

Problems Faced With Conservation of Decorated Timber in Sri Lanka

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Introduction:

Timber was one of the earliest and most popular building materials in the history of civilization. In early times, timber would have been used only in log form; but with the invention of tools logs were converted to useful forms and shapes. Axe, adze, chisel and knife were the earliest recorded tools that have been used for this purpose. Timber is a comparatively soft material to work with and was used as a media for artistic expression.

Although timber had many good qualities such as availability, strength, flexibility, etc....., it had other limitations; timber was subjected to fast decay due to environmental conditions and natural causes, and was subjected to attack by many insects; it was also destroyed by fire. Therefore the survival power of timber monuments constructed during early periods was limited. In Sri Lankan architecture, timber was used in both raw and converted form. In addition to timber being used for structural purposes a sense of aesthetics was manifested in by carving and moulding the components in different forms, by repetitive use of timber members in a rhythmic pattern and also by decorating the external surface of timber using other materials in combination.

In conservation of structural timber

the following important considerations have to be made; behaviour in dimensions and texture. The restrictions imposed in considering the above factors in a normal timber building are not complicated as in conservation of decorated timber. In such cases the degree of decoration and the extent of deterioration of the timber in the monument will make conservation more difficult, complex and complicated because one has to preserve the authenticity of the decorative art work while stabilizing the structure to enable it to regain its strength.

In renovation of timber buildings the decayed members are generally replaced by new timber components, but invariably most of the timber components are carved or decorated. Some times decorated timber components of buildings that were demolished or had collapsed were re-used in new constructions or in other renovations often in a modified form. This practice was evident in many of the timber monuments found in Sri Lanka. When a monument was in use for a long period, it may have undergone many renovations, modifications and sometimes even the original use would have changed. In addition to the technical problems faced with timber monuments these practices have contributed to the complications in understanding and

conservation of the monuments.

Analysis and understanding Historical Periods of production

Even though timber was used in decorative form in Sri Lankan architecture for a long period of history, the earliest timber buildings available today were constructed during the Gampola Period i. e. 14th century A.D. Some timber sculptures and architectural remains of early the historic periods of Anuradhapura and Polonnaruwa were also found. Timber architecture produced during the time of the Gampola kings was of a special quality with well decorated and carved timber components. There was no doubt that these buildings that were located in the District of Kandy has influenced the timber architecture of the Kandyan Kingdom that ended in the early 19th century. It is quite evident that timber buildings of the above two periods were the last two important links of the timber architectural tradition of the Sinhalese. It was found that even after the British occupation the decorated timber architectural tradition was continued in buildings and as a result decorated timber architectural monuments were mostly found in the District of Kandy.

With the establishment of urbanized Dutch settlements in the maritime region during the 16th to 18th centuries a new type of architectural style was evolved which was described as a combined product of the architectural discipline introduced by the Dutch and the local architecture found in the region. The detailing in timber decorations was different in each district due to the different cultural backgrounds of the local craftsmen. Most of the timber work found at Kalpitiya, Jaffna, Trincomalee and Batticaloa exhibited a Hindu architectural style, detailing and

proportions with a remarkable difference from the detailing and decorations found in the western and southern regions. This Dutch-flavoured new style of Sri Lankan - Dutch architecture became popular in the country and was continued in the British period up to the last decades of the 19th century.

The use of decorated timber was common during the British period and this popularity gave a different expression to British Colonial architecture in Sri Lanka. Examples of such Architecture were direct copies of European architectural styles and also interpretations of decorated cast iron work in timber in Sri Lanka buildings. As during this period the architects employed were either British or British trained architecture was mostly copies from Europe. When Sri Lankans constructed their buildings they modified and adopted colonial architecture using Sinhalese decorated timber work and traditional craftsmanship as was apparent in domestic architecture found along the coastal region from Moratuwa up to Matara in the South.

It is important to identify the problems connected with the ownership and the use of these buildings. Most of the important timber monuments in the Kandyan areas were declared as protected monuments, but only a few come directly under the Department of Archaeology. The rest are owned, used and maintained by religious institutions or private individuals. Some of the timber monuments owned by the Government are being used as Government offices and maintained by the Department of Buildings. In general the owners do not consult the Department of Archaeology regarding maintenance and alterations. Those are being repaired and are treated as other government

buildings. Therefore the possibility of damage is likely because the craftsmen employed by the Department of Buildings are not trained for conservation work. When private owners take up renovation, their aim is to make the old building look new and modern to suit the modern generation. Therefore one can visualize what the consequences might be. These are common mistakes due to ignorance. If the owners can be educated and advised by the Department of Archaeology, or by scholars it is possible to avoid destruction of timber cultural property. This remedy is applicable not only to religious monuments but also to private buildings like houses. It was noticed that when the ownership of old buildings changed the new owners renovated them to give them a modern look by adding new materials and elements and also by destroying ancient art work due to the lack of skilled craftsmen and the high cost of conservation work.

