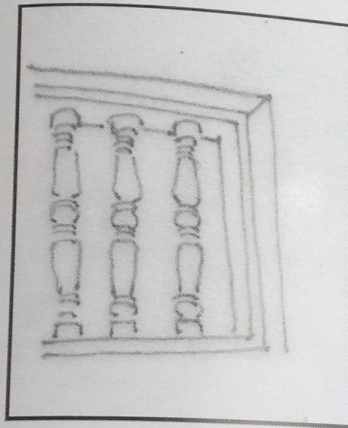


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## Houses of Goa *Through The Ages*



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## ***Editor's Note***

*Goa's ancestral house is an abode of completeness. The biological space reflects closeness of forest and city dwellers to the Nature in the past. However, there is a transition in design, construction technology and functions through the ages. The hunter-gatherer community constructed house of leaves, twigs of trees in a day and occupied it for years. The mud walls gave them thermal comfort. The locally available resources, skills, technology were used for construction of the houses. The productivity of the surrounding space was never wasted. Every house catered to entertainment, occupational, spiritual needs of the extended family. The profile of the space differed in every house as per requirement of the household. Also, the layout and pattern of the usage was a well integrated activity.*

*The colonial rule had an impact on the houses of the rich and the poor alike. The 'tulsi' was replaced by the cross in the traditional the courtyard. The external grandeur of colonial rulers took shape over the deep human sense. The safety dimension altered the construction pattern of the houses. The typical 'balcao' or masonry or wooden column design in the veranda is same that of the palatial houses of the South India. The common folk, as they shared poverty equally, left houses unlocked or to fend for neighbours. This practice continued till the Liberation of Goa.*

*The development activity has taken a toll of the nature-friendly design, layout and construction technology of the houses. The traditional knowledge faces the threat of extinction. The natural aspects no more adorn the Goan houses. The mega-projects have created a worrisome picture amidst concrete jungles in the urban and semi-urban areas. The human sense and biological space of the ancestral house deserves urgent attention in Goa.*

