

Wooden Buildings of Sri Lanka*

Roland Silva

The tradition of wood construction in Sri Lanka can be traced to pre and proto historic periods. These periods of history record an International phase where the post holes of wattle-and-daub constructions record the earliest phases of habitation in most countries, specifically where cave shelters were scarce. Even in cave shelters the front facade consisted of wattle-and-daub partitions to enclose such spaces with wooden doorways and window openings.

Continuing this tradition into the historic period of the 6th and 5th centuries B.C. in Sri Lanka, we find, together with the dawn of the Brahmi alphabet, a type of round structure of 12 to 15 feet in diameter where the post holes clearly identify the inner space. Such details are being unearthed in the past two or three years at the archaeological levels of the 6th and 5th centuries B.C. within the ancient city of Anuradhapura.

In a follow up of these wood-supported structures, we see in the 4th century B.C. city walls of Anuradhapura, an architectural style where total tree trunks had been used to fabricate the gate-house and other pavilions along the 18 feet wide city walls of burnt bricks. Such parallels have also been found in the ancient city of Pataliputra along the Gangetic plain of India. This tradition has continued

through the ages and remnants of this style appear even in the brick buildings of the 12th century A.D. This concept of timber posts has, however, reached a state of sophistication in some of the palace structures of the 12th century where they have been made square or even eight sided, but still is buried in the brick walls of the edifices.

Despite the continuation of a wattle-and-daub concept in a sophisticated form as listed above, we see in wooden structures dating back to the 3rd century B.C., a type of sophistication where the post and beam style has been exploited to its finest details. The Lovamahapaya of the 3rd century B.C., as erected in the Mahavihara of Anuradhapura, still retains the stone columns of the ground floor at a height of 18 feet. The nine storeys of this structure, apart from its ground floor, were all built of dressed timber where beams rested on the massive stone pillars and extended out into a wide eaves projection. The overall length and breadth of this square building was approximately 250 feet. This nine storeyed structure gradually receded by one bay with each storey, until the pinnacle rested on the square plan of the uppermost roof in the style of "Kutaghara" where all rafters reach a wooden boss or "Kuta". This 3rd century B.C. structure has been con-
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tured by us drawing the evidence from the archaeological remains and a complete description of the building as given in the 5th and 6th century documents known as the Dipavamsa and the Mahavamsa. The illustration given here is our conjecture according to the information gathered so far. The roofs were covered with bronze tiles which have been found at the site and, the edifice described therefore as the Brazen Palace of the Lovamahapaya. The wooden rafters of this edifice have also been unearthed as charred material as it was burnt down many times. The dates collected on such evidence confirmed the historical records. The rafters as seen from the remains had been of the talipot palm.

Another type of wooden building that draws our attention is that of the "Vatadage" or the Rotunda type that sheltered smaller stupas of approximately 40 feet in height. These round structures still retain the circular sets of columns that supported the timber roof. Every set of circular columns supported upon its capitals, a set of timber beams that was interlocked to form a perfect timber ring beam (Davavalla). The innermost ring supported a steep angled set of rafters which elbowed against the uppermost timber ring and were held fast at its pinnacle by a timber boss (Kanimadala) that rested well above the pinnacle of the stupa within. The rest of the rafters was at a shallower angle radiating out in line with the uppermost set and filling in the wider gaps where necessary and spanning from one set of timber ring beams to the other. There was a splay on the roof at critical intervals to provide clear storey lighting for the interior, specially over the brick wall of the inner chamber. The outer podium had an

open verandah and free space beyond for circumambulation. The inner shrine of the stupa had four entrances and Buddha images facing each doorway. Offerings by pious pilgrims were placed on flower altars set between the Buddha images. The structural details of the wooden roof at the level of the ring beams and at the boss are given in the illustration. At the same time, the traditional construction techniques for square-peaked roofs are also indicated in another illustration. A subsequent growth of this roof style which changed from a circular form that originated in the 2nd century B.C. and was abandoned around the 12th or 14th century A.D., has been picked up in a square form from the 12th century and after. These roofs also covered a stupa form which is modest and smaller. However, the roof details and the radiating rafters are clearly seen in the examples illustrated.

We would like to introduce the audience to yet another type of simple but unusual wooden roof style. These wooden buildings meant for the Bo-tree shrines were called "Bodhigharas". They were either square or circular. The central object of worship was the sacred Bo-tree often planted in a "bonsai" form within stone masonry in a large flower pot. The earliest of these date from around the 5th or 6th century A.D. The wooden roof of the square form was simple where the inner square of the set of columns remain unroofed rather like the opening in the Pantheon. The roof beams of the inner set of columns held the upper ends of the rafters to shelter the area beyond and splayed in the four directions using radial rafters at the four corners. The circular structures were similar and they extended from the inner circle of col-

umns to the outer circle of columns each of which retained a ring beam as seen in the illustration.

