ARCHITECTURE AND ART

TEACHERS KIT

DakshinaChitra

OUR HOUSES TELL US

HOW WE LIVE
&
WHAT WE VALUE

THINKING ABOUT THE HOUSES
WE SEE AND LIVE IN

THINK : FORM / STRUCTURE / MATERIALS
THINK : COMMUNITY / ENVIRONMENT
THINK : SPACES
THINK : DECORATION
THINK : BELIEFS

FORM, MATERIALS AND STRUCTURE

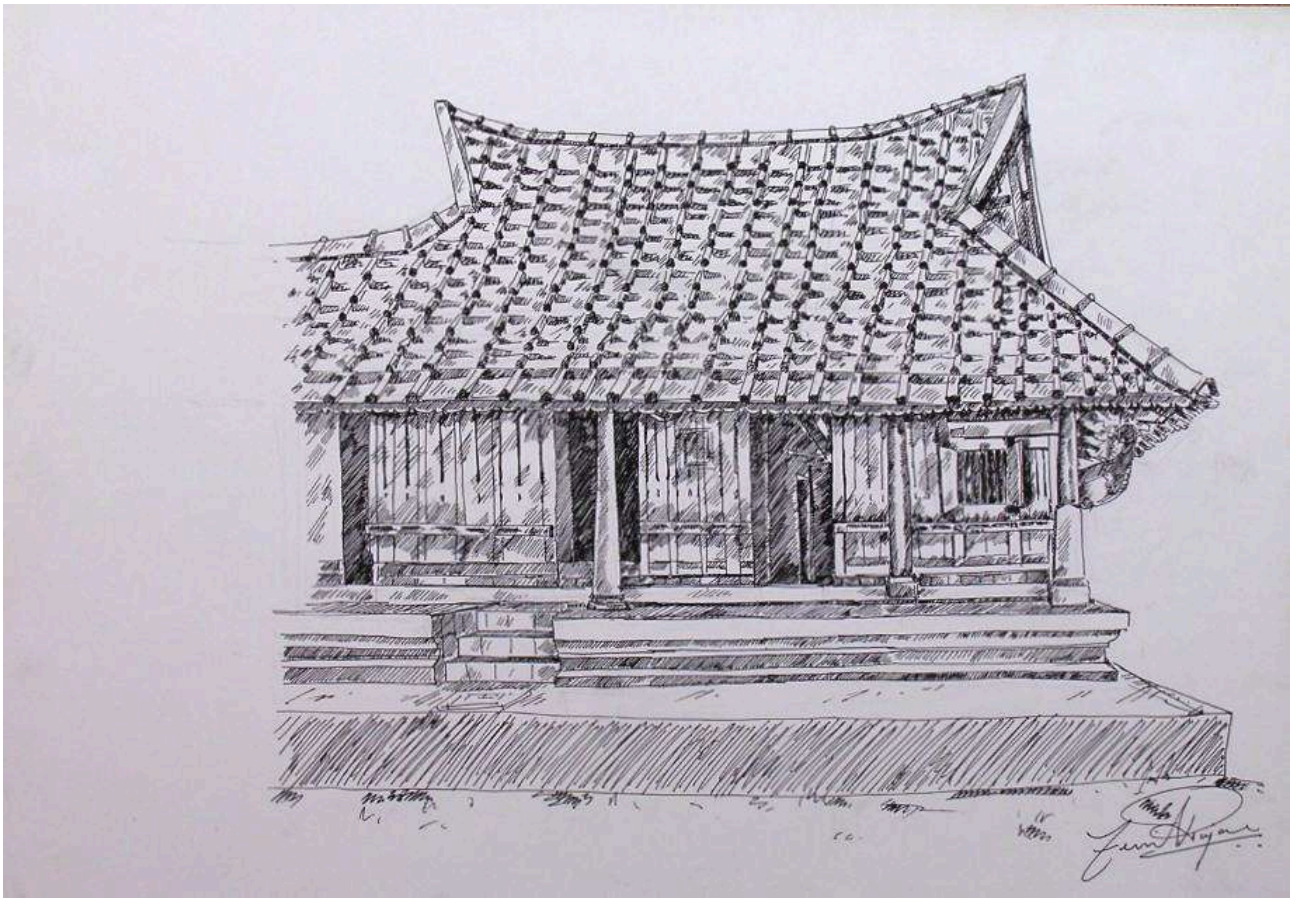
The **FORM and MATERIALS** used in a traditional house tell us about our environment. Houses from different ecological areas have different roof forms and use materials available in the environment to construct their roofs and to build their walls.

Traditional materials: wood, lime, thatch, bamboo, mud/clay, stone and laterite.

In **Kerala** the roofs are steeped at a 45' angle. They also extend far over the walls and are quite close to the ground. Originally these roofs were thatched with bamboo and had a bamboo or wooden structure underneath. After a big fire destroyed whole towns in the mid 1800s, the king finally gave permission to the citizens to make tiled roofs. Before that only if you had individual permission from the king could you tile your roof. The tiles were hand made in wooden moulds from the clay by the river beds. Even today Kerala tiles are among the highest quality tiles in the country. Today they are machine manufactured and are called Mangalore tiles. Early tiles were flat and were either rectangular or semi circular (from the Dutch style). The roofs were put at such a sharp angle so that the heavy monsoon rains of Kerala would run off quickly without touching or affecting the walls.