## HOUSES OF GOA THROUGH THE AGES

**K. D. Sadhale**

*(The author is a reputed environmental architect based in Goa)*



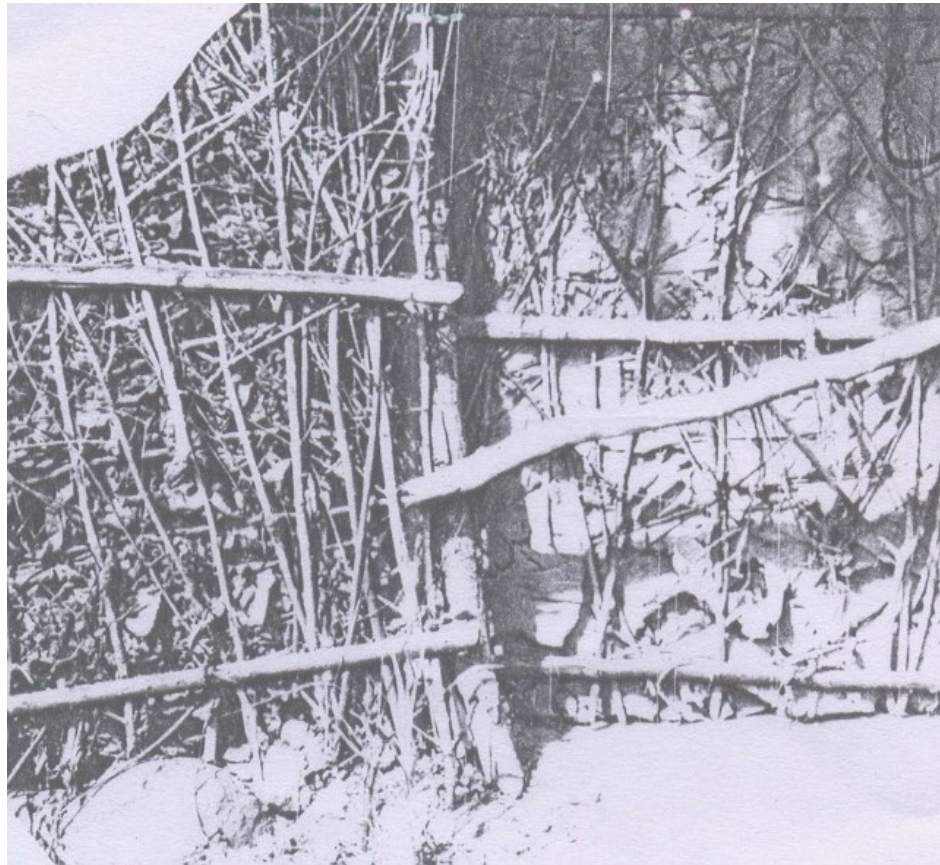
*Adnem village houses*

This is neither history of Goan houses nor a research paper on any particular type or aspect of Goan houses. Being born and brought up in Goa and practicing as architect for more than 3 and half decades, having designed number of houses and built one of my own, I have observed some part of the transition in not only design and construction technology of the house but also its function. My observation is both from close range as well as from distance. In few areas I may have put up something purely from my imagination extrapolating from the synthesis of the factors prevailing at that time. But I am not going into sea of references and bibliographic information.

The archeological finds confirm that Goa was inhabited by Paleolithic man in pre-historic period. The most important rock carving site of Pansaimal in Sanguem taluka (which came to light through my efforts in 1993) suggests that this area was inhabited by hunter-gatherer

community as much as 9000 years back which settled there for sufficiently long period. The genetic mapping of Goa as some institution is proposing to take up may throw light if the predeceases of the same man are presently living in Goa.

Small communities living in forests were not nomadic all the time, where they could get sufficient food and water throughout the year must have settle down. A quick built house from tree branches and leaves of the size wherein a small family can sleep at night is the possible in the form of the first house.

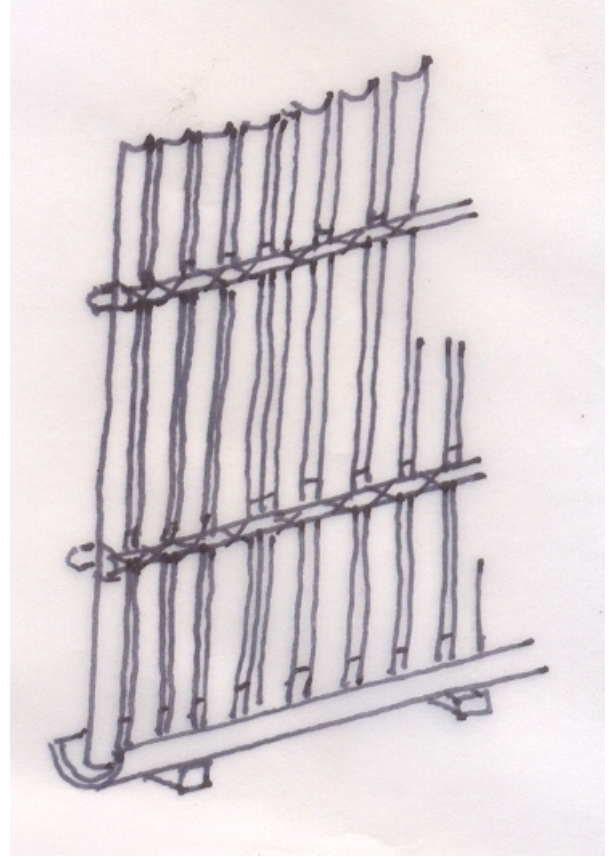
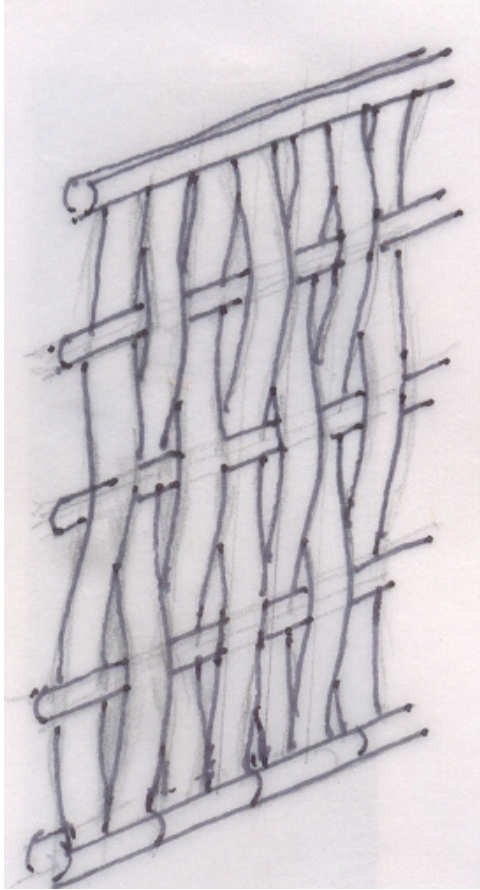


