

# Structural Aspects of Kūttampalam

Bindu Letha. K.T

Historian

Kannur university, Kerala.

Art and architecture is the master-piece of Indian culture from the very ancient times. To western people Indian art is flamboyant and very pleasurable. The deep awareness of structural design is also a characteristic feature of Indian art, both in modern and traditional forms. Therefore Indian art has a good position in the ideological, aesthetic, and religious framework of Indian civilization. In Perumal period a lot of temples were constructed. From the 10<sup>th</sup> century onwards we get clear evidence of *kūttampalams* also. Kerala Architecture has been influenced by both the Dravidian and Indian architectural concept. It is based on several texts as *Tantrasamucaya<sup>i</sup> Thacu-Śāstra*, *Manuṣyālaya-candrika<sup>ii</sup>*, *Śilpaśāstra<sup>iii</sup>* etc. *Kūttampalam* architecture mainly follows the instructions of Bharatamuni's *Nāṭyaśāstra*. But, basement was based on the instructions of *Silpaśāstra*. This paper looks in to the structural aspects of *kūttampalam* and the influence of *Nāṭyaśāstra* in construction. The paper also probe whether it is a keralite origin or not.

*Kūttampalam* is a semi – closed hall in its structural design. Its stage has been constructed as in square shape while it was a part of temple complex. But when its duty was separated from the temple complex its shape was turned into rectangular shape. This is for accommodating spectators also. Now it naturally takes the rectangular shape while constructing a *kūttampalam*. *Kūttampalam* construction is based on a general plan. A *kūttampalam* has three divisions namely; auditorium called *prekshagrih*, stage called *rangapīṭa* and dressing room called *nēpathya*. Each part has its own features and duties. The area in front of the stage is called auditorium. It is the arrangement for the audience. The middle square sized hall is created for the purpose of staging and it is known as the *rangapīṭa*. The last room is constructed for keeping *aṇiyalams* and make-up purposes and it is the *nēpathya*.

Auditorium is considered as the best place to watch and enjoy a performance. The auditorium has a flat surface. There is an important feature inside the auditorium. In some of the ancient auditoriums, we can see a raised level, in a few inches high, in front of the stage. This was reserved for Brāhmins. When years passed, the front row is reserved for Brāhmins, though the place was raised or not. According to some others, the raised level was for learned (Sanskrit knowing) audience, and the remaining space for others.

The area between the lamp, which is at the centre of the stage, and the drums tends to be the most frequently used acting area for performance. The space reserved for the actors in the temple theatres of Kerala is considerably smaller and different in shape as described in the *Nāṭyaśāstra*. Almost all stages of the temple theatres are raised approximately half the distance of the total length of the building. The Thrissur *Vadakkunnathan* Temple theatre is the only exceptional case. The underside of the roof in most theatres is ornamentally decorated with wood carvings or paintings. Due to the smoke from the oil lamps which illuminate the stages these rich carvings and painted figures are covered with a thick layer of soot. In any case the decorations are barely visible to the spectators and seem to have been meant to fulfil ritual purposes rather than to be admired during a performance. Anyhow this separation shows a division among the audience.

The stage, usually square or nearly square is a raised platform at the end. In the case of a few of the theatres, the surface of the stage is convex. Temples gave more care to maintain the appearance of the theatre. So, the surface of the stage is smooth and shiny to permit ease in dancing. It is placed as to face the deity, and the actor always performs facing the God. The oil lamp, which is the only means of illuminating a traditional performance, is located downstage centre. The stage also has a moulded hollow stone base, which is filled again like the auditorium, with earth and rubble and plastered with cow-dung in earlier times or mortared, but now cemented. On this stone base, in each corner, usually stands one pillar of turned wood and lacquered in bright red. The stage is highly functional and utterly simple. It is suitable for the presentation of Sāṅskṛit plays. A raised stage with two doors for entering and exiting, stools are used for sitting and a *citra-yavanika*, brought in by two persons is all included in the stage properties. Bows, arrows, and swords there are other elements using in stage while conducting a performance.

