

" Architectural Aspects Of Stupas During The Reign Of King Narapatisithu In Bagan, Myanmar "

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1. Abstract

The research paper is studied about architectural aspects of stupas that were built during the reign of King Narapatisithu along Bagan dynasties. The author would like to study these stupas depending on four factors such as (i) Reflection in the form (ii) Spatial compositions (iii) Structural aspects and (iv) Decorative aspects. The stupas are classified according to their development of Form such as Stupas with bulbous shape, Stupas with octagonal basement, Stupas with rectangular basement, Stupas with circular basement, Stupas with pentagonal basement and Sinhalese type Stupas. Most of the stupas with circular basement, bulbous shape, rectangular basement, pentagonal basement and octagonal basement in the Bagan period were apparently evolved from the hemispherical stupa like Sanchi and Amaravali of India. Among them, Dhammayazika Stupa is surpassing example of the Bagan stupas. It was more required in skill for management, estimating, drawing and construction. According to cosmic metaphor and symbol of the five Buddhas, the geometrically guided layout is the finest expression of the Bagan. There were altogether the stupas that built in Bagan and the Dhammayazika Stupa is the zenith of Myanmar Religious Architecture. The contribution of this study is the architectural and technological achievements of Myanmar Religious Architecture that reached its peak during the reign of King Narapatisithu (1174-1211 A.D). Myanmar had impressed on special features and their own style from the Indian style. They showed entirely the different appearance of the whole structures from the Indian monuments. They may be traced to the Indian origin by signifying the philosophy of the fine arts. This research paper is studied that the architectural typology of Bagan monuments adopted to conform Myanmar style. Furthermore, the research paper is expressed those stupas during the reign of King Narapatisithu were the most outstanding and famous levels compared with other stupas along Bagan periods.

2. Aims and Objectives

The research paper is aimed to contribute the following objectives.

To study on creation of architectural aspects of stupas those were built during the reign of King Narapatisithu

To express in attempting of the development of architectural aspects of stupas in the reign of the King Narapatisithu

To uplift Myanmar religious architecture

To support the works of conservation and maintenance of these historical buildings in Bagan

3. Scope of the Research Paper

It is to be analyzed architectural aspects of stupas that were built during the reign of King Narapatisithu. He built many temples, stupas and constructed reservoirs, canals. The regions are Bagan, Kyaukse, Monywa, Shwebo, Thayet, Taloke, Aneint, Kale, Kyaukhinn, Kanbalu, Sidoktaya, Kyauhnnyat, Singu, Samoon, Sagaing and Amyint. Among these places, the area of Bagan is chosen to study. The most temples and stupas were built in Bagan than other regions during the reign of King Narapatisithu.

According to (1) traditional records (2) stone inscriptions and (3) glass palace chronicle, it has thirteen temples and two stupas during the reign of King Narapatisithu. The architectural aspects of stupas will study depending on three factors. These are (i) Reflection in the form (ii) Structural aspects and (iii) Decorative aspects.

Furthermore, these stupas during the reign of King Narapatisithu were the most outstanding and famous levels compared with other stupas along Bagan periods.

4. Method of Approach

The following methods are approached to study architectural aspects of stupas during the reign of king Narapatisithu in Bagan.

Literature review for a brief history of Ancient Bagan Dynasties and Bagan Periods.

Case studies on architectural aspects of stupas built by King Narapatisithu

Architectural aspects of Dhammayazika stupa and Sapada stupa would be analysed with three aspects.

Development and changes of architectural typology of stupas along Bagan periods

Conclusions on architectural aspects of stupas during the reign of King Narapatisithu from the above studies.

5. Terms and Definitions

Stupa: The word 'Patho', very common in the inscriptions, usually means much the same as 'zedi' (ceti) which is the derivative of Pali vatthu, 'the ground, the site', and therefore it is a solid pagoda.

Recess: The flat dish created plain mouldings or glazed elements utilizing the centre of plinth of a temple or stupa. The conventional English transcription of the Myanmar name is 'Hman Kwaet'.

Pediment: The gateway to a temple.

Flaming arch pediment: The conventional English transcription of the Myanmar name is ' Yama- letnyoe moutanke ' .

Porch: The facade of a pediment .

Terrace: The conventional English transcription of the Myanmar name is ' Pyitsa-yan ' . It lies the upper parts of a temple .

Accessible terraces: Accessible terraces have flight of steps on each side

Unaccessible terraces: Unaccessible terraces have no flight of steps to climb up on higher terraces .

Sikhara: Sikhara is the uppermost part of a temple .It is also called ' Kwan-taung ' .

Chattravali: Chattravali is the uppermost part of a stupa . It consists of the conical spires and the atwat or metal .

Anda: Anda is the middle portion of a stupa and circular bell- shaped dome.

Medhi: Medhi is the foundation of a stupa and the spreading terraces at the bottom of the stupa .

Relic chamber: In the Sinhalese type stupa , relic chamber is to be found between bell-shaped dome and conical spires.

6. Literature review

Physical Conditions of Bagan

Geographical Conditions

The Bagan lies on the east bank of Irrawaddy River in the dry zone of central Myanmar. It's area is about 16 square miles. Visual demarcation of Bagan were demarcated by stupas .

The first stupa is Tantkyitaung stupa that is laying on the top of Tantkyitaung. It lies on the west of Irrawaddy river from Bagan.

Second stupa is Shwezigon, lies on the edge of hill that covered the river about one mile form west of Nyaung Oo.

Third stupa is Lawkananda. It lies on the south of Thiripiyasaya along the river bank which is on the edge of hill that having high and steep form.

Fourth stupa is Tuyintaung pagoda that laying on the top of Tuyintaung.

Within this demarcations, people built many religious buildings in Bagan area.



