

Vernacular Architecture of Sathkorale and its Preservation

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1. Introduction

The built environment of a human settlement comprises of numerous structures belonging to one of the two basic categories, namely the vernacular and the Grand Traditions. The latter refers to the buildings, either in large scale or in huge complexes, which usually receive the patronage of elites, rulers or the state, both in their construction as well as in their maintenance. But the structures of the vernacular tradition are small in scale and, are built by peasants using their rustic knowledge of technology. Not only the scale, but the use of materials, architectural styles, and detailing of the buildings of the Grand Traditions display comparatively more elegant characteristics.

Buildings of the vernacular tradition are built with locally available materials. Building materials are selected to match the limited knowledge possessed by peasants as well as the primitive tools available to them. However the disposal of man-power, the knowledge of organization of labour as well as the cultural aspects, also played a vital role in influencing the vernacular architectural Tradition.

The aforesaid factors had a certain degree of influence on the vernacular tradition, promoting two important characteristics in their buildings. One of

them is the regional identity, and the other is the continuing transformation of architectural style. The latter characteristic is mainly influenced by the gradually expanding technological know-how of settlers while the former is affected by the regional differences of materials and technology.

Unique characteristics of vernacular architecture assign it an important role in the built environment of any human settlements. Since the vernacular buildings are moulded by the use of local technology, materials, organizing of labour and cultural aspects, they could be considered as true mirrors depicting the living style and social behaviour of society. Types and styles of buildings reveal how and for what purposes they were being used, and depicting ways of life.

2. Sathkorale

Sathkorale, meaning the "Region of Seven Korales", refers to the area covered by the present Kurunegala District. However, the word Sathkorale had been used to denote a large region during the early medieval period. During the Kotte Kingdom, the entire Northern plain was identified as Sathkorale. But, before the maritime provinces were colonized by the Europeans, the entire north-western plain, which stretched between the

Kala-Oya and Maha-Oya was referred to as Sathkorale. After the colonization of the maritime provinces, the rest of the area became Sathkorale. During the Kandyan Period, this region was considered very important and was administered by the first Adigar of the king (Fig.1).

The northern boundary of the ancient Sathkorale was the Vanni region, but at present the area is reduced and the new northern boundary is Kala-Oya. The southern boundary is Maha-Oya. Sathkorale has been popular as a rice producing region since early times, and thus came to be popularly known as Bathkorale, or the region of rice.

One of the specific characteristics of Sathkorale is its location spreading into two different climatic zones, namely the Dry-Zone and the Wet-Zone. The Deduru-Oya, which approximately demarcates the boundary between two climatic zones, flows through this region allocating a larger portion to the Dry-Zone of the country.

Sathkorale became a settlement region of vital importance since the latter part of the 10th century, at the close of the Anuradhapura period. This period experienced a mass scale migration of population from the Dry-Zone to the Wet-Zone in the face of numerous difficulties in the Dry-Zone. The Sathkorale being an intermediate climatic zone, became an immediate alternative to the Dry-zone (Fig.2).

Today, Sathkorale plays a vital role as an affluent settlement region in Sri Lanka. Being in the intermediate zone, it provides a favourable climatic and geological conditions for both habitation and paddy cultivation, thus flourishing as a predominantly agricultural region. Sathkorale's close proximity to, and convenient communication links

with the present capital of Sri Lanka, further highlights its role in modern Sri Lanka.

3. Vernacular Architecture of the Sathkorale

Sathkorale, being a popular settlement region during the period of transition from Dry-Zone living to Wet-Zone living, promoted the appearance of a unique architecture. Characteristics of this vernacular architecture are evident in many areas one of them being the remaining historic buildings which are extremely few in the region.

Materials used for the construction of these buildings were temporary in nature. Sand, clay, mainly wood and their combinations were mostly used. Roofs were mostly thatched either with cadjan or palm leaves, or in some cases with straw. Buildings were small in scale when compared with those of the previous as well as later periods. Even big cities of that period consisted of temporary buildings when compared with later and earlier cities. However, this building tradition has been preserved to date as the vernacular architecture of Sathkorale.