### *Wall of Adnem hut*

Being a region of heavy rains, sloping thatched roof on a raised ground and walls of wooden leaves, twigs, branches tied together to form the wall for protection from the wild beasts. This tends to become the first form of the house. A couple can construct this house within a day.█

On my farm a Jharkhand labor couple with one more assistant started construction hut in the morning and completed by dusk so much that they could sleep in this house at night with their one and half year old child. With little further re-furbishment they continued to stay there for couple of years till they shifted to a mud house constructed thereafter. Such house though in stray cases is seen even today in the remote part of Goa. In my childhood I have seen some poor shudras and scheduled cast people having such houses. These houses needed over-hauling every year before monsoon. The floor was of beaten earth with cow dung coating. The temporary character of the walls was subsequently substituted by mud walls of wattle and daub type. The excavated earth was watered, kneaded by feet into crude clay balls of around a foot diameter, lifted, placed on site and compacted to form the wall. During air drying process, the walls were beaten hard by heavy 'petnem' little broader and shorter than the cricket bat. Walls of the most of the common man in the early half of last century were built with these walls. The walls were painted with mud paint every year or alternate year. Lower part of half a meter was the skirting band of cow dung painting.

Thin walls were made by mud plaster on wooden laths. Strips of big bamboos, areca strips or strips of fishtail palm stem fixed and mud plastered on both sides. I have come across such thin partition two years back for the headmaster's room of Kasturba High School, Panaji. It was put to demolition for the sake of reconstruction. With hundreds of students rushing through the corridor and banging against the wall for half a century this thin partition had remained intact, unidentified of its construction technique. It was looking like a perfectly plastered brick partition.

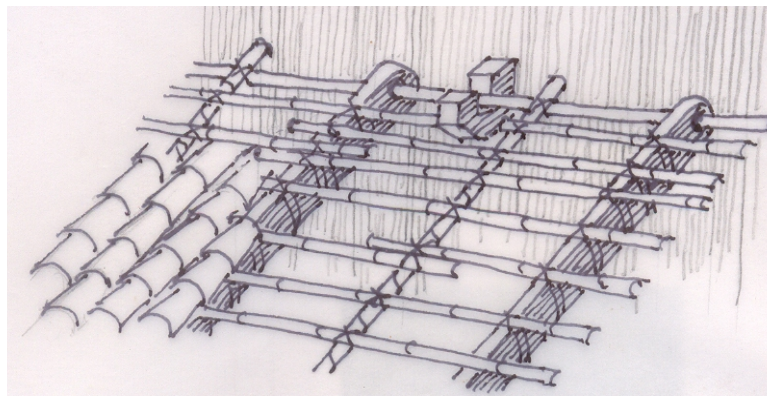


*Bamboo  
J a l i  
A r e c a  
J a l i*

The fish palm must have been from the backyard of the school buildings as it still holds the reminiscent of the original flora of the place.

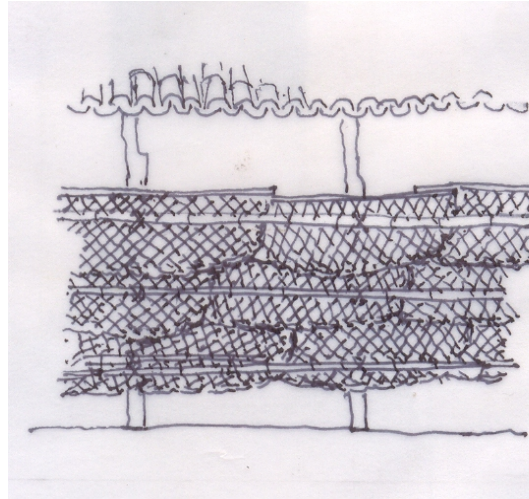
Verandah grills of areca strips were very common in areas closer to areca plantations. In forested areas it was big bamboo strips as is seen even today.