Map 1. Geographical conditions of Bagan area



Figure. The Panorama View of Temples and Stupas in Bagan Area



Figure. Bagan Cultural Landscape across from Ayeyarwaddy River

Climatical Conditions

The people who began Bagan, left from Thayekhittaya old city. So, they looked for good places. The flat plain between Irrawaddy river and Tuyintaung was a suitable place for building as a city.

After leaving from Thayekhittaya old city, the people began to live in Bagan. They could be built as a city with fifty-fifth dynasties and about over 1200 years because of good climate and agriculture. Therefore, they could be built many buildings in Bagan region.

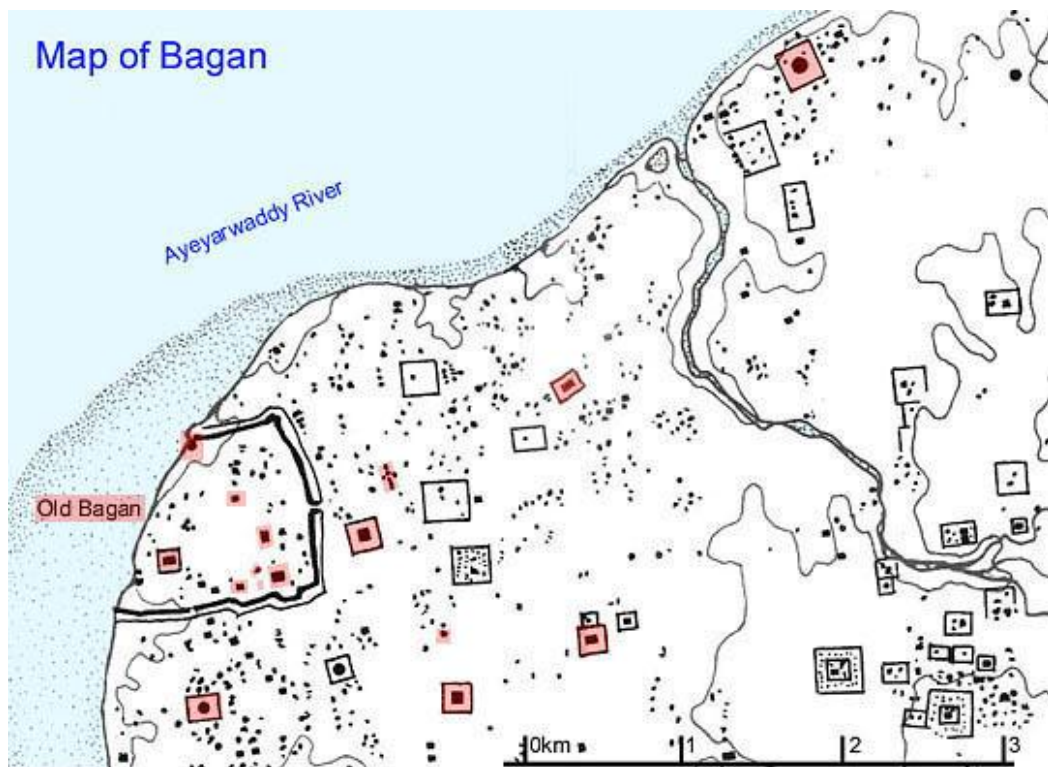
Nowadays, the climate of Bagan is tropical and is generally classified as hot and dry throughout the year. In the summer, during the day temperature is 43 °C and at night, the temperature is 24 °C. In the rainy season the temperature is about 36 °C during the day and about 25 °C at night. In the winter, the day temperature is about 30 °C and night temperature is about 10 °C.

Historical Perspectives of Bagan

A Brief History of Bagan

According to the inscriptions, the literary name of Bagan is Arimaddanapura, "the conquering city".¹ According to the Glass Palace Chronicle, the land of Bagan can be defined as "Land of Victory".² Tradition saying, it was deduced that the name of Bagan was derived from Pyu gama. From Pyu gama, it was changed to Pyu gam, after that Pugam and then to Bagan.

The age of Bagan is 1262 years from A.D 107 to A.D 1369. There were 55 kings who ruled in Bagan from King Thamudarit to King Sawmunnit. The first palace site can be considered in "Yunhlut-Kyun" with king Thamudarit in A.D 107. The palace was transferred to the second palace site named "Thiripyitsaya" during the reign of King Thinlikaung, the 7th King of Bagan dynasties in A.D 344. The 12th King Thaktaing transferred the palace site to "Tampawaddy" in A.D 516. Finally, the 34th King Pyin O Lya moved the palace in A.D 846 to the existing palace site, the Bagan.



Map 2. Showing on four places of Royal palace

Socio-economic Conditions

Bagan lies on the heart of Myanmar therefore it was the centre of inland commerce and contacts of networking. It was also situated at the centre between Assam and Yunnan for communication. By the records, there had been foreign relationship with India, China and Sri Lanka. Especially Sri Lanka tended upon the history of Theravada Buddhism.

Agriculture was Bagan's main economy and cultivation was the general practice of the farmers. Therefore, networks of irrigations were constructed throughout the kingdom. During the reigns of King Anawrahta and King Narapatisithu, they built dams, reservoirs and canals and they also repaired the old reservoirs especially Kyaukse and Minbu. Since those days, the construction of dams and reservoirs have been managed systematically by the successive Myanmar Kings.

Religious Faiths

Bagan was covered with religious buildings of different sizes and different shapes. According to the stone inscriptions, the donors always mentioned their wishes as to get the Nibbana and to stop the Samsara.