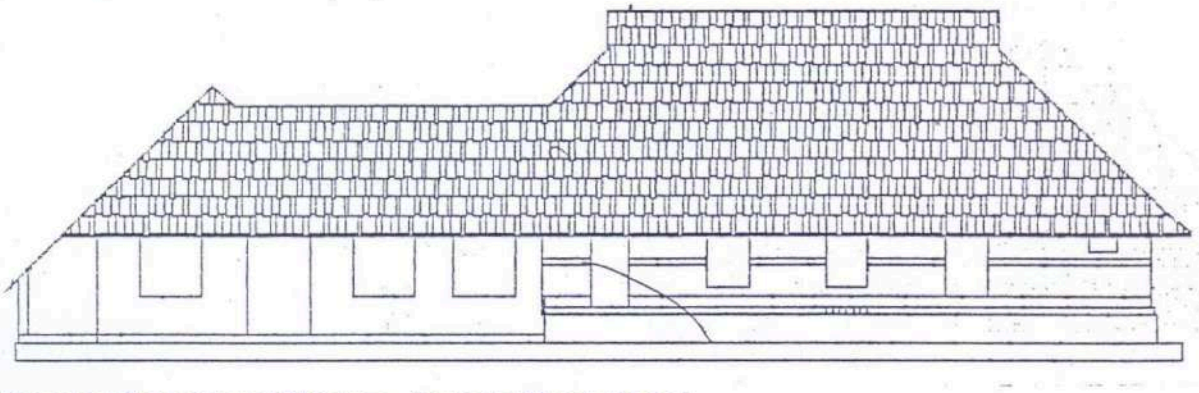
Southern Kerala had no clay or laterite for bricks for the walls like in the north of Kerala, but because of the heavy forests they had lots of timber. So the walls of Kerala houses are made completely of timber. The walls are grooved to give an all over design which also camouflages the different sizes of the width of the planks. They used jackfruit wood which was very hard and palm wood which grew abundantly. Kerala carpenters are very skilled. You won't find a single iron nail in an entire house. Structurally the walls rest on four large beams which act as the plinth and hold up the house.

HOUSES OF SOUTH KERALA

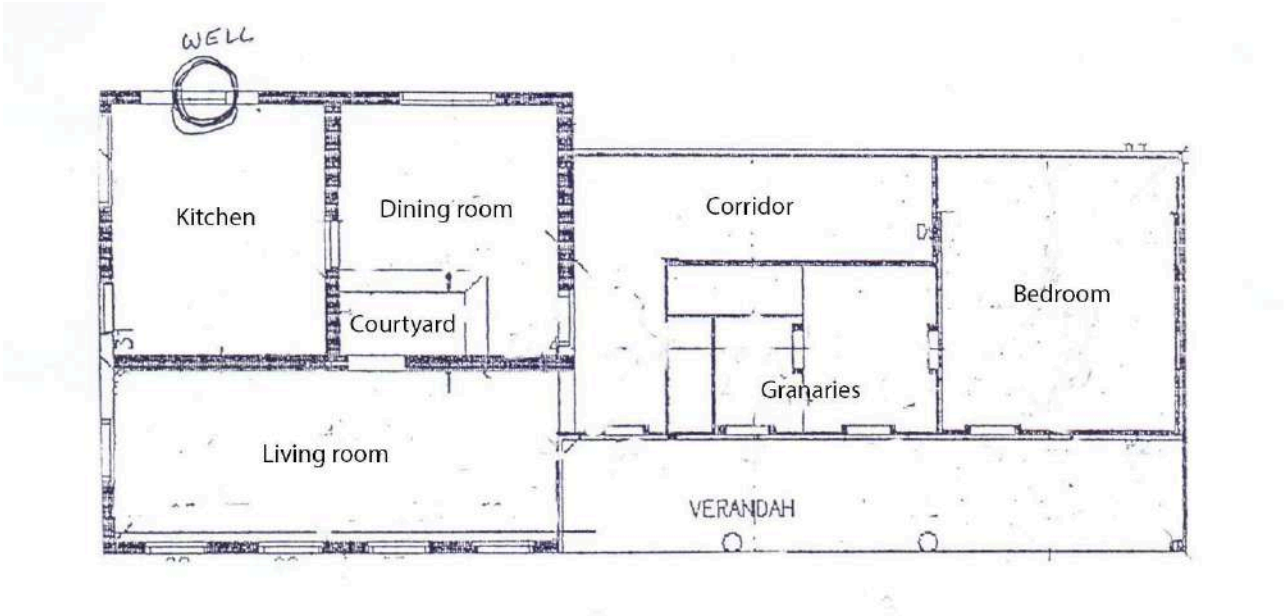


Steeply pitched roofs and wooden walls

HOUSE FROM SOUTH KERALA WITH WOODEN WALLS



SYRIAN CHRISTIAN HOUSE – FRONT ELEVATION
Benny Kuriakose



FLOOR PLAN SHOWING INSIDE SPACES

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KERALA HOUSE

Suggestions for discussion and questions:

Steep long roofs: Why are the roofs so steep at 45°?

What is the climate of Kerala?

Gables: Why do the roofs have gables?