The dressing room, called *nepathya* is a small room adjacent to the real stage. Two doors connect it with the acting area. The door to the left is normally used for the entrance and the door to the right is used for the exit of actors. The size of the acting area is somewhat reduced by the presence of two large pot shaped drums, which is called *Mizāvu*, which lie in stands situated between and sometimes in front of the doors leading to the dressing room. The dressing room is a narrow, often as a rectangular room running breadthwise to the stage, sometimes constructed entirely of wood or has the upper half of the wood resting on brick walls with narrow grills for the air. The light in the dressing room in early times is provided by a bell-metal lamp during make up and costuming, but now it is electric bulb. The dressing room's floor is either lower than the stage, or on the same level as the auditorium floor.

*Kūttampalam* commonly follows a general pattern of construction. Its essential features are simplicity of shape and keeping the same degree in the creation of size. *Kūttampalam* also follows a unique indigenous character in its structural design. It is always constructed on the right side of the deity of the temple. It is worth mentioning that the aspect

ratio of 1:5 mentioned in *Nāṭyaśāstra* is not adopted in any of the *kūttampalam* in Kerala. However, the upper limit of the dimensions specified in *Nāṭyaśāstra* is not crossed anywhere. As regards the shape of enclosing the structure, shape of mountainous cave and double storied structure is not adopted anywhere. The stepped seating arrangement for audience in *Nāṭyaśāstra* and *Mattavarinis* in *Nāṭyaśāstra* of Bharata's stipulations are not followed here.<sup>iv</sup>

Almost nine structures survive in the temples of north and south central Kerala. Two are in an advanced state of ruin and several others border decay. All share common features but each has its own special characters. All the structures are rectangular in shape. But the one at *Chengannur* was oval shaped. Unfortunately, the superstructure of this theatre faced decay and only the stone pedestal of this remains now. A re-construction in the form of a model of this *kūttampalam* is preserved in the Thiruvananthapuram museum. The largest, most impressive, and frequently used *kūttampalam* is that of the famous Siva temple of Thrissur. Next, in size and importance is the *Iringalakuda* Temple theatre. It has an interior which can include approximately five hundred spectators, and it resembles the ideal rectangular theatre described in the *Nāṭyaśāstra*.

The structure of *Kūttampalam* consists of three main parts. They were *adhishtana* (socle), wall and the roof which is topped by three *kalasas* or *stupis*.<sup>v</sup> Basement of *kūttampalam* is made with granite stone. Upon this the trellis wall and pillars are fixed. Above the rows of these small sized pillars beams are resting. The roof is supported by these beams, which are resting on these pillars. On these also rest the slanting brackets which provide an additional support to the roof. These gracefully carved supports (brackets) are delicately designed or are plain, depending on the pattern followed in the entire *kūttampalam*.

Basement (socle) is an important element of any structural monument. This basement separates and elevates a monument from earth and gives a personality of its own. This is created with granite stones. In *kūttampalam* the basement is the same as of temples. The moulded heavy stone socle, on which stands the superstructure, is created by following *Śilpaśāstra*. Its width is created by depending on its size. It is filled with soil and rubble to form the auditorium floor, which, in earlier times must have been smeared with cow-dung, or mortared but now is cemented. The origin of basement can be seen in the Buddhist monuments of *Amaravati*. The use of basement in the secular architecture is also seen in Ajanta murals.<sup>vi</sup> With the advent of Buddhism these also finds in the Hindu Pallava temples at *Mamallapuram*.<sup>vii</sup> All these shows the influence of other cultures expressed in the *kūttampalam* architecture. But *kūttampalams* were made by the Kerala carpenters. So the owners who took over the control of its construction may be specialized in this architecture.

*Kūttāmpalams* include balustrades, which are followed by steps leading to the main door. A flight of four or five steps leads to the two main entrances of the auditorium and the front one is usually used by men and the opposite one, by women. There are two narrow entrances, usually at both of the short sides of the rectangular auditorium used by the actors before and during the performances. They were highly ornamental with its structural features.