Before King Anawrahta's period, Bagan was influenced by Mahayana practices. King Anawrahta cleared up those practices. After that, he was initiated the Theravada Buddhism to Bagan and he could promote and support the Buddha Sasana to be flourished. The arrival of Shin Arahant from Thahton was also regarded the Theravada Buddhism in Bagan. Under the guidance of

Shin Arahan, he brought the pure form to Buddhist Scriptures from Thahton. Therefore, King Anawrahta successfully attempted together with the establishment of Theravada Buddhism.

Reasons For Focusing On Temples And Stupa During The Reign Of King Narapatisithu

Reasons for Focusing on the Reign of King Narapatisithu

In Bagan period, Kings built gloriously and proudly temples and stupas to show their powerful and glory. These buildings involved various sizes and forms up to the highest and largest buildings from the smallest buildings. But, we cannot find the buildings that having the same form although many structures have in Bagan. Therefore, the grandeur and strangeness architectural edifices of Bagan is the main key of the glorious of Bagan.

The development architectural edifices of Bagan are divided into three parts.

- (i) Early Bagan period (About 1044 AD to 1113 AD)
King Anawrahta to King Kyansittha
- (ii) Middle Bagan period (About 1113 AD to 1174 AD)
King Alongsithu to King Naratheinkha
- (iii) Late Bagan period (About 1174 AD to 1300 AD)
King Narapatisithu to King Narathihapati ¹

Architectural edifices of temples and stupas at early Bagan period were as follows:

These structures were massive forms and had very thick walls and large brick sizes. And, its were created to get little lighting into the interior spaces. These buildings were almost a single storey buildings with low terraces. In addition , these buildings were not proportioned horizontal and vertical heights.

Architectural edifices of temples and stupas at middle Bagan period were as follows:

In this period, the buildings were built more than one storey. This buildings changed into light and high form. And, it's were used porches and windows at central shrine walls to get lighting into the interior space. Furthermore, the distinct factor of this period was that inscriptions happened early Myanmar letters.

Architectural edifices of temples and stupas at late Bagan period were as follows:

These buildings were almost built above platform and large storey height. And, its were used little thin walls and small brick sizes. In addition , these buildings were used flat terraces with parapet and also used windows and porches to get good lighting at everywhere. It were built upto two storey, three storey and four storey, and changed into light form. The distinct factor of this

period, these buildings were created not only rectangular forms but also circular and pentagonal forms.

The buildings at first portion of late period continuously conserved architectural edifices of temples and stupas from early and middle periods. After that, they were made reformation and invention. In late period, the developments of architectural edifices got the most outstanding and famous levels.

For example, in the middle period, Thatbyinyu Temple was built with steps by steps. But, it could not obviously express these steps like as the buildings of late period. It was not successful as Sulamani Temple of late period in construction of steps by steps. Furthermore, large temples that reaching the most outstanding and famous level within late period were Sulamani Temple, Gadawpalin Temple and Htilominlo Temple. In addition, Dhammayazika Stupa was a distinct plan in the late period. It has a pentagonal form, similar with Shwezigon Stupa in early period. This plan-shaped was more required in skill than other rectangular and circular plan-shaped in estimating, drawings and constructions. Therefore, late period architects were very improved in architectural skill. Pentagonal plan-shaped temples and stupas had 17 Pagodas in Bagan. Out of these pagodas, Dhammayazika was the most massive and largest stupa.

In addition, the development of architectural edifices along Bagan period can be recorded that early period was influenced with Mon form and late period was influenced with Myanmar form. Because, during the reign of King Kyanzittha inscribed with Mon languages and during the reign of King Narapatisithu inscribed with Myanmar languages.

Finally, out of late Kings after Anawrahta, Narapatisithu made good deeds as King Anawrahta. During this period, he made strange performances that servants were supported with money and paddy as monthly salary. In addition, he took equal gold with his five princes' body weights, and commanded them to build five temples that called Myebontha Hpayahla, Chauk Hpayahla, Thakyataung Hpayahla, Zakyo Hpayahla and Kazuno Hpayahla. Therefore, he had performed good deeds in religious sections. Furthermore, he was the most outstanding and the best king out of late period kings.

Therefore, we would like to study the creation of architectural aspects of temples and stupas during the reign of King Narapatisithu from architectural point of view.

Temples and Stupas During the Reign of King Narapatisithu

According to (i) traditional records (ii) stone inscriptions and (iii) glass palace chronicle, we can know the donors of temples and stupas.

King Narapatisithu built many temples and stupas in the whole country. These buildings were especially as follows; Thoneluaba Hpayahla in Aneint, Pahtogyi Hpayahla in Taloke, Shwetansar Hpayahla in Shwebo, Myatheintan and Swetaw Hpayas in Thayet, Zedihla Hpayahla in Monywa and Hpaungdawoo Hpayahla in Kyaukse.

After building the above structures, he also built at Kale, Kyaukhinn, Kanbalu, Sidoktaya, Kyauhnnyat, Singu, Shwebo, Samoon, Sagaing and Amyint townships.

Temples and stupas during the reign of King Narapatisithu in Bagan were especially as follow;

The temple were :

- Sulamani Temple
- Guni (south) Temple
- Tatkale Temple
- Kathapa (east) Temple
- Thatthemok Temple
- Kubyaukng (Myinkaba) Temple
- Shwethabeik Temple
- Gawdawpalin Temple
- Tabeikhmauk Temple
- Myebontha Hpayahla Temple
- Kazuno Hpayahla Temple
- Thakyataung Hpayahla Temple , and
- Chauk Hpayahla Temple .

The stupas were:

- Dhammayazika Stupa and
- Sapada Stupa

7. Study on Architectural Aspects of Stupas

Study on Dhammayazika Stupa

Dhammayazika stupa is situated on the west side of west Phwasaw village. The stupa was built by King Narapatisithu in AD 1196. It is a biggest pentagonal monument in Bagan region.