Timber walls: Why do you think the walls have that specific design?

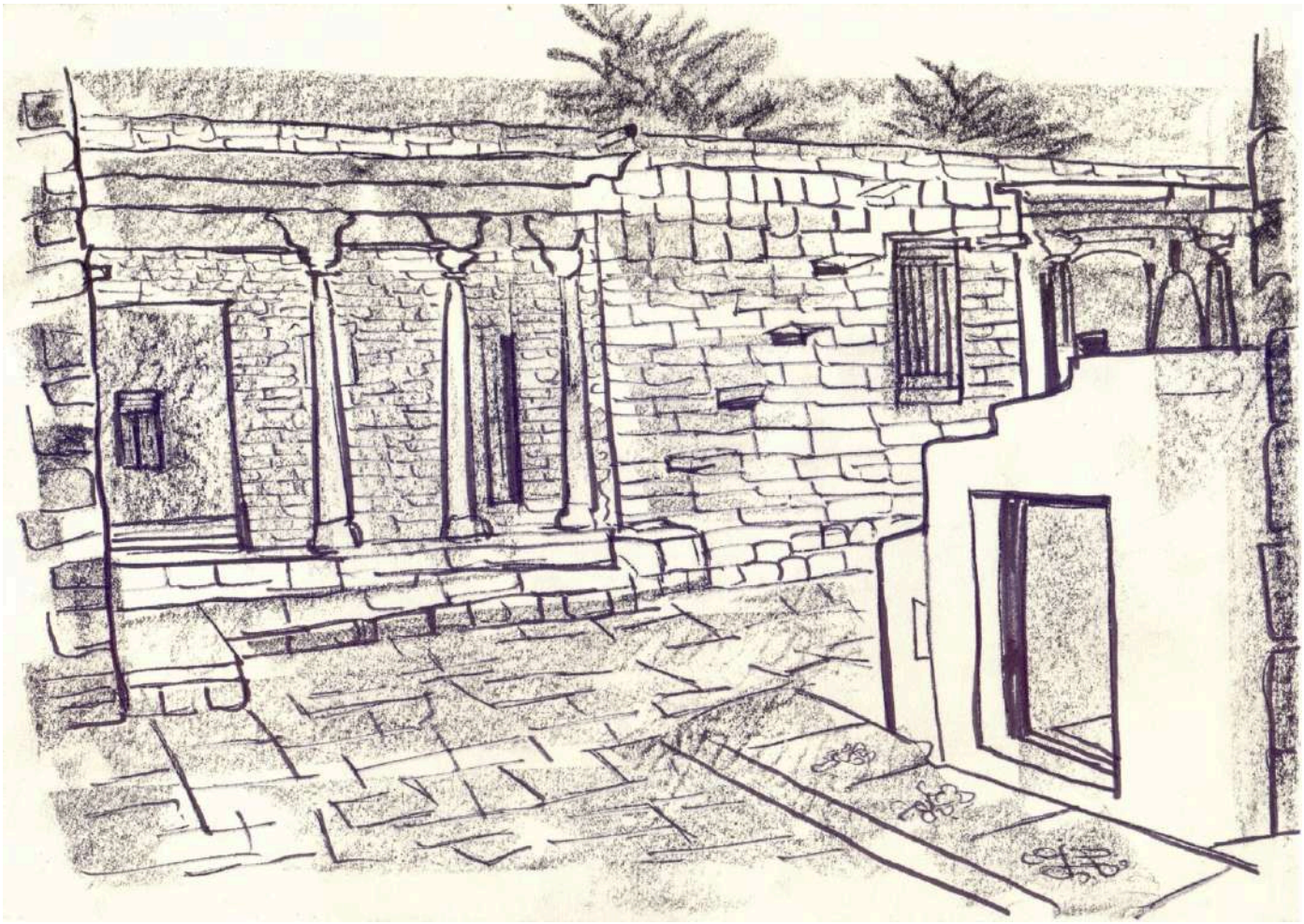
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The stone house from **Ilkal, in the north of Karnataka** sits in an area which has a lot of stone outcrops of granite. There is very little rain and in this arid environment there are few trees, and what there are, grow crooked because of lack of water. The roofs of an Ilkal house are flat. They are built of mud which sits on a body of small branches which themselves rest on a thin granite slab held up by wooden beams. To give light the people make holes in the roof and insert a round terracotta pot into the hole, which extends above the hole. The pot has its bottom cut out so light can come through. When it rains they just put a lid on it. After a little rain grass begins to grow on the roof. They will then often pack down more mud to make the roof more water tight. At DakshinaChitra we could not use mud or put the terracotta pots in a hole in the roof because of our heavy rains.

The walls are made of granite blocks. The floors are also of stone and outside the house granite steps are inserted into the wall to enable men to climb and fix the roof. The inside walls are smoothly plastered with fine lime from the limestone available nearby. After years of plastering, the walls look softly rounded like velvet. Plastering is done before festivals and marriages.

At DakshinaChitra our houses are joined in a cluster around an open courtyard with a shrine by a neem tree. There is also a snake shrine. People worship the Neem goddess and snakes to keep them from harm. The houses on the inside belong to weavers of the Ilkal saris. They use the courtyard for arranging the long warp threads before they put them on the loom.