Trellis wall is another important feature of *kūttāmpalam*. In Kerala architecture, wood is an important material used in construction. Availability of quality wood such as teak wood, mahogany etc. helped these types of construction. Nilambur forest is famous for its availability of teak wood. At that time, most of the houses were built with rich quantity of wood. Another particularity of wood is that it was so easy to make structural designs and at that time there were talented carpenters in Kerala. Even though old *illams*, *kovilakams*, temples etc were built in quality woods; wood was a perishable material. They used wood because of its easy availability at that time. At that time, temple lands were blessed with woods such as teak and other such items. There was no strict rule, which prohibited the cutting of trees. So they built these monuments in wood. Wood will produce a cool effect from heavy heat and wind. In *kūttāmpalam* the trellis-frames are arranged to help the passage of breeze inside. Likewise wood is giving more finishing in objects than any other material. Therefore, Kerala architecture chooses this material even though it is perishable. In almost all *kūttāmpalams* trellis wall is made in wood. So Kerala trellis wall model has no resemblance with any other cultures.

Another structural particularity lies in the pillars. Pillars of stage and auditorium are other particularities of *kūttāmpalam* structure. The stage pillars of *kūttāmpalams* also have same design in most cases. The two exceptional cases are seen in *Harippad* and *Guruvayur*. Pillar capitals of these *kūttāmpalams* have circular shape. These stage pillars of wood standing on a circular base, with pot-like rounded forms in diminishing sizes ending in capitals, and lacquered in brilliant red with thick black lines, support a roof with a beautiful carved ceiling of flower motifs and Gods and Goddess and *ashtadikpalakas*<sup>viii</sup> and *Brahma* in the centre. These stage-pillars are entirely different in design from the auditorium pillars. Their rounded smooth form helps the audience, sitting at different angles, to concentrate correctly on to the action on the stage. These pillars and its low roof of the stage further help to emphasize on the actor. In almost all *Kūttāmpalams*, the auditorium pillars have the same design. *Harippad*, *Guruvayur* and *Kottapadi Kūttāmpalams* are the exceptions, which are keeping square in plan. In small *Kūttāmpalams*, there are only two rows of pillars. The pillars are either entirely of wood or of stone and wood. But they always have a square stone base with a square plain shaft over which at times there is a fluted, ornamented shaft ending in capital. The capitals have small, medium or large sized pillars supporting the main beams. The rafters move downwards supported on the beams, which are resting on the pillars, and ending to support the eaves of the roof. On the back flat side of these rafters are fixed closely-laid planks over which are fitted by the copper

plates. In several cases, where the tiles are used, these planks have been replaced by horizontal battens placed on rafters.

The roof looks like a cave from outside because it almost covers its superstructure. All the rafters and the horizontal battens are held together in the entire building.

Ridged roof is another characteristic feature of *Kūttampalam* structure. Its size naturally depends on the size of the *Kūttampalam*, though the angle of 45° remains the same irrespective of its size. This particularity is based on the geographical features of Kerala. There are three types of roofs can be seen in *Kūttampalams*. First one is *gajamukha* (elephant head shape). Second one is *dvitala* (two storey and conical in shape) and third one is straight edged type. The first type of the stage roof slopes down from the top in a curve model and its edges has turned towards up. The second type can be seen in the *Vadakkunnathan Kūttampalam* and third type can be seen in *Guruvayur* and *Kottappadi* stages. In *Guruvayur* and *Haripad Kūttampalams*, the roofs have dormer windows. It helps the flow of light wind and light inside the *kūttampalam* without affecting the performance. These type of windows are the particularity of Kerala architecture. The ridge of the roof is completed in a triangular shape with a network of crossed bars (lattice), to allow the flow of light and air. The roof in either case is copper-plated and composed of small rectangular shaped pieces arranged in parallel lines or is tiled with decorative flat tiles. It slopes down steeply and covers up a major part of the superstructure.

