openings
8	Structures	Timber framed structure	Except <i>Oak-tike</i>
9	Framing Systems	Post & beam system Wooden joinery work	Using <i>Sei-ywe-zet</i> to connect the extended height of pillars and length of the horizontal timber members

7. Conclusions

According to the learning of the royal palace in *Yadanapon* period, the palace buildings are strongly developed along the east-west axis. The buildings layout is composed of eastern royal zone, western royal zone and apartments of queens and princesses zone. The most commonly used of building materials are brick, timber, red earthen masonry and the construction technologies are applied with post & beam system for structural member, brick retaining walls at palace platform, and the floor joists are fabricated with wooden joinery method. As aesthetic evaluation of the palace buildings, the *Mye-nan-pyat-that-taw-gyi* is the auspicious buildings in the

palace compound, it is the fact that the highest, grandest and noblest *pyat-that* with graceful proportion. At the facade of the whole palace, the highest *pyat-that* of *Mye-nan* is emphasized by smaller yet well-accented or articulated buildings so as to contribute to the awe with which one could behold; this adds to the overall composition of the facade being proportional and prominent. Proportionality of the accented buildings is a pleasant sight only to be made more majestic by the building at the center which seems to go higher with each floor level thus adding to the overall grandeur. The design principles such as formal balance, building emphasis, unity with dominance, and contrast in direction and pattern repetitions were applied to show the expression of palace architecture. The noticeable human scale could feel with lofty sensation inside the *Mye-nan-pyat-that-taw-gyi*. The square plan-shaped of the *lay-daunt-pyat-that* is significantly built in *Yadanapon* period and the difference between its width and height proportion is one and half times that pointed to the upward direction. The focal point or the eye catching of the palace design in *Yadanapon* period is created with *Mye-nan-pyat-that-taw-gyi* and oriented with *four samokes* on each cardinal point, emphasis with frontal approach on each side.

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