Techniques used in decorating timber.

In traditional Sinhalese architecture, timber was basically used as a decorated element and also as a base for decorative work. It was found that these decorative techniques were used both in structural and non-structural members or components in the buildings. The carvings in timber were found in moulded form, in bas relief, in full relief and turned on lath. In most of the structural timber the decorated carvings were left un-painted. In traditional architecture, it was found that the following methods were employed to decorate the timber components by using another material.

- a. Painting
- b. Lac-work
- c. Inlay with metal
- d. Inlay with carved ivory

- e. Inlay with different coloured timber
- f. Pasting decorated paper
- g. Plaster moulded and painted
- h. Gilding

Painted timber:

Painting was used as a decorative media in both structural and non-structural timber. The nature of painting was such that it was decorative and protective. In the Sinhalese tradition it was mostly decorative. Single colour application on plain surfaces was not common in the early tradition. In the plain timber surfaces like ceiling, door and window sashes etc. the surface was decorated with many traditional designs, but with the colonial influence the practice was modified to decorate door and window panels with plain colours. Sometimes two colours were used to demarcate the different surface levels of panels and frames. In many instances one colour decoration was found as a later development but had not stopped on plain surfaces. It had extended even to finely carved timber that was not intended to be coloured in the original design. The common practice was that the timber carvings in columns and brackets, beams and rafters were not painted but all ceilings and decorative icons were invariably painted. In the Sinhalese tradition, before any painting was done on a refined carved decoration or icon an evenly thin layer of kaolin mixed with vegetable glue was applied as a primer. If the carvings or sculpture was not refined as found in the Kandyan period, the refinement was obtained by moulding the rough carving with the same substance, with clay or lime plaster and finally painted to give details, features and refinements.

The process of painting or the method of application differed according to the type of building and the technological

usage in the period. Six basic methods of applying colour pigments were noticed in Sri Lankan decorated timber.

- a. After preparing the timber surface it was directly painted over with white or coloured pigments using drying oil and vegetable gums as binding media and finished with one or more layers. In some cases it was found there were more than forty layers of different coloured paints used to decorate the timber and this was helpful in understanding the colour usage of different periods.
- b. Sometimes before applying a pigment layer the timber surface was prepared by using a primer. The commonly used white primer was prepared by mixing white kaolin, water and a vegetable gum extracted from the wood-apple tree (*Feronia Elephantum*). This primer was popular during the 18th and 19th centuries. Technically it was the preparation of a ground for painting pictures. In moulded or sculptured timber the sculpture was refashioned and refined by using a plaster layer of finely ground clay and sand mixed with rice water. The surface was then covered with a layer of Kaolin to make it very smooth and then a coat of "*Maturata Makulu*" (Magnosite) before applying the pigment layer. In many places lime plaster prepared with finely ground sand and well-slaked lime was also used as a ground with a final coat of lime.
- c. The pigment layer that was prepared as above was finished with a protective coat of Varnish. This varnish was prepared by mixing "Dorana" oil (*Dipterocarpus Glandulosus*) and an imported resin (*rata dummala*) or powdered clean "*Dummala*" (resin

dug out from trees that were buried in peat or mud for a few thousand years) and boiled for half an hour or more and then allowed to cool before it was ready for use. The varnish so prepared smells strongly of turpentine and dries quickly and leaves a gloss surface. A superior method of varnishing small wooden articles was to cover the painting with a thin coat of carefully cleaned and stained lac (*Keppettiya Lakada*), applied with heat.

- d. In some instances the pigment layer was directly applied on the timber surface and protected with a coat of varnish.
- e. During the early part of the 20th century only varnish was used on smoother timber surfaces both carved and plain as a decorative and a protective coat exposing the natural grain of the timber.
- f. Some of the decorated timber ceilings, constructed during 14th to 18th centuries exhibited a different type of ground preparation. On to the rough support that is the timber ceiling, a hand woven cotton fabric was pasted with vegetable gum and covered with a thin coat of Kaolin. Paintings were executed on this thin surface and a coat of protective varnish applied. Sometimes no varnish was applied. This method helped the plaster layer to withstand the movements in timber due to any change in humidity.

Subjects of the Paintings

It is obvious that the main purpose of painting timber surfaces in buildings is to decorate. Protection of timber was also considered important. In religious and other important buildings all timber surfaces were decorated with floral and traditional motives, icons, portraits,

different episodes selected from religious literature and national history. It is fortunate that the literary tradition in the country was such that detailed descriptions of the iconography of deities had been documented. These descriptions are very important for the conservators to understand the subjects of the paintings before any conservation work is carried out.