Figure. Form Composition of Dhammayazika Stupa

Reflection in the Form

It resembles the Shwezigon Stupa and total height is 180 feet. It lies at the centre of a 15-sided walled enclosure with five gateways and on a pentagonal platform with five satellite temples.

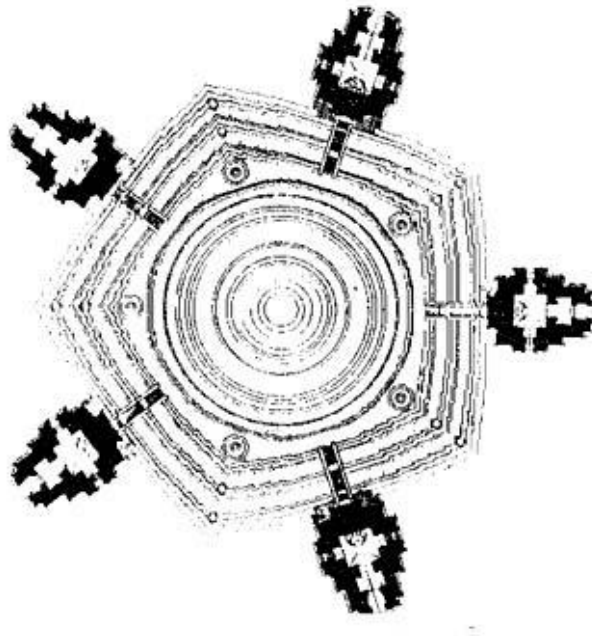


Figure. Spatial Organization of the Stupa

According to inscription, five satellite temples, housing for five seated Buddha images, dedicated the representing of the five Buddhas of the present world circle who have already

attained enlightenment, Kakusandha, Konagamana, Kassapa, Gotama and including future Buddha, Maiteya.



Figure. View to Dhammayazika Stupa with Satellite temple

It has five terraces. They are (i) two accessible pentagonal terraces with projections and composes corner urns, (ii) one accessible pentagonal terrace with projections and composes corner stupa, (iii) one 10-sided terrace with projections, and (iv) one circular terrace. Over the terraces, there are sequentially composed with edge of bell, the bell, frieze with ogre heads, decorative belt, upright frieze and decorative motif, bell shaped dome, conical spires and Kha-ye-thi.



Figure. Decorative motifs of the Stupa

In the five satellite temples, it has base with recess. Pediments are flaming arch pediments which have two layers with side land-to pediments. Openings are perforated windows with flaming arch pediments that have one layer with side land-to pediments.



Figure. Perforated window of Satellite temple

Structural Aspects

It consists of five sided bases, five corners and five angles which have 108° each. Brick masonry is used with stone reinforcements at the corners.

In the five satellite temples, there are cloister vaults, barrel vaults and flat arches. It is used by cloister vaults over shrine, barrel vaults over entrance hall and porches, and flat arches over perforated windows. It is used by stone reinforcements at the base corners and also used the stone window sills.



Figure. Stone Reinforcement at the Base of the Stupa

Decorative Aspects

Architectural decorations attached to stucco mouldings, glazed decorations and mural paintings.

Plain stucco mouldings are decorated on the terraces. There are beautiful stucco mouldings on frieze with ogre heads, decorative belt, and upright frieze and decorative motif.

In the base with recess, there are glazed terracotta Jataka panels which are from the lowest terrace upto the third terrace. The niches along the fourth terrace were decorated with the glazed terracottal tiles as the rhombus shape.



Figure. Glazed Terracotta Jataka panels from the lowest terrace to the third terrace

In the five satellite temples, upper exterior walls are adorned by the frieze with ogre heads. The corner pilasters consist of lower capitals, upper capitals, corner bands, dados, ornate mouldings and plain mouldings.

In the shrine, mural paintings can be seen as lotus rosace, corner bands and tangent circle patterns under cloister vaults. It can also be seen as frieze with pointed obovals, dummy pediments, corner pilasters with capital on the walls and as Bodhi tree floral patterns behind the images.



Figure. Tangent Circle Patterns Mural Painting under Cloister vault

In the entrance hall, there are tangent circle patterns under vaults, and frieze with pointed obovals and frames on the walls.

In the porches, there are secant circle patterns under vaults and frames on walls.

Study on Sapada Stupa

Sapada is situated on the southern sector of Nyaung U which was built in the 12th century AD by Sapada who was ordained a monk in Ceylon.



Figure. Approach to Gate way and enclosure wall of the Stupa

Reflection in the Form

It is a Sinhalese type stupa, the model of Thuparama from Anuradhapura in Sri Lanka. It commemorates the religious intercourse between Myanmar and Ceylon.

It lies at the centre of an enclosure wall and on a rectangular platform with two gateways on east and west.



Figure. Form Composition of Sapada Stupa

It has two circular terraces that are inaccessible terraces which have no flight of steps on each sides. Over the terraces, there are sequentially composed with edge of bell, bell-shaped dome, relic chamber and conical spires.

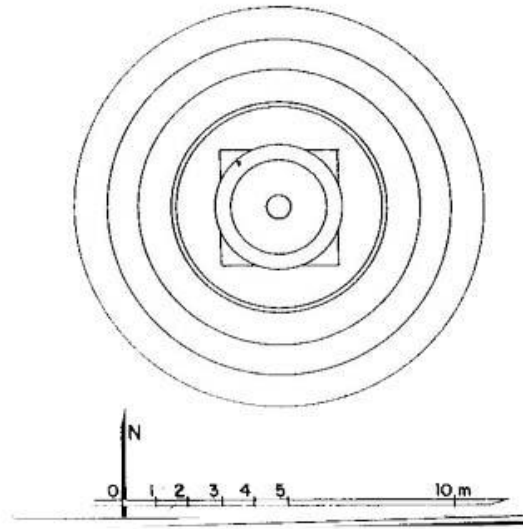


Figure. Spatial Organization of the Stupa

The prominent feature is relic chamber being constructed between bell-shaped dome and conical spires.