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ILKAL WEAVERS HOUSE

Suggestions for discussion and questions

- What is the climate and environment of Northern Karnataka?
- Texture of the walls: Why are they made of stone?

- The flat roof: Why is it flat? How do they get light?
- What do they do during rains?
- What would the open courtyard be used for?
- The room with the loom is the only room in the house besides the kitchen.
- Where will the people sleep? How will the family live there?

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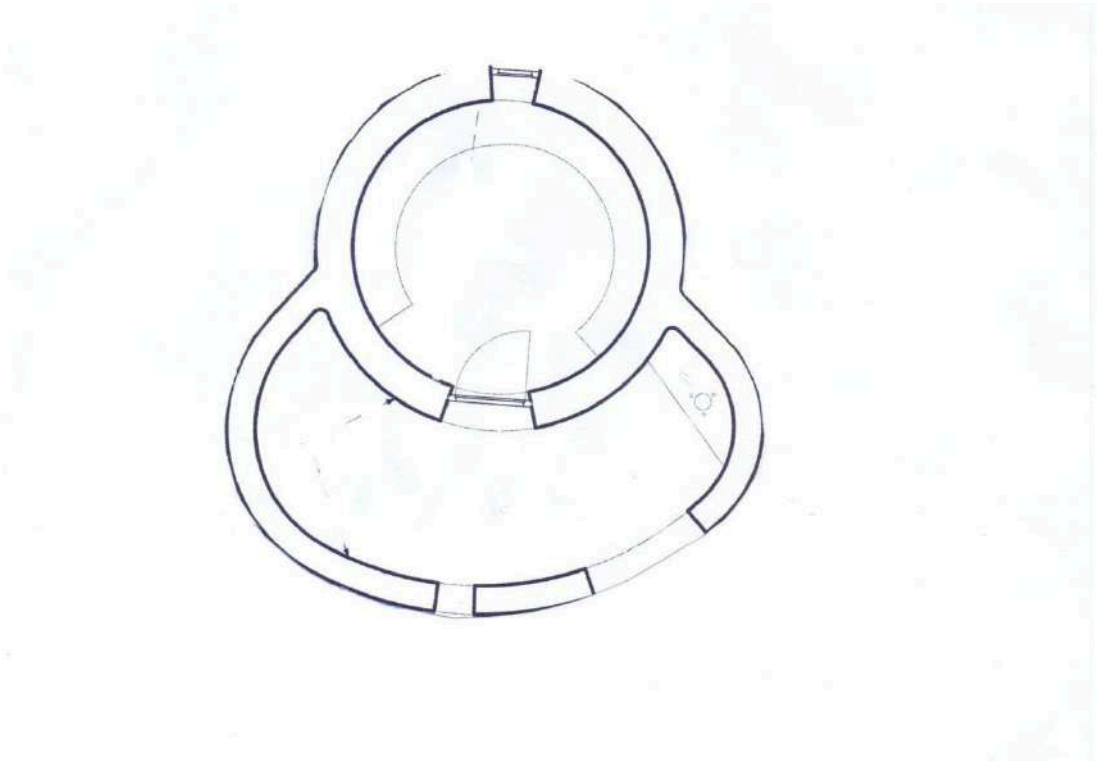
In **Andhra Pradesh the coastal region** is full of chutillu houses. These are round houses made of mud with a tall palmyra thatch roof resting on a bamboo structure. Mud and Palmyra trees are abundant everywhere on the coast. Rice husk is mixed with the mud and acts as a binder to give strength to the mud. The inside room is covered with a wooden roof which is packed with mud on the top. This is to keep the house from leaking but also to protect the inside house and give the people time to escape before the thatch catches fire. In case of severe cyclones and tidal waves, the roof is detachable and will float.

Mud houses take a great deal of care. They are washed with a mixture of cow dung slurry since the ammonia in the dung is antiseptic and keeps insects away and makes the wall strong as the slurry hardens. Everyday a section of the house must be treated. Until 50 years ago most of the houses in India had mud walls. Today still most houses use mud as a mortar. People took great pride in their houses and decorated them with designs, both inside and out. Their bronze kitchen vessels and tumblers had pride of place on their shelves. In West Bengal the typical bungalow was a two storied mud house with a thatch or tiled roof. The floors and roof were supported by bamboo rafters. Some of these houses are nearly 200 years old.

HOUSES FORMS AND SPACE

CHUTILLU AND CHULAH PLANS





THIS IS A HOUSE FROM COASTAL ANDHRA PRADESH, AN AREA PRONE TO CYCLONE

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CHUTTILLU HOUSE

Suggestions for discussion and questions:

Coastal Andhra is prone to cyclones.

How will the round shape and steep roof help in a cyclone?

Look at the materials. What are the materials used?