3.1 Two groups of Vernacular Buildings

Vernacular buildings of Sathkorale could be divided into two different groups based on their characteristics and the time of construction. One of them is the historic buildings which belonged to vernacular architecture, and the other is the buildings which follow the vernacular tradition. The region possesses many buildings belonging to the latter group, which have been built to cater to diverse functions of the agriculture based Sathkorale settlers.

Vernacular buildings which have any historic significance are comparatively

rare in the region, mainly, because of the temporary nature of those buildings. However, few representative examples remain, in the form of image houses in village temples, which were built during the Kandyan Period. Image houses at Lunukadavella near Vellawa at Hangawa near Theniyaya, and at Periyakadu Nelawa are some of the examples. All these buildings are built with wattle and daub wall constructions and finished with plaster and white wash. Their roofs are with clay shingles or in thatched form. However, there are no remains of vernacular residential buildings, which have any historic significance.

3.2 Vernacular Settlements

The geographical location of Sathkorale lying partly in the Wet-Zone and partly in the Dry-Zone, has influenced the emergence of diverse types of buildings as well as settlement patterns. Of them, the settlements in the Dry-Zone, share common characteristics with the settlements in the Dry-Zone regions, specially with those of Nuvara Kalawiya. Very specially settlements in the Hiriyala Hathpattu, Vanni Hathpattu, and Devamadi Hathpattu of Sathkorale have many common characteristics with the settlements of the north-central province. They are characterized by a reservoir to provide water, for both living and agricultural purposes.

The location of hamlets in the Dry-Zone part of Sathkorale has certain similarities with that of the Dry-Zone settlements. Usually, all of them are located in association with an irrigation channel, which carry water to paddy fields from the reservoir. The total number of hamlets in association with a particular reservoir depends on the size of the reservoir. Some of the

hamlets have reservoirs for their exclusive use, while others share a large reservoir for their water requirements. The exclusive reservoirs of hamlets are usually small in scale and, their water is just sufficient to sustain life in the hamlet until the next rainy season. Larger reservoirs such as Hakvatuna, Batalagoda and Kibulvan etc., serve several hamlets and many villages, by providing water by means of the irrigation channel systems, almost throughout the year.

Hamlets in association with a reservoir or a channel have several specific characteristics. Although they do not follow any hard and fast rule, they usually have some spontaneously developed zoning system. These units of settlements are usually known as Gama, and a Gama is basically comprised of an irrigable land known as Madabimā, and, a non irrigable land known as Godabima. Madabima which receives water from the reservoir, is usually used for paddy cultivation and Godabima for diverse activities such as residential purposes, animal husbandry, forest reservation and grain cultivation. On some occasions, part of the Godabima is converted to paddy land using rain water. However, during the non-rainy seasons, this land is used for various other types of cultivation, adopting a system of trans-cultivation.

The physical formations of the Godabima, have some unique characteristics, though they are not laid out following any norms or regulations of village planning. Normally residential units are located around a central open space belonging to no one which functions as the core area of the common activities and place of interaction of the village community. Housing units are located facing this open space, and very

specially, out-door grain storage bins, which are known as *Atuwa*, are located abutting the open space just in front of houses. Kitchens of these housing units are located away from the open space.

Houses of the hamlet and the open space are encompassed by a forest reservation, which provides firewood necessities of the hamlet while demarcating village boundaries as well.

An open area between the residential units and the forest, which is usually devoid of buildings, is allocated for the cattle farm. Since the village comprises of relatives, a common quarter is used for keeping cattle during the night. Sometimes individual cattle farms, which are located behind individual housing units, could be seen.

The access from the hamlet to the paddy fields as well as to the village temple, is provided either through or adjoining the cattle farm. Access to the hamlet from neighbouring hamlets is provided from the opposite direction. However, this also is not a hard and fast zoning system, and there are many variations. At the present time lands including community spaces are fragmented and their boundaries are marked, despite the fact that the location of the hamlets correspond to the foregoing concepts.