In my childhood I have seen that 50% of the labor class had houses with mud walls and thatched roof. At the same time there existed since a millennium, village trades like carpenters and potters.



### *Country tiled roof*

Country tiles with wooden roof became the formula for a middle class person. Coconut rafters with small bamboo strips battens were tied in position by coir string.



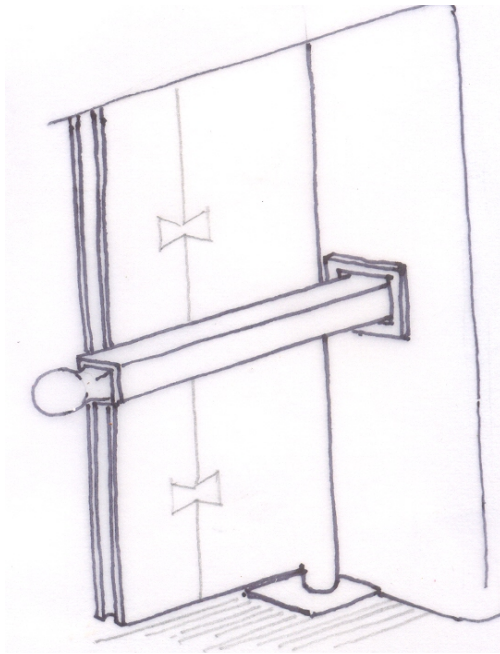
### *Mud wall protection*

On that row of country tiles open channel and closer alternately were laid. Coconut leaves were woven into 'mallam' in locations where walls were vulnerable to rain beating problem. These mallam and clad to walls. They were tied on a frame work of small bamboos. In forest areas it was the grass which was used for the same. Even today this is seen in many places. The floor was of rammed earth. It was a process of fifteen days to prepare the floor.

The earth after hand picking the stones of size bigger than lemon was soaked with water for one day and then kneaded by feet to soft elastic form. It was leveled and allowed to dry and during drying was beaten hard to compact with flat 'petnem' every day. After it becomes hard and cannot be compacted by beating further, it was given surface treatment. In most of the cases it was charcoal paste, cow dung and fine clay.

But in Brahmin (Bhat) families the treatment was elaborate with ingredients like lampblack, gum from the bark of silk-cotton tree or such other organic binder. Then it was polished with smooth rounded stones from river or sides of round glass bottles. The ladies of these families had developed a particular technique of bi-weekly maintenance with cow dung with lampblack applied and then scooped by an areca leaf part scoop termed as 'painkhanda'. This kept the mud-floor clean and glossy. Ladies of this community had an intricate 'khadi' design with line work of white lime on black skirting of half a meter height.

This used to last for decades. White rangoli design on black floor was a daily ritual of floor decoration. Front floor, back door and bed room door were the only doors with shutters. They were pivoted doors with wooden latches. For external doors had full opening size sliding wooden bolt of strong section which used to slide into the tunnel formed in the wall. This was called 'adambo'.



*Pivoted door with adambo*

Construction of house used to start with the digging of a well. His used to give mud for walls and water for perennial use with bathing and washing place around paved with laterite and granite stones.

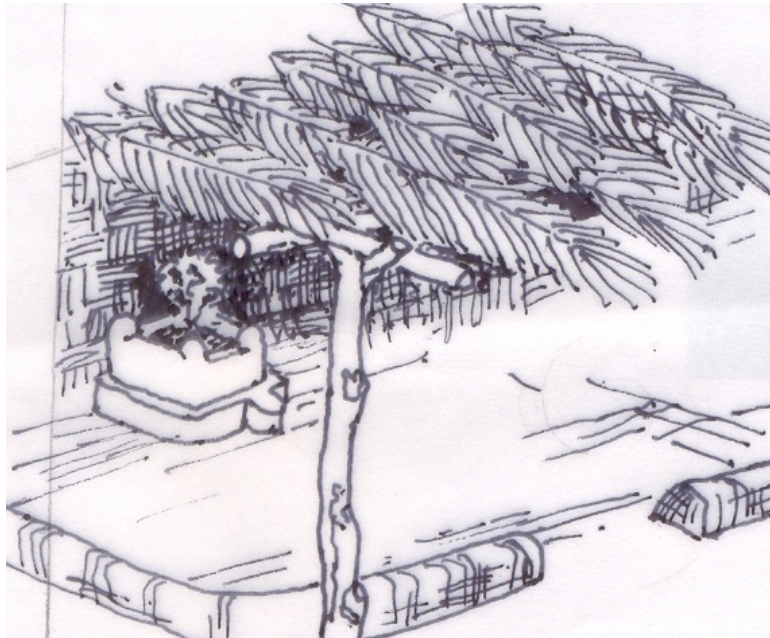
It accommodated water heating arrangement also. A big copper pot on a chullah and firewood stove. This whole area was termed as 'mannem'.