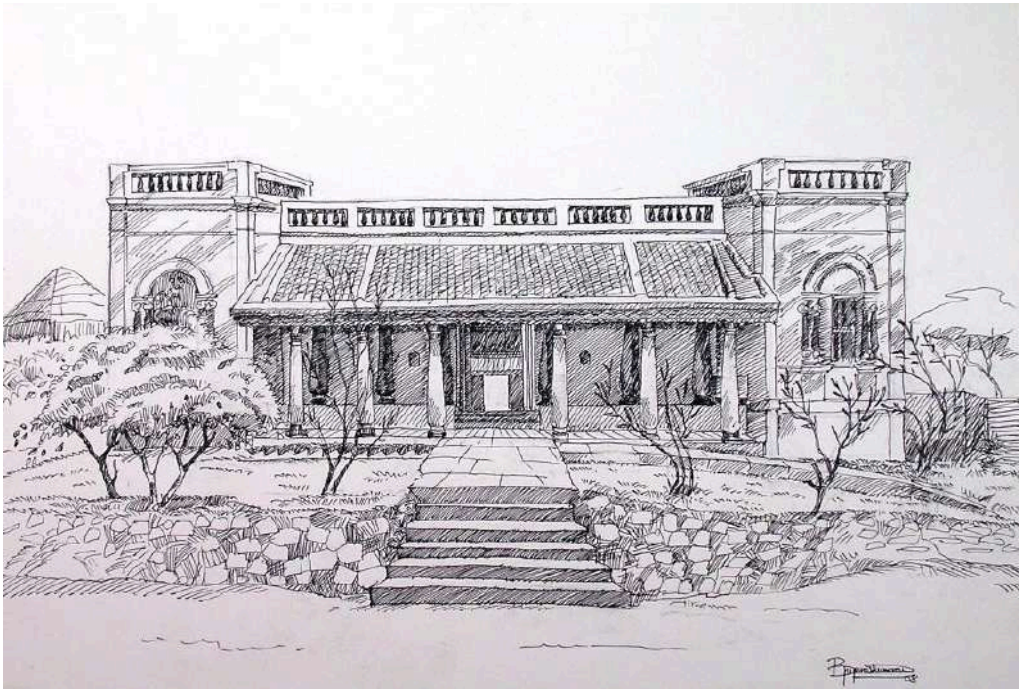
What is the lady doing in what material? Why?

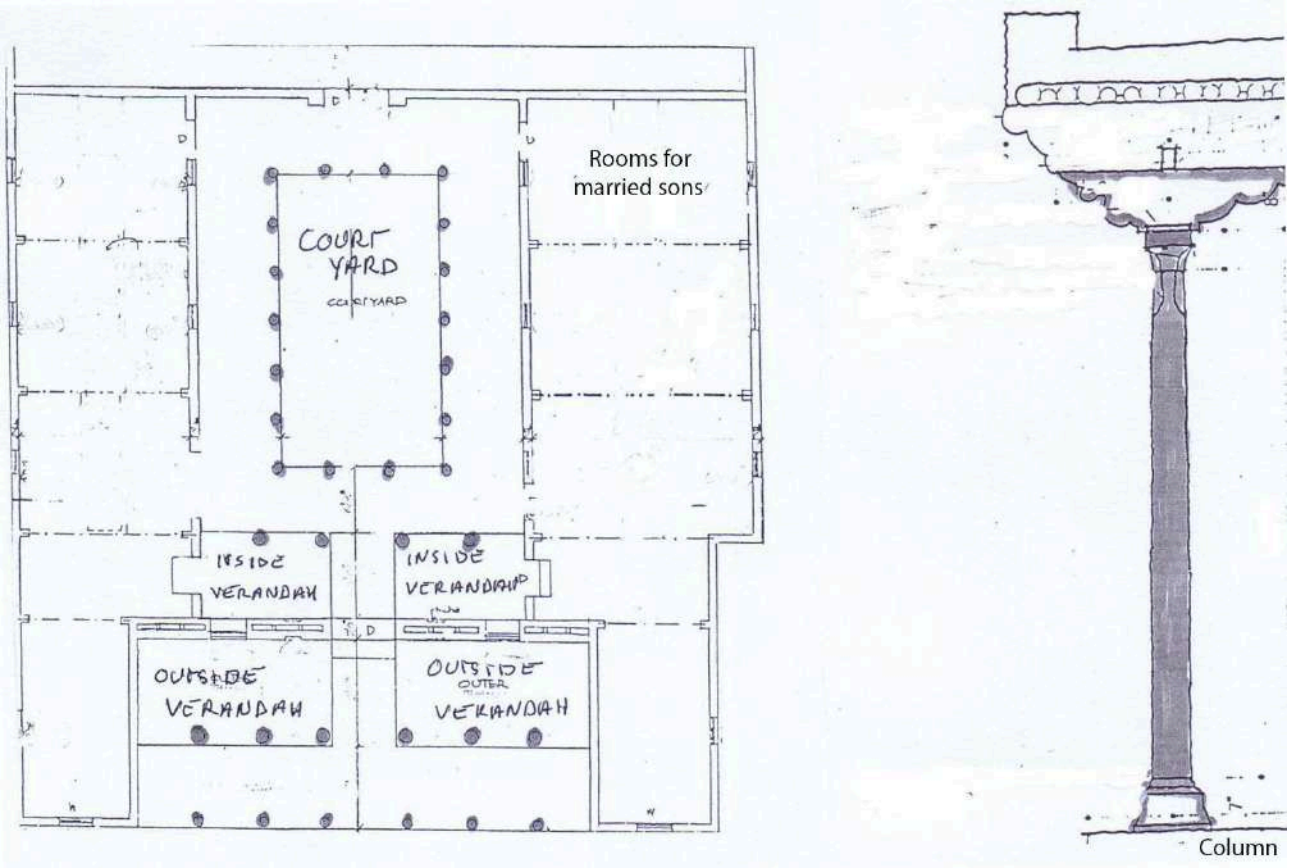
Tamilnadu is a semi arid state. Here houses were most often of mud or sun-dried brick .Country wood was used in the structure for the doors and

windows. The main feature of a Tamil house is its verandah. The outside verandah served as the living room for the family and for visitors. Only family members were allowed inside the house.