Lac Work:

The Lac-work is mostly found in the District of Kandy and carried out by traditional craftsmen. They used two methods, the wood turning method and the hot application of lac. Lac used in Sri Lanka was a product of two species of the lac insect. One is found on several trees, among which are the keppitiya (*Croton Aromaticus*), Kon (*Schlerisheria Trijuga*) and Hingura (*Acacia Caesia*). The other species (*Tachardia Conchifereta*) is called "Talakiriya Lakada" and is found on an Euphorbaceous Plant called Telakiriya (*Excaecaria Agallocha*). This is a rarer species, but produces lac of a brighter and clearer quality. The lac is used for the decoration of a large variety of articles made out of wood such as handles and staffs, timber columns, window mullions, balustrades, book covers, panels, furniture etc. The colours traditionally used were only red, yellow, green and black.

Inlay with metal:

Metal was used in decorating timber components in buildings, especially doors, windows and furniture. The methods used for decoration were of two kinds. One indirect method was that all iron - mongery, nail heads and reverts were highly decorated, ornamented and carved. The other method used was to cover the timber frames and panels by fixing finely

decorated silver, bronze or iron sheets on the surface either enclosing these fully or as ornamented panels. Some of the metal items fixed on timber work were decorated by using another metal ie. by doing decorative inlay work on iron and brass using silver and copper and by gilding the bronze articles etc.

Ivory and Bronze:

Ivory was one of the most special materials used in decorating main doorways and timber furniture. Ivory has always been a comparatively rare and costly material. The craft of ivory carving and turning was a highly refined art in Sri Lanka. The ivory carver is usually an all - round craftsman of the highest rank. Ivory panels and plaques that were carved with floral patterns, geometric patterns and icons were fixed on to the channels and grooves made to house these decorative panels and finally nailed down using ivory or bronze nails. Some of the special, decorated ivory carvings fixed on the door frames in the temple of the Sacred Toothe Relic and many other Kandyan temples were found to have been removed by tourists as souvenirs a few decades ago.

Inlay of coloured timber:

The tradition of decorating timber by using different coloured timber to give geometric and floral patterns was followed in the door and window sashes and furniture. Ebony was mostly used in the case of in - laying because of - its contrasting colour. Ivory was also used with ebony to obtain black and white patterns on timber. It was found that this decorative system was mostly popular in the maritime region.

Gilding:

In the early Sri Lankan tradition gilding was done on metal, stone, stucco and timber. But the early samples found

today are only on gilded metal. Gilding on timber was not found during the Kandyan period. The tradition of gilding timber statues and timber frames was very common in the maritime region being introduced by the European colonists. Jesuit priests were responsible for introducing timber gilding in Catholic churches. Before the application of fresh gold leaves the surface was carefully polished and three coats of primer made out of Zinc White, Linseed oil and Turpentine were applied and allowed to dry in room temperature for about a day before the application of the second coat of yellow paint prepared by mixing Yellow Ochre and Copal Varnish to the earlier mixture. Gold leaves were pasted onto the sticky surface after allowing the paint to dry for about half a day. This application was done with the help of a smooth brush and a silk cotton pad.

In decorated timber which constitutes cultural property, one may find various types of timber components used to perform different functions under different environmental conditions. Most of the larger components were performing structural functions and the smaller components were mostly movable or had decorative functions. The decorative or the aesthetic function in wooden components was invariably secondary to considerations structural and financial. In normal renovation in timber buildings, most of the well-decorated parts are looked after but there was no hesitation in replacing components with minor decorations using new or modified members.

Conservation

The conservation of timber monuments, especially decorated wooden cultural property, has faced many problems which are of a multifaceted nature.

In this process it was necessary to identify these problems, understand these properly and take the most appropriate path in order to conserve them for the future.

Materials in Conservation

The use of timber as a popular material for construction and for decorative art work has developed a great awareness of its behaviour, durability, workability, performance, availability and drawbacks. This awareness directed the craftsmen in selecting the type and size of timber and the methodology in using it for different purposes. Therefore in conserving timber monuments, an awareness of these traditions practised during different historic periods and places of production is of utmost importance. Present day science can easily help in identifying the type of timber used in structural and decorative work, causes of deterioration and the extent of deterioration but the difficult task is to understand the socio-cultural beliefs, and the traditional practices that were employed in the production of these decorative arts of timber. This is very important in order to avoid these art works from becoming dead museum objects.