A village is comprised of several hamlets, and shares many facilities in common with the others. One of them is the village temple, which is a common feature since early days. In the modern context, a village has several open halls performing different functions such as sports societies and funeral support societies. They are located in a convenient place on high lands, which can be reached from diverse directions. The village temple is usually located at the highest point.

Hamlets and the villages in the Wet-zone of Sathkorale do not share many of the aforesaid characteristics. There, paddy cultivation does not depend on retained water. Consequently, reservoir or reservoir related hamlet configurations are hardly to be seen.

One of the major determinants of the layout of hamlets in the Wet-Zone part is the foot path or the access way which connects the settlement to an important village or a centre. The other terminus of this footpath is usually the village temple, which is located at the foot of a mountain. Usually the access roads are flanked by residential plots on one side, while the paddy fields are located on the other side. A water supply channel may hardly be seen, but a channel collecting discharged water from the paddy fields is a common feature. Water is drained from one paddy field to another, as fields are constructed in a series.

3.2 Vernacular Religious Buildings:

Vernacular buildings with any historic significance in the Sathkorale exclusively belong to the religious group of buildings. Most of these buildings are small in scale and are image houses either belonging to a village temple or a place of worship in a hamlet. The History of most of these shrines goes back to the days of the Kandyan kings, during which the Sathkorale was considered to be an important region.

Historical vernacular image houses of the Sathkorale could be divided into two different groups, based on their principles of construction, namely *Tampita vihara* or *Plinth type vihara*. The former refers to the type of buildings of which the floor is raised above the ground level by means of pillars, thus resembling a type of building popular in South-East or East

Asia. The Tampita type of religious buildings are of two basic types depending on their principles of construction, namely Boulder Type of Tampita and Pillared type of Tampita. In the latter type, the entire building is supported by few, but fairly large size stone boulders (Fig.3). In the former, the building is supported on a series of stone stumps or wooden pillars (Fig.4 and 5). In most cases, buildings are constructed with wattle and daub walls, and finished plastered with a mixture of sand and clay and white-washed. Their internal walls are decorated with paintings which depict stories from Buddhist literature. The exterior walls are plastered in a similar manner, and finished with white-washing. The floors of these image houses, are usually finished with a thick coat of cow-dung layer. The image house of Kolombagama temple is the type which is rested on stone boulders while those at Hangawa and Lunukadawella are examples of the pillared type of image house. The Plinth type is widely used and available in most of the historic village temples.

The Plinth type of image houses does not reveal any specific characteristics like the Tampita type. But their plinths are raised a few feet above the ground level to give the necessary prominence to that building over the others. The raised podium is accessible by a flight of steps, usually located in the narrower side of the rectangular building. In the Tampita type of image house, the access is provided by a step staircase and in most cases a flight of steps resembling a step ladder.

Vernacular image houses, whether Tampita or Plinth type, share common characteristics in plan form, use of materials, construction technology

employed and the scale etc.

The basic plan form of the Vernacular Image House comprises of three different spaces meant for three different functions. The most important of them is the inner space, which is meant to keep the sacred objects or the Buddha statue. Usually, this space is encompassed by a plastered and white-washed wattle and daub wall, of which the interior surfaces and ceilings are decorated with folk art depicting events mentioned in Buddhist literature.

The inner space is encircled by a verandah, which provides the circumambulation facilities in the traditional image house. These verandahs are narrow and frequently measure less than 700 mm, in depth. The outer edge of the verandah is protected by a timber parapet, which is usually 900 mm in height. The roof over the verandah is supported by a few wooden pillars, which rise from the parapet.

The verandah at the front of the image house is widened to provide the third space of the vernacular image houses, that is the space for congregational facilities for a few worshippers. The space is accessible from the ground level by the already noted flight of steps or the access ladder. A narrow and short doorway provides access from this space to the inner room.