House with first floor gave little higher status to house. When my grandfather built the house (of coarse mud house) he used to tell the people proudly 'I have built house with 'malmadi' (1<sup>st</sup> floor) spending Rs.1000/-'House of this grade had shutters to windows, lathe turned wooden blusters and few fancies of this type. The 1<sup>st</sup> floor used to be of wooden beams and planks with 10 to 15cm. thick mud floor. In many houses the planks were substituted by a boarding of thin bamboos. The house of my maternal uncle had such floor which my mother (who died at 93) remembers from her childhood. This means it could stand a century. I was told that the matured bamboos were soaked in saltwater for a month or more. After laying for floor they were covered with leaves of 'kumbyo' or such others having pest resistant qualities. Whatever may be the



treatment, I have not seen the wooden plank, beams or bamboos of floor affected by white ants or any such pests.

The house invariably had wide and long verandah at the front as well as at the back which was the most comfortable living space in the front and working space at the back. Many times front verandah was protected by wooden grill. Friends and relatives were entertained in this space and servants in the rear verandah where used to be the grinding stone, rice, poha pounding apparatus, etc.



*Typical angon*

Front space or courtyard or 'Angon' which had a great significance in the all India culture was invariably a common feature not only in Goa but throughout the country both among rich and poor alike.

In Goa during dry season of the year there used to be an open Pandal of area, bamboo or wooden bullies with flat roof cum pergola covered with sparse coconut leaves. A mud curbs and mud floor of this 'angon' were finished with cow dung coat. It was constructed in the month of November and dismantled at the beginning of June. The space was used for variety of activities: rituals like marriages, religious activities, socializing space, agricultural processing such as de-husking of beetle nuts and coconuts, preparing papads and jack-mango items of preservation, and so on. In hot humid climate this space with free air movement created good working environment.

Gossip during working use to relieve the fatigue of the work. This pandal or 'motov' shielded the verandah from the glare of the noon.

In Hindu houses there used to be tulsi plant dignified by construction of 'vrindawan'. The plant was worshipped daily with watering, flower and haldi-kumkum and oil lamp at the dusk creating a pious environment. When Christianity came Tulsi was substituted by a cross in many houses. Flowering, ornamental and ritualistic plants adorn the borders of the 'angon'. Rangoli decoration was the ornamentation of this space, in some houses daily at least symbolically as a ritual.

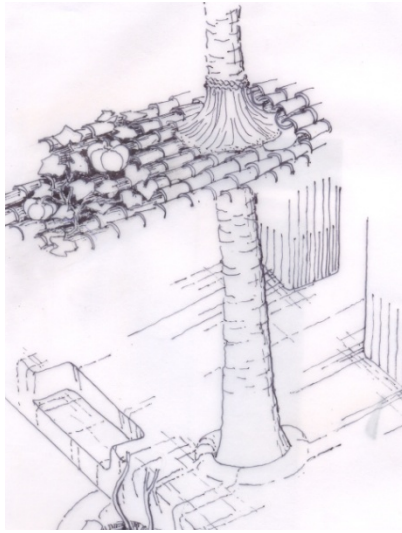
It was rare that complete house was built at one stroke. It had a growth pattern. The central part having the biggest height termed as 'chowk' was built first. As per finance and as per need the lean-to-roofs used to jet out on all the four sides. The central part mostly used to have 1<sup>st</sup> floor. The space below was dark but was the air-conditioned part of the house. Everywhere in the world mud houses gave best thermal comforts.