Structural Aspects

It composes with circular base, circular terraces. The whole stupa is circular shape except relic chamber. Brick masonry abounded with fine plaster carvings.

Decorative Aspects

In the whole stupa, architectural decorations attached to plain stucco mouldings. There are beautiful plain stucco mouldings along the two circular terraces, bell-shaped dome, relic chamber and conical spires.

Study on Kazuno Hpayahla

It lies in the south of east Pwasaw village. It was built by King Zeijatheinkha, the youngest son of King Narapatisithu , in AD 1192.

Reflection in the Form

It was a medium sized single building and was a circular temple. It was articulated main body called circular bell-shaped dome with four vestibules. It has base with recess in niches and has east main porch only. Each main entrance's form was pediment with figure at the top. Three niches entrance's forms were pediment with figure at the top. In addition , foreparts with niches were situated at each side of niches.



Figure. Form Composition of Kazuno Hpayahla

The base of main body was a stupa form. It has a circular terrace with dados. And then, circular bell-shaped dome, conical spires and umbrella were placed above this terrace. Furthermore, above foreparts have two square terraces with corner amortizements. And, axial stupas with circular bell-shaped dome, conical spires and umbrella have above these terraces.

Spatial Compositions

It was located at centre of enclosure walls and was built on a square platform with stairway on east. It was composed with space-centered system.

3.1.10 Kazun.o hpayahla

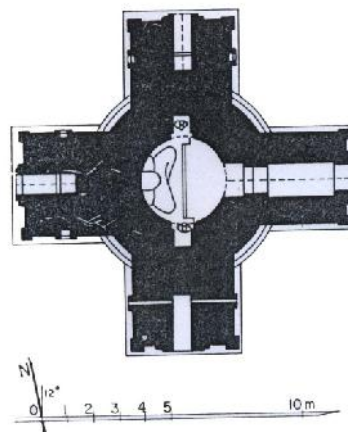


Fig 22. Plan

Figure. Spatial Organization of Kazuno Hpayahla

The composition of plan-shaped was different with other temples. It has a east main porch and can enter towards Buddha image. Circular central shrine was placed within circular bell-shaped dome and Buddha image seated on east. Towards main shrine can enter through vestibule and porch. A niche that having seated Buddha image was placed at each side of central shrine. And, niches have on south, north and west foreparts. Standing Buddha images have within north and west niches except south niche. Small apertures were created at each side of south niche to get lighting and ventilation. These temple was combined with circular shape and rectangular shapes.

Structural Aspects

It was mainly used bricks, stone reinforcements and masonry as materials. It was built with cupola over central shrine and also used with corbelled vault over porches and niches . It was used with barrel vault hipped at east end and also used corbelled arches at side niches of central shrine.



Figure. Barrel vault hipped at east entrance

Decorative Aspects

It was decorated with stucco mouldings and mural paintings as decorative elements.

In exterior decorations , it was used stucco mouldings at pediments with ornates , terraces, cornices, corner pilasters, dados and corner amortizements. Axial stupas above foreparts were gilded with ceramic mosaics . It was decorated plain mouldings at main body and its upper parts were gilded with gold.



Figure. Stucco mouldings at pediments of Kazuno Hpayahla

In interior decorations , it was decorated throne shape with ceramic mosaics at central shrine. In mural paintings; it was used square patterns with figures over central shrine. On walls, it was used plain mouldings.



Figure. Square patterns mural painting with Buddha figures over central shrine

Study on Thakyataung Hpayahla

It lies on the top of Thakyataung that is laying on Tuyintaung ridge. It was built by King Yarzathura, son of King Narapatisithu in AD 1192.

Reflection in the Form

It was a small single-storey temple and has a slightly domed roof over central shrine and porch. It has base with steps by steps in the whole building and has west main porch only. West main porch's form was a simple pediment. And then, circular bell-shaped dome, conical spires and umbrella were placed above the main building.

Spatial Compositions

It was located at centre of low enclosure walls and was built on a platform with stairways on north-east. It was composed with space-centered system.

This temple was faced at west and has large Buddha image facing west into central shrine. Toward central shrine can enter through porch. This porch articulated between interior space and exterior space. Buddha image was placed almost equal space of central shrine. Within the interior space, adequate lighting and ventilation can get from porch.

Structural Aspects

It was mainly used bricks, masonry and stone reinforcements as materials. It was built with cloister vault over shrine and also used with barrel vault over porch.

Decorative Aspects

It was decorated with stucco mouldings as decorative elements.

In exterior decorations, it was used plain stucco mouldings at the main body and pediments and was also decorated gold at slightly domed roof and circular bell-shaped dome, conical spires and umbrella.

In interior decorations, it was decorated with ceramic mosaics at throne shape, back of Buddha image, over porch and central shrine and wallings.

8. The Developments and Changes In Architectural Aspects Of Stupas

Most of the Bagan ancient monuments were built during two and half centuries from 11th century A.D to 13th century A.D. But some of them were built before 11th century A.D such as Buhpaya, Ngakywenadaung, Paukpinyar and Htupalesutan Stupas.

Chronological Categorizations

Stupas can be categorized by the periods which are assumed to be built.