The overall sizes of the image house depends on many factors, and one of the most important is the patronage received from elite society. Image houses which received the patronage of the Royal or the ruling strata, are a little more elegant, in many respects. Vernacular Image Houses of Sathkorale are comparatively small in scale, measuring about four meters by six meters. However there are much smaller image houses such as that of Periyakadu

Nelawa, which measures only two meters by three meters.

One of the remarkable differences between the Tampita and Plinth Type of Image Houses is their scale. Usually, smaller Plinth type Image Houses do not have the circumambulatory verandah, and this deficiency is overcome by the external circumambulatory space which is provided right round the image house. The area around the image house is devoid of any structures, but a sand layer is spread to denote the circumambulatory area.

3.3 Vernacular Residential Buildings

The remaining examples of residential buildings which have any historic significance are extremely rare in Sathkorale. However, a large number of recently built residential buildings, which depict the vernacular tradition of Sathkorale could be seen, in almost all parts of the region. Further, the memory of the older people in the region is invaluable in conjecturing historic vernacular residential buildings. They could provide invaluable information about the plan forms, building materials, construction technology etc. which were used in the construction of their domestic buildings. Further, they could shed some light on the mode of construction etc. The verbal survey conducted in this regard reveals valuable information about modes and types of construction as well as the customary method of their maintenance, which could have had roots in the historical traditional architecture of Sathkorale. Memories of the older generation clearly indicate that the wattle and daub type of house with cadjan or straw thatched roofs, and cow-dung-applied floors, have been continuing for several centuries.

The simplest form of the traditional

house in the Sathkorale comprised of three basic areas, depending on different degrees of privacy norms. Basic spaces are an inner room, an open hall abutting it, and, a front verandah.

The area where the privacy norms are kept to the highest level is the inner room, which is enclosed by windowless walls on all four sides. A single doorway, which is short and narrow, leads to the open hall or to the front verandah depending on the situation. This is the sole source of light and ventilation to the interior. This space is usually used as the bedroom, in most cases only for the ladies of the house. In the prototype houses there is only one room of this nature, but occasionally, there are either two or more rooms (Fig.6)

Abutting the enclosed rooms in its narrower side is the open hall which functions as a multipurpose space. Consequently, this hall becomes a semi private space, and is usually enclosed from two adjacent sides, by walls usually rising up to the roof level. The third wall is one separating this open hall from the inner room. The fourth side in most cases is a half wall which separates the long and narrow front verandah of the house. Occasionally, this side is also partly covered with a high wall rising to about seven feet in height.

This open hall is usually used to entertain guests. However, during the night time, this space becomes the sleeping quarters of the chief male, or all the males. Usually, there are three different doorways from this hall, i.e. to the inner room, to the front verandah, and the third to the rear of the house, where the kitchen is located.

The third space is the public space of the traditional house and is a long

narrow verandah, spanning the entire length of the house. Usually, the front verandah is an open space with a high plinth level, and in two basic variations. One of them is the type in which the verandah is enclosed by half walls measuring about 750 mm in height, and, the other variation is a completely open type. The height of the verandah usually varies from 450 mm to 750 mm, with a wall plate height just ample to stand underneath. The width of the verandah varies from 900 mm to about 1200mm.

The raised nature of the verandah, as a results of the raised plinth level, provides a comfortable seating space using mats. This space enables communication with casual visitors. Occasionally some of these houses do not possess a raised plinth, but this deficiency has been overcome by constructing a raised platform which is popularly known as "Pila", at one or both ends of the front verandah. Occasionally, a bench is also kept in this space (Fig.7, 8)

3.4 Other Buildings in Association with Vernacular Houses

Vernacular residential buildings in Sathkorale are usually constructed in association with several ancillary buildings. Out of them, one of the most essential and common buildings is the Bissa, which can be easily looked after by male house holders for whom the open hall becomes the sleeping quarters during the night time.