In large houses like the ***Merchant House*** the verandah was for men and visitors. The inside house also had raised platforms similar to the verandah. These were used for socialising. Everyone sat on mats, and sometimes the women would nap there. There was no need for furniture. Around the courtyard were small rooms. Each set of rooms was for a married son of the house and his family, but these rooms were mainly used for storing their possessions and for their prayers. The women usually slept in the women's courtyard, not shown on the plan where each family cooked and the men slept on the verandah inside. The courtyard is where weddings and special functions, even funerals, took place. The Nattukottai merchant houses functioned a little like a modern condominium with many separate dwellings and special common spaces, like the courtyard, the verandahs and the kitchen. Men and women spent most of their time in their own spaces. There was even a side door for women to enter so they wouldn't intrude on the men talking or working from the front verandah.

MERCHANT HOUSE, TAMIL NADU





COURTYARD AND VERANDAH ROOFS ARE SUPPORTED BY COLUMNS

SPACES

The spaces in every house vary by region and by the way the family needs to use the house. Have you noticed that bedrooms are few? People slept together mostly. If the house was very small cots were put outdoors for sleeping. Men and women usually slept in separate areas.

Each house, Christian or Hindu, had a separate place to put their deity or prayer corner. If they were Muslim they just prayed wherever, facing Mecca in the west. Kitchens were always in the back of the house. Bathrooms, were not common, but, if present were always put far away from the house in the back.

Public spaces and the environment

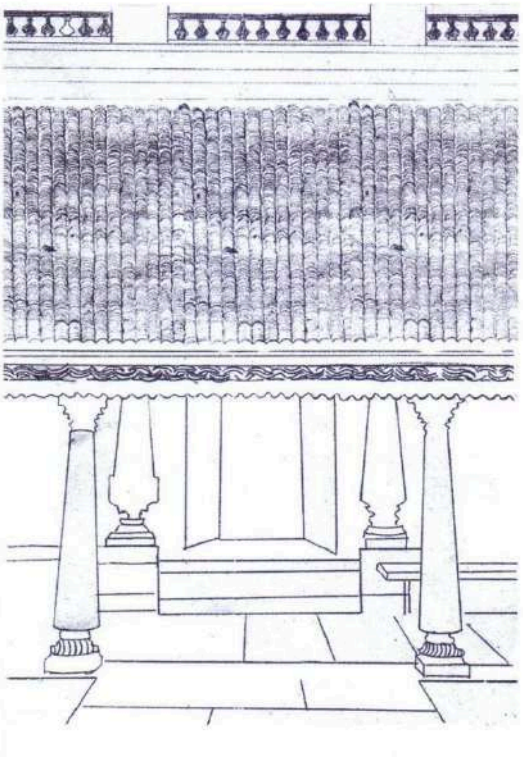
Water is a critical part of life and also determines how people live. In Kerala where water was plenty, houses were scattered in their own fields. Each house had its own tanks which were used for bathing and for agriculture. Since a lot of Kerala's population was Matrilineal (meaning property belonged to the women, not the men) the houses had wells half in the kitchen and half outside so women didn't have to work to bring water. In Tamilnadu where water was scarce, houses were all clustered together so that the walk to the common well would not be too long. This was also true in Andhra Pradesh. Also each street was occupied only by family members and relations, so the street functioned as a social venue and people sat in the evenings on their verandahs and chatted with their relations.

In northern Karnataka, farmers in agricultural houses put their animals in an open enclosed courtyard before the house to keep them safe and warm in winter. These houses had a well and/or or a large cistern (a big built in sump for holding water) inside the house near this courtyard.

Water in all the states was managed by the communities there who saw to it that the water was evenly distributed to the farms and that the channels were desilted regularly. They built small reservoirs (eris) which were interconnected to larger tanks should the monsoon be very heavy, so that they were ensured of water all year long. But once the government took on the responsibility of

providing piped water all these efforts have fallen into disuse, leaving people vulnerable to disasters and drought.