Furniture was minimal. Cow dung finished seating platforms of half a meter height called 'sopo' were common in verandah. It was sofa-cum-bed of that time. Additional seating was on the floor with bamboo mat 'hatarpato' or grass mat. The kitchen had mud chullahs on floor which were painted daily with mud paint. Adjoining to that was less than 1 m<sup>2</sup> of fire wood store. Cooking was done by squatting. A laterite carved sink, couple of racks and shelving in the wall was all that comprised of kitchen.

Near the house there used to be couple of independent structures. A cowshed, a fire-wood store and sometimes a separate shed for storing the ashes which were daily removed from the kitchen stoves and water heating chullahs. All these sheds were of thatched roof on wooden or mud columns.

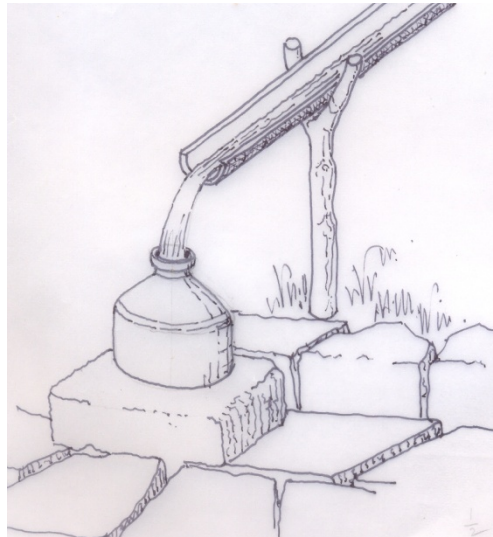
Space around the house was used to plant flowering plants for daily pooja, waste water from manem was directed to banana trees clump or breadfruit tree. There used to be a separate cow dung pit for manure and a pit for waste food items.

In this agro-cultured society the space of the roof was not spared. In rainy season creepers of pumpkin and ash gourd were run over the roofs to harness the sunlight above the roof. Except for religious plants the productivity of the surrounding space was not wasted. If a tree like coconut comes in the space where the house is to be extended, the tree was allowed to pass through the roof.



*Plantation embraced by the house*

In the houses in areca plantations which used to be in the hill slopes, the water source for irrigation used to be the spring in the hills. Many a time this water was transported to the house by means of channels made of long stems of areca trees. 'Ponel' and the water, used to fall continuously through the gargoyle of areca channel in the 'mannem' of the house and from there to the plantations. This luxury was called 'ozro'.



*Ozro*

Most of the people had some land to cultivate and house was a place to store and process the produce. Grinding stone, rice pounding arrangement were part of the house requirements.

According to the vocation each person had a space where he could work. The carpenter and blacksmith were the same who had one verandah type space for working. Potter had his wheel

and other equipment and kiln use to have separate space. Coppersmith also had similar space. Only goldsmith had closed room for working for obvious reason. The barber, used to give home service. Washer men and 'kansar' (glass bangles seller) used to give home delivery. There were slight change in the layout of house of each caste (vocation was caste wise) as per use. Harijans used to do bamboo baskets and mats. They and shoemakers were separate casts of untouchables. The houses of the untouchables were at one end of the village. Their working space was again an open verandah.

If the houses has to expand and a coconut tree comes in the way, the tree was not cut but, was allowed to jet out of the roof and lived in a room or verandah as one of the members of the family with the surrounding ground used as the floor of the house.

House was the place of living, working and also of rituals and enjoyment. Ganesh Chaturthi, the biggest festival had the best dignified location in the house. Traditional performers used to make their short performances in the angon and were paid mostly in kind. The layout and the pattern of usage of the house was a well integrated activity.

Houses of remote forest communities were still different story. I have seen few hamlets of this type before being affected by modern world but in the process of change. They were small huts with wide space in between, the conserved levels of topography, the paths, the trees maintained in between, few plants planted by the residents, the degree of cleanliness and the total rhythmic ambience was exciting for a man like me who had seen the best modern buildings and also the chaotic urban settlements. The human scale in the entire setting which is lost in the most sophisticated modern buildings is pleasantly conserved here, may be inadvertently.