The remaining Bissas in Sathkorale as well as previous research carried out by scholars, suggests that there were at least four types indigenous to the region. These types are classified based on their forms as well as the materials used in their construction. Primarily, they are structures which are built following a similar concept to the Tampita type of

structures. Their floors are raised above the ground level, either by means of stone boulders or by wooden stumps. They are a type of bins manufactured using woven cane and finished with clay plaster. Occasionally their walls are white washed, and sometimes painted with little rudimentary paintings. Their roofs are independent structures and are supported by freestanding wooden pillars. The access to the bin is through the roof, which was usually hinged and could be opened using a stick (Fig.9, 10).

3.5 Traditional rest House or Ambalama

Another category of the vernacular buildings of Sathkorale is the traditional rest house known as the Ambalama, which as located by the side of the main road. The Ambalama is usually, a open hall with a roof supported by wooden or stone pillars, and are without walls or with few walls. Occasionally, rest houses were built in wattle and daub constructions.

The Ambalama might have received the attention of the elite society to a greater extent, and as a result, most of the Ambalamas were built with wooden benches or raised plinth rests. Even though most of their roofs are covered with clay tiles. Occasionally there are thatched roofs as well. The Panavitiya Ambalama located in close proximity to Dambadeniya, provides information about their general characteristics. However, a lack of ample examples of Ambalamas, prevents acceptable generalization of features of their architecture.

The vernacular architecture of Sathkorale is unique in respect of the use of materials and building forms. Locally available building materials are used with the help of the indigenous construction technology.

3.6 Vernacular Building Materials

The most widely used building materials are stone, sand, clay, timber, straw and cadjan and are used mostly in various combinations. For example, clay is used in combination with sand or timber or both in wall constructions.

The most popular wall construction is of wattle and daub where a fabricated timber skeleton is used to reinforce a clay and sand wall. In this construction, the walls are a non load-bearing type. The roof is constructed before the walls, and is supported by few strong wooden pillars planted at selected distances. These pillars are either embedded in the walls or stay free standing, depending on the spatial requirements. The construction of the walls proceeds with planting uprights or secondary wooden pillars in between main pillars at selected regular centres. These distances usually range from 150 to 250 mm. Then a thin and flexible wooden member, usually a strip of bamboo, is tied to both sides of the uprights at a similar and regular spacing, to form a wooden skeleton in a grid pattern. Prepared clay and mud balls are filled in-between these square grids to construct the walls which have very rough surfaces. Subsequently, the wall is finished, by means of another layer of mud covering. Then a layer of clay and sand plaster makes the wall semi-rough. Finally a coat of lime plaster or mud painting is applied. Roofs are thatched either with straw or cadjan as explained earlier. The floor is completed with a thick layer of compacted earth filling and few layers of refined sand as well as the final coating of cow dung.

The developments of the vernacular building tradition of Sathkorale was influenced by technological developments in the region, and modern mate-

rials. However it still preserves characteristics borrowed from the past.

Similar methods of construction, could be observed in different types of vernacular buildings namely, religious, residential or utility types in the Sathkorale.

4. Vernacular Architecture of Sathkorale today

Today, vernacular architecture of the Sathkorale displays a remarkable degradation due to several reasons. Some of them are natural causes, while the others are influenced by changing social behaviour. The latter group appears in two forms. One of them is indirect influences received from technological developments which are detrimental to traditional architecture and the other is direct influences receive from changing social values and practices.

4.1 Degradation due to changing Social Appreciation

Two primary causes of degradation of the vernacular architecture of Sathkorale could be categorized as follows,

1. Indirect influences from the changing social appreciations
2. Direct results of wilful destruction of historic buildings.