SPACES IN A SOUTH INDIAN HOUSE



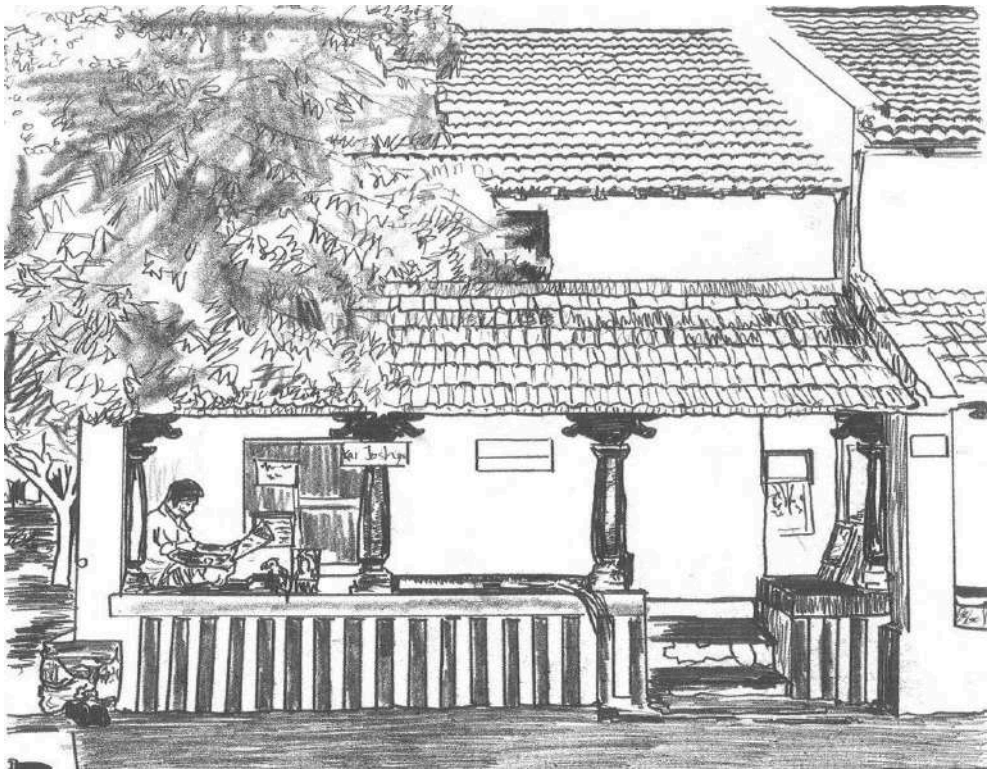
RAISED VERANDAHS AND ENTRACE WAYS ARE VERY IMPORTANT. WHY?



SOUTH INDIAN HOUSES HAD VERY LITTLE FURNITURE. WHY?