Recently I visited Gaundongri village which was getting transformed with the thatched roof being altered to Mangalore tiles. But the footprints of the old primitive houses were quite readable. Walking through the settlement was through the transparent living of the inhabitants. It was true living with the nature. Without making any change in topography or tree pattern, the houses were constructed within the space available between the trees. Every house was different as the profile of the space was different and the requirements may be different. There I remembered my Amrai housing project (for which I got award at national level). There I had used to the same design approach and constructed 36 houses without cutting any tree. But it was a new housing project for urban people constructed by contractor using a temporary building materials and technology although I had attempted maximum natural aspects. Here at Gaundongri the design was much more natural. Every house had biological shape. No straight line, no right angle. The free curve shapes of layout of houses were not out of any fancy or notion of the designer, but the plan being evolved from the surroundings. Mangalore tiles which were newly laid were in no way getting well with the footprints of the houses. Mangalore tiles are a machine-made in commercial product requiring mechanical geometry of right angles etc. They were totally misfitting the free curve biological shapes of the walls and the room spaces. Even the courtyards had free biological shapes. This is the pre-historic, pre-Mohenjo-daro pattern of houses wherein man had thorough interaction with nature. I was astonished to see that

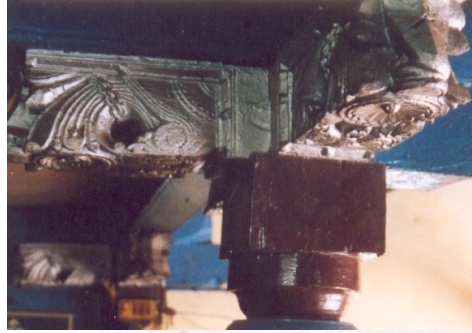
this pattern is still available to be seen though in a deforming stage. Here the houses do not show any hierarchy of rich and poor, upper class and lower class.

Houses of rich people, of landlords, and well-to-do people were having internal courtyards. Mostly there people maintained big joint families with brothers and cousins living together and the oldest person in the house acting as the head. Some of the big agriculturists, merchants, even head of fishermen had houses with internal courtyard. I have seen houses with 3 courtyards also. It was a high prestige to have house with such courtyards. In a typical house the entrance porch had built in seats of masonry or wood. This was called 'sandio' but later got popular with the Portuguese name 'balcao'.

Conservative use of the resources around was the mantra of the entire lifestyle. Construction of houses was no exception to that. The mud was from the same spot for walls and floor. Roofing rafters of dead coconut tree from the farm around, bamboos from the backyard. Roof cover from the coconut leaves.

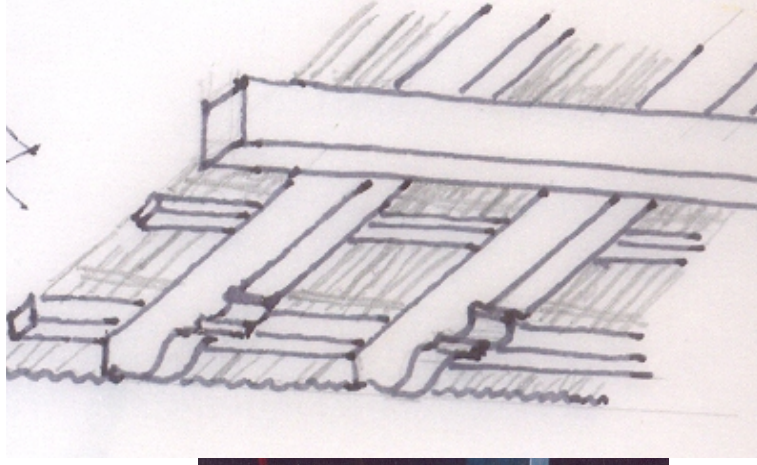
In case of forest communities wooden bullies and big bamboos were the rafters and grass was used as thatch. Doors in these areas were of bamboos only. In the agricultural village's security being more important, only the doors were of sawn timber. I have seen the old house of Shri Shripad Naik (present M. P. of North Goa) who hails from the traditional fisher folk community. Perhaps his family headed the community. His house which was of great importance in the community was a large house with internal courtyard. His main door was made from the re-used parts of wooden fishing boat. Even the wooden seat where visitors used to sit was from the re-used wood of the country craft.

The roof covers most of the village houses in up to mid of 20<sup>th</sup> century were of burnt clay country tiles. Factory made Mangalore tiles was a luxury.