(a) Changing Social Appreciation

Until very recently the traditional society of Sathkorale followed certain customs and practices which indirectly influenced the continuation of vernacular practices which took place at annual functions for which a certain degree of preparation had to take place. Even though there are numerous such occasions, the Sinhalese New Year was considered as the most prominent event. This falls in mid April. This festival is celebrated by most of the peasants, because, the function falls during the

time in which the harvest is reaped and the peasants are rich in both cash and food. On the other hand it is the period of vacation, for both school children and the farming community. During the month of April, farmers are awaiting the monsoon rain which usually falls at the end of April or beginning of May.

All the aforesaid occurrences encourage the celebration of the Sinhalese new year with great enjoyment. As part of the preparation for this ceremony, housing units, the village temple, and the grain storage bins undergo refurbishing. Their wall are either whitewashed or painted with a coat of new clay, roof thatching is renewed, floors are either washed or a new coat of cow-dung layer is applied. Almost all the buildings, and the premises that are occupied undergo a complete cleaning. In a sense a complete annual maintenance is carried out. Consequently, this process became a method of maintenance for the traditional buildings, thus encouraging their preservation.

The Sinhalese New year is just one festival out of the many celebrated by the peasants of Sathkorale. There are numerous other festivals such as the New Paddy Festival, various religious ceremonies, as well as family functions, which encourage the maintenance of vernacular buildings.

However a gradual decline in interest in these functions and practices is visible in the Sathkorale. The main cause for this is the changing social values. The role of the Sinhalese New Year as well as the importance given to it is gradually fading away, adversely affecting the maintenance of traditional buildings. The worst result is the deterioration of the vernacular architecture of Sathkorale.

Another social factor which affects vernacular buildings is the break up of

the traditional communities. The traditional societies of Sathkorale were closely bound, thus encouraging coexistence and cooperation, leading to a self-sufficient living throughout generations. Extended family living or living in the same village was common indirectly influencing the preservation of traditional architecture. This practice of group living is also disappearing. The newly accepted privacy norms, as well as the migration of educated family members has weakened the tradition of extended family living. The consequence is the abandonment of traditional houses, indirectly causing the deterioration of vernacular architecture.

One more changing social attitude which is detrimental to the continuation of vernacular architecture in the Sathkorale is the gradual weakening of community bonds. Since time immemorial most community work including the construction and maintenance of traditional buildings, was carried out with the cooperation of the whole community on a sramadana basis. There was an unwritten social obligation on members of a community to help one another. This was possible because most of the members of the community were relatives. Today this bond is weakened to a great extent due to several reasons. One of them is speculative land fragmentation which has brought new members to the close-knit communities. Sometimes these new members are neither relatives nor belong to similar traditional communities. At times even though they are related they are divided into different political groups.

As a result of the general economic development of the country, the styles and the materials employed in construction works are generally changing. The worst effect of this trend is the underva-

valuation of traditional materials and styles. This affects the usage of traditional building materials as well as their architectural styles, though they perfectly suit the climate and the natural environment of the region.

Attitudes of the lending authorities towards traditional architecture worsens the situation and in their verifications, almost all the traditional building materials are categorized as temporary materials. This situation prevents granting loans to prospective peasants who wish to construct their own houses following the tradition. These attitudes have detrimental effects on vernacular architecture, thus encouraging a gradual degradation.

Lack of suitable regional development which could generate additional income for the peasants, could be considered as a factor which is indirectly influencing vernacular architecture. The hamlets and villages today are much bigger than at their inception, but the existing resources are insufficient to sustain them. Therefore, a general degradation of the standard of life in those settlements could be expected unless reasonable resources are available. Consequently, a migration out of the region could be expected causing the degradation of vernacular architecture.

(b) Wilful Destruction

The willful destruction to vernacular buildings are to several forms, and the worst affected buildings are historical religious buildings. Treasure hunters have become a severe problem in recent times. They destroy the icons and shrine rooms of traditional image houses, thus reducing the attachment of the peasants to their historic places. The adverse effects of this works in two ways. First, they gradually abandon the maintenance of the vernacular buildings, because their treasures are missing. Secondly, they

may go for a better building, demolishing the existing one for better security and protection. It is very difficult to educate the peasants, about the importance of vernacular buildings, because of the new ideas they have acquired.