(i) Pre-Bagan Period (7th Cen. A.D - 10th Cen. A.D)

Buhpaya stupa

Ngakywenadaung stupa

Paukpinyar stupa

Htupalesutan stupa

(ii) King Anawrahta's Reign (1044 A.D - 1077 A.D)

Myinkabazedi stupa

Lawkananda stupa

Shwesandaw stupa

Shwezigon stupa

- (iii) King Sawlu's Reign (1077 A.D - 1084 A.D)

Inn pagoda stupa

- (iv) King Kyansittha's Reign (1084 A.D - 1113 A.D)

Min-o-chantha stupa

Stupa No. 1236 , Myinkaba

Myazedi stupa

Shwezedi stupa

- (v) King Alaungsithu's Reign (1113 A.D - 1160 A.D)

Pyathatshwegu stupa

- (vi) King Narapatisithu's Reign (1174 A.D - 1211 A.D)

Dhammayazika stupa

Sapada stupa

- (vii) King Htilominlo's Reign (1211 A.D - 1234 A.D)

Saytanagyi stupa

Soemingyi stupa

- (viii) King Narathihapate's Reign (1255 A.D - 1287 A.D)

Mingalazedi stupa

Stupa types can be classified as follow ;

- (i) Stupas with bulbous shape
- (ii) Stupas with octagonal basement
- (iii) Stupas with rectangular basement
- (iv) Stupas with circular basement
- (v) Stupas with pentagonal basement
- (vi) Sinhalese type Stupas.

(i) Stupas with Bulbous Shape

Before the reign of King Anawrahta, ancient monuments in Bagan were Buhpaya Stupa , Ngakywenadaung Stupa , Paukpinyar Stupa , Htupalesutan Stupa and other inner Stupas of encased pagodas. Those Pyu type pagodas were Stupas with bulbous shape.

The early type of Bagan ancient monuments are very similar to Bawbawgyi , Hpayama and Hpayagyi at Srikshetra.

Most of the Stupas with bulbous shape consist of the circular basements, lotus flowers lied between circular plinth and bulbous-shaped Stupa and plain conical spires. Ngakywenadaung Stupa, situated to the west of Thatbyinnyu Temple, was covered with green glazed brick. This Stupa is unique monument in Bagan.



Figure. Some examples of Bulbous shape stupas (Ngakywenadaung Stupa, left and Buhpaya Stupa, right)

(ii) Stupas with Octagonal Basement

Most of the Stupas with octagonal basement are built by King Anawrahta in the early 11th Century A.D such as Myinkabazedi Stupa, Lawkananda Stupa and Tuyintaung Stupa in Bagan.

Some of those type of Stupas are also built by King Sawlu who is the son of King Anawrahta such as Innhpaya Stupa near Dhammayangyi Temple. Innhpaya Stupa is a biggest Stupa with octagonal basement.

The prominent features of the Stupas with octagonal basement are surmounted with elongated bell-shaped dome crowned by conical spires. There is a waist band around the bellshaped dome decorated the frieze with ogre heads in stucco mouldings in those Stupas. Mostly it has three spreading terraces with octagonal sides and flight of steps. Some have at least one terrace with octagonal sides.

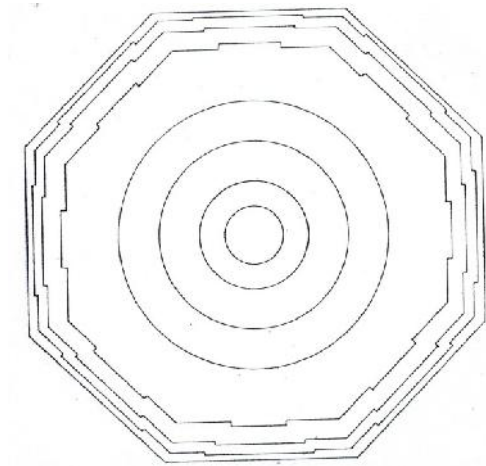


Figure. Plan shape of Octagonal Basement Stupa (Myinkabazedi Stupa)



Figure. An Example of Octagonal Basement Stupa (Lawkananda Stupa)

(iii) Stupas with Rectangular Basement

Those kind of Stupas can be seen in many places of Bagan. For example, Shwesandaw Stupa, Shwezigon Stupa, Mingalazedi Stupa, etc.

It consists of rectangular basement which have three spreading terraces and five spreading terraces. There are accessible terraces and inaccessible terraces in those Stupas. Accessible terraces have flight of steps on each side with corner stupas. Inaccessible terraces have no flight of steps to climb up on higher terraces with corner stupas and usually consist of housing standing Buddha images, seated Buddha images and figure of animals.

Some of those basements consist of so many corners in bricks and sandstones called Khonanchoe, recess fixed in glazed panels, cornices and crenellated parapets. Some terraces are decorated with glazed plaques and unglazed plaques depicting scenes from the previous lives of Buddha, 550 Jataka stories.

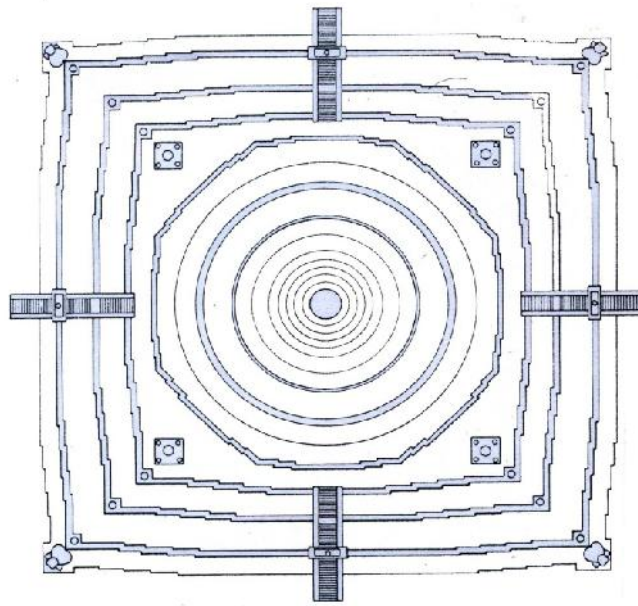


Figure. Plan shape of a Rectangular Basement Stupa (Shwezigon Stupa)



Figure. Some Examples of Rectangular Basement Stupas in Bagan (Shwezigon Stupa, Left and Shwesandaw Stupa, Right)

(iv) Stupas with Circular Basement

This kind of Stupa is very rare in Bagan. A Stupa with circular basement is Stupa No. 2146 which is situated to the north-west of Einyakyaung Ngamyethna Temple. Most of the Sinhalese type Stupas and Stupas with bulbous shape consist of the circular basements. The Stupas with circular basement are surmounted with bell-shaped dome crowned by conical spires.