*Typical Goan*

*pillar*



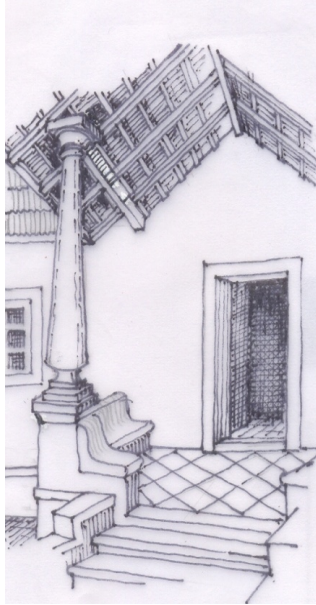
*Decorative rafter end*

Hindu houses of rich class were invariably courtyard houses. Imposing entrance with carved wooden columns, mostly of 'kumbhastambha' design. Intricately carved door jambs. Wooden or masonry seats were the features of entrance verandah. The main living space around the internal courtyard had richly carved wooden columns and windows with lathe-turned wooden balusters.

Carved wooden eaves board '*sundarpati*' and decorative rafter ends featured in the prominent parts of the house.

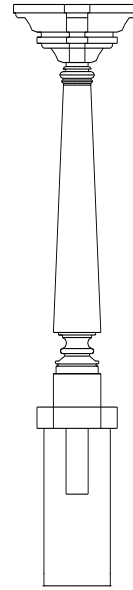
Each of the four sides of this courtyard had different functions and combined function on the occasion of big gathering for celebrations.

One side of the house was given prominence and height with a wider hall for religious celebrations like Ganesh festival and entertaining important persons.



After  
16<sup>th</sup>

*Balcao, Panaji-Goa  
pillar, Tamilnadu*  
the mass devastation in  
century, emerged an era  
especially for the



*Chettinad*  
the early half of  
of prosperity  
landlord among

the religious converts. Being accustomed to lifestyle, the plan of the houses with entrance porch verandah, internal court re-appeared in their houses. But the external appearance of the grandeur of the colonial style took prominence over the deep sense of human scale in their earlier counterpart. Lofty height, big size of doors and windows, and plaster designs was the style of the time.

But 'balcao' with masonry seats is the concept of 'Mukhamandap' of the temples and verandahs with column design are Indian only. Portugal does not have verandahs or balcao. Even the profile of the most popular wooden or masonry column of the verandah in these big Christian houses of Salcete, Tiswadi and Bardez is the almost the same as that of the palatial Chettiyar houses of Tamil Nadu. Being built during the same period identical architecture with the colonial influence appears to be an all India phenomena.

Safety hazards appeared in this period on account of socio-political conditions. These houses being vulnerable to attacks and loot had to provide inbuilt safety devices. Non conspicuous gun shooting holes, heavy stone dropping openings, confusing and lingering passages for the intruder and secret hideouts for wealth and female folks, tunneled escape paths were the main devices for big houses of rich class.

House was an abode of completeness. There used to be a designated room where child used to take birth. The long verandah and living-dining spaces were large enough for half a dozen children to play. Besides there was 'angon' to play during dry days. Raw agricultural crops brought to house were sorted, cleaned, dried, processed and stored or consumed. Around the house used to be variety of plants giving flowers, fruits, vegetables and medicines. The house besides agricultural equipments was well equipped with implements like grinding stone, rice pounding and poha making apparatus to bring food item to completeness for consumption.

Vocation of the family (which was cast-wise) being practiced in the home only. No separate training was required for the new generation.

Every house had a small shrine where daily pooja, prayers were held and occasional religious rites and rituals. Even the major ceremonies like marriages used to take place in the house only. Yearly turning of the roofing country tiles, before monsoon making the 'angon' and 'matov' after monsoon, repairs, maintenance, paintings, decorations were home activities. All these activities, religious and family rites, gatherings of relatives and neighbors, preparing sweets and specials, all were the celebrations of entertainment programs for the households of all the ages and training program for the youngsters. Sick and old were nursed, destitute were given asylum. Poverty and bounty both were shared. Caring of the mothers and aunts, love of the story telling grandma, the grandpa taking children to the village temple, respectful fear of the fathers and uncles exercising strict discipline were the remembering which every child of the house was carrying for the life time. Love and attachment towards home and homefolks was not necessary to be preached in these houses.

(Writer's Contact Information: *Khadpabandh, Ponda, Goa, India 403 401. Tel: +91-832-2312684.*)

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