Another type of wilful destruction, though minor in nature is the graffiti on walls of image houses. One has to rub or chip off certain parts of buildings to remove those imprints. The same reason causes the deterioration of folk paintings, finally leading to their destruction.

Occasionally, destruction is for purposes of taking revenge. For example, the sangha community of the temple who support a political party or a leader, may invite revenge. This has indirect influences in vernacular architecture, and on some occasions, lead to the destruction of vernacular buildings.

4.2 Elite sponsored mass Housing Scheme

Elite sponsored mass housing schemes have two different types of influences. One of them is the demolition of existing vernacular buildings to accommodate new buildings. The other is the gradual vernacular buildings, due to one or more reasons already explained. Devaluation of vernacular architecture and the influx of outsiders to villages are two important reasons.

4.3 Degradation of Vernacular Architecture due to Natural Causes

The main causes for the destruction of vernacular architecture are the following.

- a. weather conditions:
 - b. structural failures:
 - c. destruction due to use
 - d. insects, termite and animals
- a. Deterioration due to weather conditions:*

The effects of weather condition are diverse and could be caused by chan-

ging environmental factors and weather patterns caused by sun, wind, rain, humidity and temperature.

Sathkorale gets a high rainfall from the south western monsoon and somewhat less rain from the north eastern monsoon. In between those two monsoons is a period of dry weather. This weather pattern occurring at short intervals is very detrimental to vernacular building materials, because most of them are organic

Torrential rains cause considerable physical damage to vernacular buildings. Rainwater penetrates through decayed roofs to their interiors and causes damage by physical and chemical action; plaster peeling off from surfaces, fungi formations, erosion disfiguration and other forms of decay. This affects walls as well as floors, This affects work on walls as well as paintings and carvings. Wind erosion corrodes exposed surfaces, and increases the damage caused by rain. Humidity and the sun cause biological reactions.

The cumulative effect of weather conditions is as in follow

1. structural failures.
2. decaying of aesthetic building elements,
3. destruction of art objects attached to buildings.
4. appearance of fungi and other biological elements.
5. growth of vegetation on the roofs
6. physical damages such as cavity formations, in building components,

b. Structural Failures

Structural failures of vernacular buildings could be being caused by several factors the most prominent

1. decay of building elements.
2. excessive loading of structural members due to stagnation of foreign elements, changing of functions, and

dampening of vital building elements.

3. changes of structural members due to insects and termite attacks and other forms of biological activity.

Structural failures of building components due to extremely adverse conditions is a very common cause of deterioration in vernacular buildings. Failures in important structural members may lead to the collapse of vital parts of the building, or in some cases the collapse of the whole building. Some of the frequently occurring visible failures are the following.

1. deformation of structural pillars or columns due to excessive loading.
2. sagging of rafters, thus deforming roofs or causing them to collapse.
3. failure in floor beams in buildings with raised floors (tampita). This same failure causes cracks in wattle and daub walls, and affects the walls which are supported on the floor beams causing severe damage to the entire building.
4. Bulging out or collapse of walls due to stress from the wooden pillars embedded in wattle and daub walls.

c. Deterioration due to Usage

The usage of a vernacular building also contributes to it's decay, and the main causes which expedite this process are the following:

1. Natural wear and tear.
2. Unintentional distruction

Natural wear and tear are caused during the day by day usage of the buildings, i.e. walking, sweeping, dropping of light materials, and, wear and tear during usage. This form of deterioration is minor and slow, and can be controlled by occasional maintenance.

Unintentional destruction is the major cause of deterioration and sometimes causes irreparable damage.

However, almost all these causes are avoidable. They are listed below.