(v) Stupas with Pentagonal Basements

There are seventeen pentagonal monuments in Bagan. Those kind of monuments consist of two types, pentagonal Temples and Stupas with pentagonal basement. Stupas with pentagonal basement are very few. There are only two Stupas with pentagonal basement in Bagan.

Those are Dhammayazika Stupa situated on the west side of west Phwasaw village, built by King Narapatisithu and a Stupa surmounted with Sinhalese type (Stupa No.1671) in the precinct of Mahabodhi Temple. Those Stupas consist of five sided bases, five corners and five angles which have 108° each.

According to inscriptions, the doners who built pentagonal monuments dedicated the representing of the five Buddhas of the present world circle who have already attained enlightenment, Kakusanhda, Konagamana, Kassapa, Gotama and including future Buddha, Maiteya. Dhammayazika Stupa is a biggest pentagonal monuments in Bagan. There are five shrine halls, housing for five seated Buddha images, decorated with mural paintings on the interior walls and stucco mouldings on the exterior walls.

A stupa surmounted with Sinhalese type in the enclosure wall of Mahabodhi Temple, consists of five sided base with five niches to place the five seated Buddha images around the basement of this Stupa. It has a pentagonal basement as well as a Sinhalese type stupa.

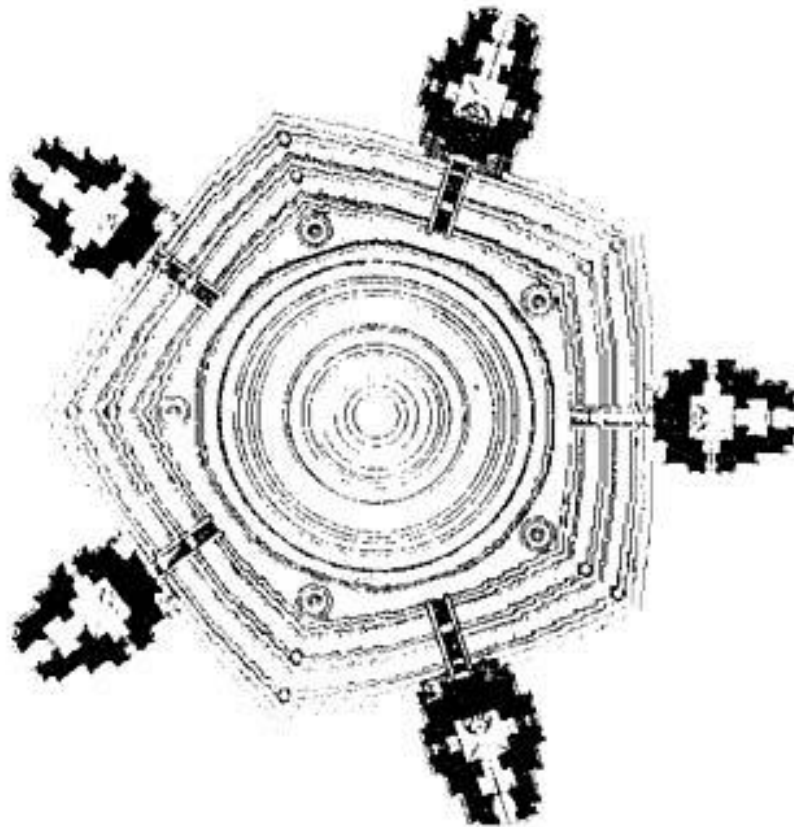


Figure. Plan shape of a Pentagonal Basement Stupa in Bagan (Dhammayazika Stupa)



Figure. An Example of Pentagonal Basement Stupa (Dhammayazika Stupa)

(vi) Sinhalese Type Stupas

At Bagan, from King Narapatisithu's reign onwards, if not before, the Sinhalese type Stupas were constructed after the model of Thuparama from Anuradhapura in Sri Lanka. For example, Sapada Stupa , Sapadaw Stupa , Saytanagyi Stupa, etc.

The prominent feature of Sinhalese type Stupa is relic chamber that being constructed between bell-shaped dome and conical spires. Some of the basement of Sinhalese types are Stupas with circular basement while some are Stupas with rectangular basement. Some of its basement are decorated with elephant heads and Kalasa pots alternately.

In Bagan, Saytanagyi Stupa situated on the southern end of Bagan cultural region, is a biggest Sinhalese type Stupa with the five terraces which are one circular terrace, one octagonal terrace and three square terraces. All of the terraces are inaccessible terrace which has no flight of steps on each side. One thirty nine elephant heads and one forty Kalasa pots on each side were decorated along the basement.