Stage ceiling is another structural feature of *kūttampalam*. The ceiling of the *kūttampalam* stage includes four main beams supported by pillars, the space in between being filled up by a long, thin, flat piece of timber. In the centre of this is a square frame-work. In this, there are nine squares formed by two horizontal and two vertical strips of timber to hold them tightly. In each of these squares, *brahma* was ornate. Most of the *Kūttampalam* ceilings are adorned in this way. The origin of *ashtadikpalakas* (eight guardian deities) with *brahma* in the centre goes back to the *Nāṭyaśāstra* of Bharatamuni in which he describes the method of making the square and the significance of it.<sup>ix</sup> *Thalikakkutta*, the upper structure of the roof is the next important feature of *Kūttampalam* structure.

The entire ceiling in the auditorium is highly ornamental in contrast to the main structure. The play is for propitiating the God under whose benevolent and merciful gaze it is performed. So, for lending the necessary sanctity to the stage, its ceiling may have been carved with figurines of the eight guardian deities of eight directions, Gods and Goddesses. It is symbolizing the concept that, Bharatamuni had given the duties to various Gods of guarding the stage from the evil *asuras*. In any case the divine presence in symbolic form was considered necessarily during the presentation of the play. The stage ceiling, carved in all the *Kūttampalams*, are less ornate, while comparing with the other elements inside the theatre and, in many cases, it is quite severely plain. The breaking up of a ceiling's surface into several ornamental sections greatly, aims its acoustic quality. In the great height of the auditorium, there is a chance to lose the emotionally changed

voice of the actor. But for this roof, the stature of the actor himself would have been greatly minimized. This thought too, must surely have weighed with the creators of these *Kūttāmpalams*, who seem to have been aware of *Natyasastra*'s injection to the master builders of the theatres that sound must be preserved by taking various factors into account as the cave-like structure, which help to prevent the cross-winds that would disturb the sound, small windows which is not too large in a theatre etc. The acoustics in the *Kūttāmpalams* shows the excellence of builders and engineers of that time, where professional engineers and architects are absent, in mastering this and various other problems facing theatres in those ancient times.

From the above discussion, we have to conclude that *Kūttāmpalam*, is a theatre originated in Kerala based on Kerala culture and nature. Unfortunately due the absence of architectural texts, based on theatrical construction, in Kerala, *Kūttāmpalam* construction depended *Natyasastra*. It proves the excellence of Kerala architects and engineers, even if they are not the masters in technology. Above all it also proved that it was a pure Kerala origin and was not transplanted from north India.

<sup>i</sup> *Tantrasamuchaya*, is among the important architectural sciences which had a strong impact in Kerala architectural style. It was written by Puzhakkara Cennas Namboothiri. It deals with the temples rituals performed in most of the temples in Kerala.

<sup>ii</sup> *Manushyalaya Candrika* is another basic text of Kerala architecture. It was written by Thirumangalath Neelakandan Moose in the 16<sup>th</sup> century CE. It contains the details of the scientific principles of *Vastu* construction of temples.

<sup>iii</sup> *Silpa* means the arts and crafts. *Śāstra* means science. *Silpāśāstra* is the science of arts and crafts. The text deals with the methods of construction of a structure. This Sanskrit text refers the two names *silpin* and *silpini* which means male and female artists respectively.

<sup>iv</sup> Cheruvalli Narayanan Namboodiri (et. al.), *Documentation...*, *op. cit.*, pp. 22-23.

<sup>v</sup> Goverdhan Panchal, *Kuttampalam...*, *op. cit.*, p. 40

<sup>vi</sup> C. Sivaramamurti, *Amaravati Sculptures in the Madras Government Museum*, Bulletin of the Madras Govt. Museum, 1956, Plate: XXXIX, 2; LIX, 2; and LXI, 1. See also Goverdhan Panchal, *Kuttampalam...*, *op. cit.*, p. 40

<sup>vii</sup> *Ibid.*, p. 40

<sup>viii</sup> *Ashtadikpalakas* is a concept of Hindu mythology as eight deities who were ruling over the eight quarters of universe. *Indra, yama, Varuna, Kubera, Agni, Vayu, Īśāna, nirṛti* were considered as the eight deities.

<sup>ix</sup> M.M.Gosh, *Nāṭyaśāstra* (trans.), Calcutta, 1956, pp. 20-22