1. Religious practices such as the burning of oil lamps, and other smoke emitting offerings produce thick greasy soot on surfaces, thus causing damage to vital pieces of art works such as wall and ceiling paintings in vernacular image houses as well as icons.
2. Unskilled renovations and patching up maintenance by peasants may cause unnoticed destruction to areas of vital importance in vernacular buildings (Fig.11).
3. Leaning against walls and other building components causes damage which too is unnoticeable and could become severe during the course of time.
4. Gradual abrasion of art works and sculpture such as pedestals, moons-tones, and thresholds etc.
5. Willful destruction such as removing important parts from the image houses to be kept as souvenirs.
6. Use of incompatible materials in renovation of historic buildings.

(d) Destruction by insect, termites and other creatures:

The other major cause of deterioration is the insect attacks on building components and materials. This is encouraged by environmental factors prevalent in the region. The most prevalent types of attacker are bats, pigeons, and white ants.

Insect attacks can be serious and sometimes cause damage to the structural members beyond repair. Further they destroy vital areas such as plaster, paintings, and decorative elements. Some insects disfigure valuable surfaces on the paintings etc., while others affect them structurally. Building timber, plaster surfaces and painting pigments are liable

to severe damage.

The effects on vernacular buildings by the large birds such as bats, crows etc, are not severe as in the case of insects.. Their damage is limited to physical damage on the surfaces, which sometimes causes deterioration of wall paintings and sculptures mainly due to the chemical reactions of excreta. Attacks by insects are more severe as they are not evident until such damage has been done.

5. Conclusion

Vernacular architecture of Sathkorale may disappear in the near future, even beyond trace, if the present trends of deterioration continue and if prompt action to preserve them is not taken. Since vernacular buildings are diverse in their usage, functions, characteristics etc. the preservation methods too are varied.

It appears from the foregoing observation that the preservation of vernacular buildings has to be considered, under two basic groups, namely Historic Religious Vernacular Buildings and Popular Vernacular Buildings. The first group of buildings could be preserved using conventional methods but utmost care has to be taken when laying down guide lines for the preservation of the second group, which is entirely meant for contemporary living in a very complex society.

In the group of vernacular buildings which have any historic or artistic significance, a conventional form of preservation is quite possible. Deviation from their intended purposes is not usual, and even additions could be made to existing buildings without altering their original characteristics.

Decayed portions of the buildings could be replaced with suitable new parts, either in the same material or

similar modern materials. Deterioration could be controlled by various chemical or physical means; vital areas of wall and ceiling surfaces such as painting or sculpture could be protected with various control measures, or by conserving them using modern techniques; some of the defective areas could be cleaned and restored and maintained under strict control measures. Some of the other causes of deterioration, i.e. dampness, rain water, wind effects, excessive sunlight etc. could be controlled by various physical means.

Vernacular domestic buildings may not be able to be preserved in the same way as the religious buildings because houses cater for a rapidly changing society. Since the needs, and the appreciation of houses is changing with rapidly changing social norms, a conventional form of preservation may not be possible at all. Therefore, an alternative form may have to be considered.

One of the possible ways of preserving vernacular domestic architecture of Sathkorale is by the preservation of their character rather than the preservation of buildings. To achieve this goal, a proper study of the characteristics of domestic vernacular architecture has to be carried out. The foregoing study reveals some of the important characteristics of vernacular domestic buildings. It is possible to use these characteristics in modern dwellings along with the modern materials.

If the vernacular architecture of Sathkorale is to be preserved as well as used to a greater extent, the preconceptions of the lending institutions and others have to change. This may be possible in a de-learning and re-learning process, in which due appreciation is given to indigenous building materials.

Most of the measures for the preser-

vation of Historic Religious Buildings are possible through educating communities who are using them. Some authorities have to take the initiative in this matter. An authority can take the initiative in the preservation of vernacular buildings by actively participating in their preservation. One of the main aims of the authority, which could be a Non-Government Organization, should be the education of the community in the appreciation of the vernacular architectural tradition. In the historic group of buildings the role may be both educating peasants as well as active participation in the process of preservation. However its role in the preservation of vernacular domestic architecture of today could only be the education of the community.