

Documentation of Timber Buildings in Sri Lanka - A Case Study

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It has been established that the roof structure of most of the ancient buildings of Sri Lanka had been timber. Paranavitana has observed that "Buddhist Architecture in the island particularly in the early period was essentially wood". Numerous literary evidences can be brought to prove this point. Inscriptional evidence, chronicles and the canonical literature are among them. According to Abayagiri Vihara Sanskrit inscription of the 9th century A.D. there had been villages allocated to expert carpenters who were involved in restoration work.

In addition to the roof structure, it is evident that wooden columns have been used which accounted for the numerous stone bases found in ancient sites. In places like Ritigala, it is quite possible that even the entire superstructure of residential buildings was held by a wooden base. Timber has been used as walls too in a number of instances.

Several attempts have been made to conjecture the wooden elements of some of the ancient buildings. One such building conjectured was the *vatadage* or the *thupaghara* built to cover a stupa of modest scale such as Thuparama. Paranavitana who first conjectured the *vatadage* of *Thuparama* was of the view that the upper portion had a domical roof made with "curved rafters". Accordingly "in some build-

ings as may be judged from representation of edifices in bas reliefs, the roof was domical in shape though of wooden structure. The shape was obtained by the use of curved rafters (*P. gopanasī*, Sin. Gonas) which were fitted to a boss at the summit of the roof, known as "*kannika*" in Pali and *kani-madala* in Sinhalese. Roland Silva has conjectured (see above) the same using the same principle but with an ordinary conical roof. This conjecture seems more practical in terms of building techniques.

Sri Lanka is fortunate to have timber elements of buildings preserved from the 14th century A.D. amidst all the political unrest and the external troubles that occurred during post Polonnaruva (12th C. A.D.) period. Although the grandeur and the scale of buildings of the surviving examples are different to that of Anuradhapura and Polonnaruwa periods, they represent a continuing tradition of religious buildings. In fact the timber had been considered as the major building material of this period popularly known as the Kandyan period of the history of Sri Lanka. Coomaraswamy has noted this:

"We have seen that Kandyan Architecture is one typically of wooden, not of stone construction. It should be remembered that the general use of wood for building domestic utensils is a sur-

vival from very early times, and that while on the Indian continent wood was very largely superseded by stone as a building material, in Ceylon the indigenous style remained to the last one of wooden architecture. It is therefore natural that much of the best Kandyan woodwork should be architectural and that it should derive a special charm from its architectural adaptation. The timbered hall and roof at their best are such as any people might be proud of comparable with the lesser sort of Gothic timbered hall and roof: the carved doors and windows are at once decorative and constructional; and every detail is of artistic and historic interest. The constant richness and variety of carving, and its close relation to the nature of the material are always pleasing; and we never find it so disposed as to interfere with the utility of beam or frame: it appears almost always as if it were an essential and necessary part of the constructional work.'

From the surviving examples several categories of the use of timber in different elements of buildings can be identified.

1. Timber frame used as a base to hold the entire building.
2. Timber used for superstructure, i.e. columns holding the roof.
3. Timber used for the entire roof structure in both the above types as well as of the buildings where superstructure is of masonry or wattle and daub.
4. Timber used for doors and windows and other details such as railings.

1. Timber frame used as a base to hold the entire building.

One of the distinct building types surviving from this period are image houses of modest scale popularly known as '*tampita vihara*' or the temple on

pillars. In addition, there are several rest halls built on the same principles. The fundamental principle of these buildings is that the entire superstructure is rested on a wooden frame. The wooden frame is rested on rock boulders (fig. 2), short (fig. 3) or tall (fig. 4) stone pillars.

Where they have used tall pillars the ground floor is utilized for ecclesiastical activities. On the wooden frame rested on boulders or pillars, wooden planks are placed on top of which the small image house with one entrance has been built.

2. Timber used for superstructure, i.e. columns holding the roof.

Another surviving building type is the '*mandapa*' holding the entire roof. Some of the well known examples are the audience hall built for the kings of Kandy known as "*Magul Maduwa*" and the 14th century *devale* at Embakke (fig. 5).

As Lewis (1880) observes almost all main elements of this well proportioned building are turned out of timber.

'The audience hall of the kings... consists of a high pitched roof supported by four rows of wooden pillars arranged so as to form a nave with its aisles, supported on a stone platform and without walls, the building being open on all sides. The pillars..... support heavy beams and a king-post roof. The wall plates are elaborately carved and support carved terminals. The roof projects considerably over the pillars. The slope of the roof over the aisles is at a less acute angle than that of the roof over the main part of the building.'

Timber columns are also used to rest the projecting roof to form verandahs in many traditional buildings. Columns used in these buildings are carved with

traditional motifs.

3. Timber used for the entire roof structure in both the above types as well as of the buildings where super-structure is of masonry or wattle and daub.

In both the above building types as well as in some of the surviving examples of old buildings of masonry structures, the entire roof frame is made out of timber with flat tiles of terracotta on the roof cladding. Two forms of the roof can be identified. One with an ordinary hipped roof and the other with a double sloped hipped roof. In the latter, the frame provides a secondary horizontal frame to make the double slopes possible. One distinct feature of both types are the use of horizontal beams enabling the extension of the roof well beyond the outer edge of the building so that wider eaves are built. Broad eaves are essential for the protection from elements of weather as well as for aesthetic reasons. Edges of these beams are richly carved and decorated. Wooden joinery used in the fabrication of the roof are very sophisticated.

4. Timber used for doors and windows and other details such as railings.

Another distinct feature of the surviving examples of wooden buildings are the decorative doors and windows and other elements. In many instances the wooden elements such as ceiling and columns, are painted with traditional motifs.

Owing to these intricate and sophisticated details, it has been a more than ordinary task to document them for the purpose of understanding then as well as for conservation. Drawings presented here are from one such exercise, done by the trainee technical officers of the Department of Archaeology in 1990.

This small image house built during last century of 11x7 m. is located at Dambadeniya about 40 miles to the north of Colombo. The walls are made out of wattle and daub but from the wall plate upwards, the entire roof frame was made out of timber and the details were well preserved although the timber had perished to a great extent. The roof was covered with clay tiles, eave tiles and some of the timber elements and the walls of the building had been painted. Although the size of the building was modest, the richness of the details prove the importance of careful documentation of timber buildings.

References

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