Yet another type of interesting wooden construction was what is named as "Tampita". These image shrines that were in vogue from the 8th century A.D. and after, consisted of a series of timber columns which were either above the head level or in the form of short stumps. The stone pillars were meant to protect the timber that was placed above from white-ant attack and resting upon this set of beams was an image shrine. The inner cell of the shrine was enclosed with a wattle-and-daub structure that had mural paintings covering the inside and outside. These retain an outer verandah for purposes of circumambulation as well as protection for the painted mural wall. The roof rested on firm pillars extending from the floor of the shrine, while the screen walls were of wattle-and-daub. The roof had radiating rafters with a pinnacle sitting over the central wooden boss. The upper roof was generally steeper than the lower half. The roof was covered with flat tiles of clay. These elegant shrines set out in a tropical garden express a character of a pleasant bird cage of human dimensions as seen in the illustration.

Another fine example of wooden architecture that we wish to present from Sri Lanka is the old bridge of which we have only one left in the present day. We were fortunate to be able to conserve this in 1960. It spans two cliffs and leads out of a temple that has Brahmi inscriptions of the 1st century B.C. although the bridge in its present form could be from the 14th or 15th century A.D. The bridge was meant for pedestrians and animals only, as the

bridge is approached by a few steps. Four large beams span the two cliffs with a single support at the centre of the stream. The support at the centre is yet another cross-beam that rests on two wooden pillars fixed to an outcrop of rock in the middle of the stream and well above the water level. The full span of the bridge is approximately 90 feet. The roof cover for the bridge is mainly to protect the wooden beams which constitute the bridge proper and is also used as an area of shelter for passers-by in times of rain or strong sun shine. The radiating rafters and the cross laths retain terracotta tiles placed in elegant patterns using pointed and rectangular tiles under two terracotta pinnacles upon this elegant structure as illustrated.

The final presentation consists of the Ambekke Devale of the 14th century A.D. This retains the peak of the best wood carvings and craftsmanship in Sri Lanka. This shrine dedicated to the Hindu deity Lord Kataragama also retains a Buddhist shrine and a Bo-tree for worship. It is positioned at the head of the main street of the Ambekke village with the religious repository positioned at the furthest end of the same highway. The houses of the villagers line up this main avenue and the fields that belonged to the Devale are distributed among the serfs that lined up the main street as allotments for specific services to be rendered to the shrine. The inner component of the shrine that retains the image and the weapons which are the symbols of office are enclosed by stone walls. The upper shrine above the image rests on stone columns, but are made of timber and wattle-and-daub walls. The elegant features of wooden construction in this shrine are the wooden details of the

roof and the open drumming pavilion that extends substantially in the front. Each of the columns is intricately carved as shown in the illustration. The pillar capitals are fine and most ornate. These consist of the cross-supports upon which the numerous beams are rested. The beam ends are elegantly formed in keeping with period motifs. The extended eaves retain rafter carvings of exceptional quality. The final score of the wood carver's finesse is tested with the wooden thread that ties and fixes the rafter ends of the rectangular roof of radiating rafters and carved details, to correspond to a square form. The 26 radiating rafters of this shrine at one pinnacle of the rectangular roof is, indeed, the work of a master craftsman which expresses the high calibre of wooden workmanship.

The few examples of wooden architecture from Sri Lanka, provide some features of its historical development and aesthetic achievements. The constructional capacity of Sri Lankan wood craftsmen to reach the heights of a nine storeyed building at 162 feet above ground level in the 3rd century B.C. is indeed spectacular. Such an edifice showing nine tiers of reducing areas and cascading roofs of bronze tiles would truly have been a spectacle worthy of human endeavour. At the same time, the round buildings of the 2nd century A.D. and after, that sheltered the painted stupas and carried a conical roof with metal tiles that were sometimes gilded is once again an edifice worthy of understanding and appreciation. The structural competence of retaining a conical form without a centre post and spanning 40 to 50 feet would have made the edifice both elegant and spectacular. The novelty of a shrine where the object of worship was

a natural plant, a sacred Bo-tree, and with a roof structure that is either circular or square surrounding a shrine is unique in design and concept. The fine bridges of timber with lace-like railings and covered with a terracotta roof across the cascade of falling waters can be a spectacle that recalls the mountain terrain of an equatorial nature fort.

These examples of human enterprise demonstrate the manner in which the mind of man is guided and disciplined to overcome the limitations of the environment. Using his ingenuity, man has created designs and structures which give expression to the inherent qualities of timber whilst at the same time solving the problems faced in fulfilling his need for shelter. As the sound of the wood- wind resounds in the air, we could hardly conclude without referring to a recent father of architecture from the New World when Frank Lloyd Wright said, "Bring out the nature of wood..... for they by nature are both friendly and beautiful. No work of art could be a matter of fine art, if these truly natural characteristics are either ignored or neglected".

* A Paper presented to the Fifth Wooden Conservation Course in Oslo, 1 June 1992.