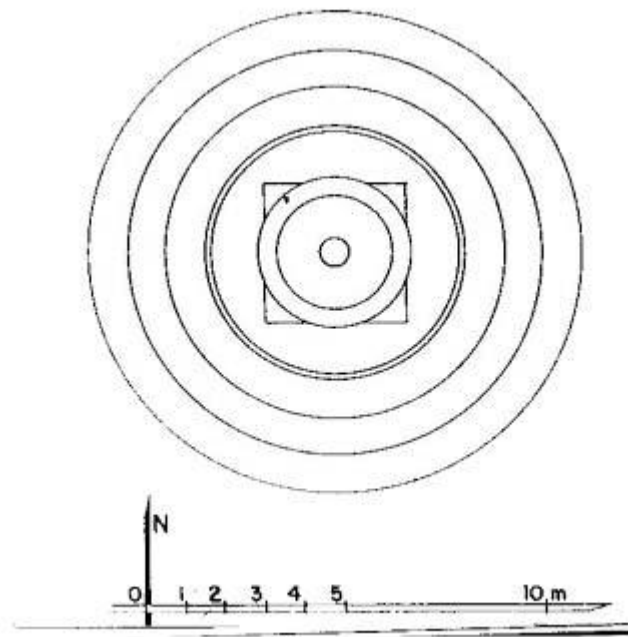


Figure. An Example of Plan Shape of Sinhalese Type Stupa in Bagan (Sapada Stupa)



Figure. Some Examples of Sinhalese Type Stupas in Bagan (Saytanagyi Stupa, Left and Sapada Stupa, Right)

Conclusions of the Stupa Development

On the whole, the chief parts of a Stupa are (i) Chattravali, (ii) Anda and (iii) Medhi. In the Sinhalese type Stupas, relic chamber is to be found between bell-shaped dome and conical spires.

Chattravali consists of the conical spires and the Atwat or metal crown. Anda is circular bell-shaped dome and Medhi is the spreading terraces at the bottom of the Stupas.

In the early period, Myinkabazedi Stupa donated by King Anawrahta, was built directly on the platform. It was seen that without spreading terraces although it has one octagonal terrace and one circular terrace. It has not consisted of medial stairways.

In Lawkananda Stupa, another donation of King Anawrahta, had the three octagonal terraces, two low 16-sided terraces and medial stairways but the terraces were not given priority. The height of the spreading terraces, the Medhi, is nearly equal to the height of the upper parts, the Anda and Chattravali.

In the Myinkabazedi Stupa and Lawkananda Stupa, there is seemed to be the bulbous form that gives priority of the upper parts which are the Anda and the Chattravali.

In the Shwesandaw Stupa, another donation of King Anawrahta, has five square terraces that are tall and steen terraces with medial stairways and two low octagonal terraces. In this Stupa, the Medhi is given priority and higher than the Anda and the Chattravali. Therefore, composition of the form is far removed from the early bulbous form and it can be seemed as conical form.

All of the above Stupas, they had not the corner Stupas, corner urns and corner amortizements, therefore they are clearly isolated.

Shwezigon Stupa is different from the Shwesandaw Stupa. Shwezigon Stupa which has corner Stupas, corner urns and corner amortizements, is the more massive type and thick circular mouldings run around the Chattravali.

Dhammayazika Stupa is surpassing example of the Bagan Stupas. According to cosmic metaphor and symbol of the five Buddhas, the geometrically guided lay-out is the finest expression of the Bagan. The five satellite temples with shrines which is set by placing the easternmost shrine directly on the north-south axis and attached to the plinth of the Stupa. Therefore, the Stupa is seemingly revolved and unified of the whole scheme. At the Shwezigon Stupa, the shrines are detached and set at the cardinal points from the base.

Mingalazedi Stupa was the last great Bagan monument and built in 1284 A.D by King Narathihapate. It resembles the Shwezigon Stupa but lies on a high platform which is ornamented with glazed plaques with stone pavement and four stairways.

There were altogether the Stupas that built in Bagan and the Dhammayazika Stupa is the zenith of Myanmar Religious Architecture.

9. Conclusions

On reviewing the study on architectural aspects of temples and stupas during the reign of King Narapatisithu, three main factors can be viewed as follows;

- (i) the reflections of the historical background in the reign of King Narapatisithu
- (ii) the special features and ideas of creative ability during the reign of study
- (iii) the developments and changes in architectural typology of temples and stupas at Bagan.

During the reign of King Narapatisithu who built the most monuments than the other reigns. And then, early Bagan monuments were built in the city and nearby. In the reign of King Narapatisithu, monuments were built the new places beyond the city. According to stone inscriptions, they were built at Myinkaba, Minnanthu, east and west Pwasaw especially towards the Tuyintaung. King Narapatisithu also built many temples and stupas in the other places such as Kyaukse, Monywa, Shwebo, Thayet, Taloke, Aneint, Kale, Kyankhin, Kanbalu, Sidoktaya, Kyanhnyat, Singu, Samoon, Sagaing and Amyint. It can imagine that King Narapa tisithu purposed to spread out his power in these places.

Although the architectural aspects in early Bagan were conserved, there were many inventiveness during the reign of study. They built the temples not only one or two storeys but also three and four storeys. After that, they built the temples and stupas on the platform which showed the distinctive features of the philosophy of Buddhism and their powers. And then, not only rectangular plan - shaped but also pentagonal and circular plan - shaped were built. Among them, the pentagonal plan - shaped was more required in skill for estimating, drawing and construction. In the decorative aspects, they also invented as the line drawing with symbolical of stylistic.

In the Bagan period, two and half centuries (Between the reign of King Anawrahta and Narathihapate), Bagan reached the zenith of its power. In this period, Myanmar Arts and Architecture passed through a golden age. In early Bagan period, they built mostly stupas and one storeyed temples with curvilinear roof. And then, they provided with perforated windows to admit light into the temples. In the later Bagan period, they built temples as high as possible with two or three or four storeys with flat terraces. During the reign of King Narapatisithu, the architectural aspects were changed and underdeveloped.

This research paper hopes to convey the architectural and technological achievements of Myanmar Religious Architecture that reached its peak during the reign of King Narapatisithu (1174 A.D -1211A.D).

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