Some varieties of timber used in decorative work were selected for easy workmanship and durability of the refined carving, example being Gamalu (*Pterocarpas Marsupium*) and Halmilla (*Berrya Amonilla*). These two varieties were popular during the Kandyan period and commonly used for decorated structural columns. But today these timber varieties are scarcely to be found. The conservation work carried out on the Council Chamber of the Kandyan Kings, an open hall with 64 exquisitely carved columns, was delayed for a long period due to the dif-

difficulties faced in finding the correct original variety of timber to replace the lost parts in order to ensure absolute compatibility in matching the decorated timber. In replacing the lost parts the compatibility of the texture, similar behaviour with moisture, changes in colour etc. were considered very important.

Among the methods used in decorating timber, painting was the most popular method seen in Sri Lankan Architecture and Crafts. Till recent times all pigments and paints were traditionally made using local raw materials, water based with vegetable gums used as a binding medium. Because of easy availability, oil based synthetic paints are used by the modern painters. Most of these decorated buildings are being used, and therefore periodically repainted and the drawings renewed for better appearance. It has now become necessary to carry out a better pictorial reintegration in addition to consolidation and cleaning, for which experimentation is being carried out to re-utilize the traditional pigments and technology in conservation of painted timber.

Most of the timber doorways of buildings in the Kandyan period especially in image houses, were inlaid with exquisitely carved ivory panels. Even though the design samples were available to understand the design for purposes of conservation the in-fill was hardly possible due to non availability of the required quantity and size, in addition to the very high cost of these materials. In some work, bone has been used instead of ivory and deterioration was found to be much more in the case of bone.

Craftsmen and Their Workmanship

All decorated timber monuments and

other timber-based cultural property were products of excellent craftsmanship that was promoted by the craftsmen's traditions, their commitment, devotion and capabilities. The following craftsmen were invariably involved and contributed to the production of decorated timber products: carpenter, painter, timber carver, ivory carver, metal carver and black smith. Today most of these skills have deteriorated and even if are available, are very expensive and unreliable. It was found that in the conservation of decorated wooden cultural property that is currently in use, the consolidation carried out by the laboratory conservator was visually unsatisfactory and therefore it was necessary to employ craftsmen skilled in in-fill and reintegration capable of reproducing quality equal to the old.

Required Personnel and Training

With the past experience, it was emphasized that for proper conservation of these valuable works of art it was necessary to train three categories of people to handle the work, namely; (a) Art historians and researchers in traditional technology (b) Conservators (c) Craftsmen. The services and contribution of the category (a) were required to understand the contents, materials, methods of production, their performance with the time and the environment. These experts and researchers were basically needed to study and understand the monuments and advise on historical, aesthetic and scientific matters regarding conservation. These requirements appear to be similar to those any other cultural property. These studies should be conducted by the institutions directly responsible for training conservation personnel. Training needs to be carried out with

the help of international institutions involved in the conservation effort. The areas of study that needs to be carried out in depth regarding decorated timber is very much more than what is being handled. The laboratory facilities, appropriate personnel and the financial support required for these studies are not considered the highest priority in developing countries like Sri Lanka where other problems are much more acute.

The conservators or the technical personnel who are directly handling these art treasures are the next category of personnel required to be trained and engaged in conservation of decorated timber. In a normal training procedure conservation technicians are being trained in specialized areas such as architectural conservation and other areas like paper, stained glass, furniture etc. The conservators who handle decorated timber need to be reasonably trained and made aware of other disciplines other than their own area of specialization. It is felt that this is required, because in practice, when one conservator is assigned a job he handles all aspects of conservation needed for that exercise even though theoretically it should be an inter disciplinary team work of many specialists. Some times this has happened due to the over confidence of the conservator when the quantum of work related to other disciplines was smaller than the conservators own specialty. In order to avoid mishandling and leaving out areas related to other disciplines it may be necessary to train an adequate number of conservators specialized in different disciplines, making it possible to attend to problems individually.

The third category of personnel required are the craftsmen trained in dif-

ferent skills. Different crafts in Sri Lanka are still handled by the members of the traditional families who have been continuing their craft for generations. They still have the traditional methodology and skills that they learned from their fathers, but have not however practiced and continued them with the same spirit or developed their skills as in earlier generations. Most of them have lost the proud traditions of these crafts and work today for financial gains only. Many efforts are being made by the Government to train skills in all areas of craftsmanship. Skilled craftsmen are very expensive and difficult to find. Even if found, they are not prepared to do conservation work due to low remuneration. People who are prepared to work in the field of conservation are not the best craftsmen. Therefore training special skills in crafts required for conservation of monuments with valuable art treasures is very important. The maintenance of decorated timber work will only be possible by educating the users on the value and importance of safe - guarding cultural property and by monitoring their behavior to ensure that they do not harm these valuable national treasures.