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TAMIL BRAHMIN HOUSE

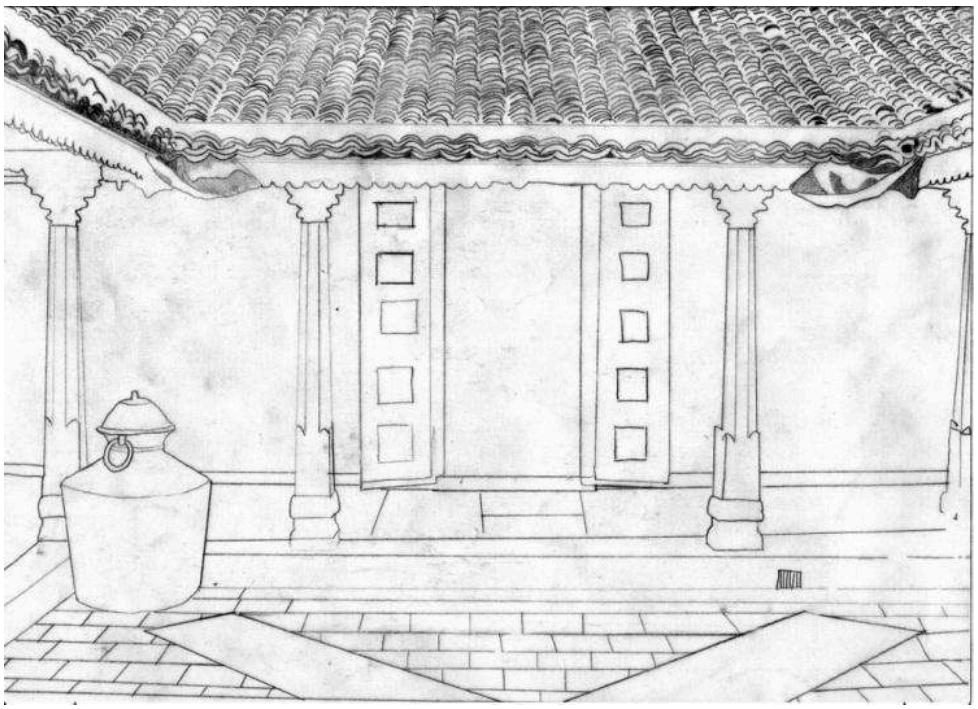




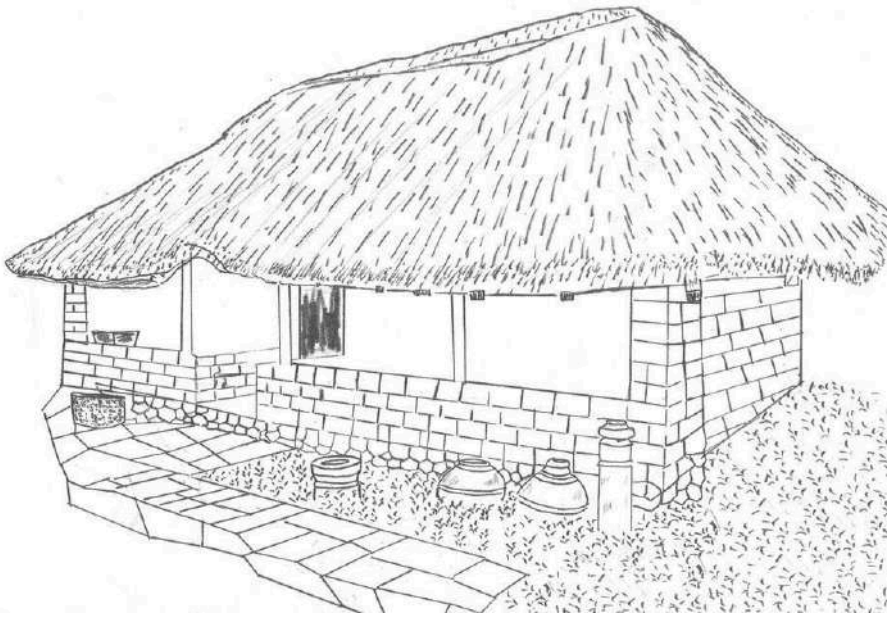
BRAHMIN HOUSES WERE CLUSTERED TOGETHER ALONG THE STREETS SURRONDING A TEMPLE. THIS IS CALLED AN *AGRAHARAM*

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SPACES



COURTYARDS ARE SPECIAL SPACES. THEY ARE THE SACRED CENTRE OF A HOUSE. THE VESSEL ON THE LEFT HOLDS RAIN WATER.



IF THE HOUSE HAS NO COURTYARD, THE OUTSIDE IS USED FOR SITTING AND SLEEPING AND OFTEN FOR COOKING. THE HOUSE IS SANCTIFIED THROUGH THE DRAWING OF KOLAMS AND LIGHTING THE LAMP.

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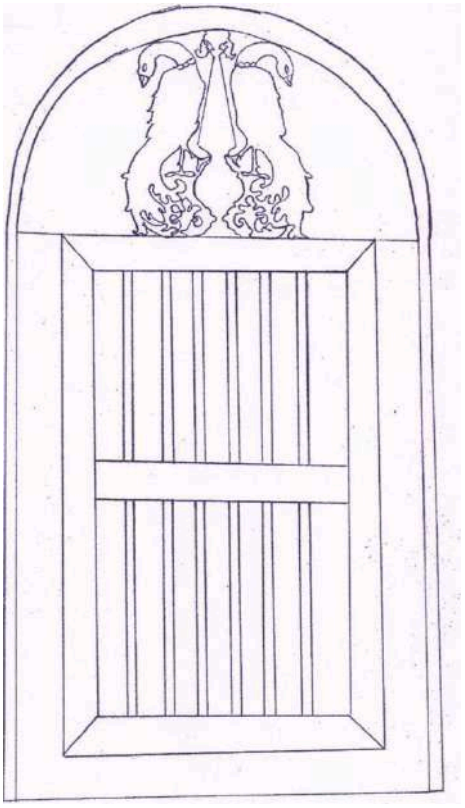
DECORATIONS AND DESIGN

Even the smallest hut had some decorations. Most often it was the front door. Doors were very important. They were the bridge between the outside public space and the inside sacred space. Door frames were decorated at the bottom with the abstract image of a mango leaf and then painted with tumeric and kumkum, both auspicious designs which also served to keep insects and rodents away. The panel above the door often had motifs from nature like parrots, *annapatchis* (a stylised bird like a goose or duck) and lotus blossoms, all considered very auspicious. More ornate doors had carvings of deities. In Andhra Pradesh the doors were flanked by two horse heads; in ornate doors on the merchant houses in Tamilnadu (like on the columns in the Tamilnadu temples of the 1600s) rearing horses with riders were carved..

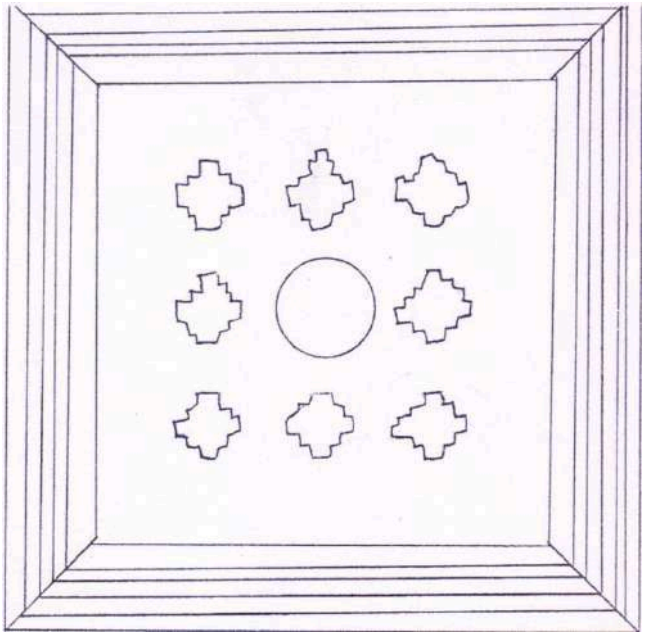
Wooden elements like the columns were carved with designs from nature. Beams often had lotus blossoms put on them. In Kerala the rafter ends were beautifully fashioned, and the horizontal tie beam was carved with images of animals, fish and tortoise.

As electricity was absent, beautiful niches were put in the walls to hold the small delicate bronze lamps.

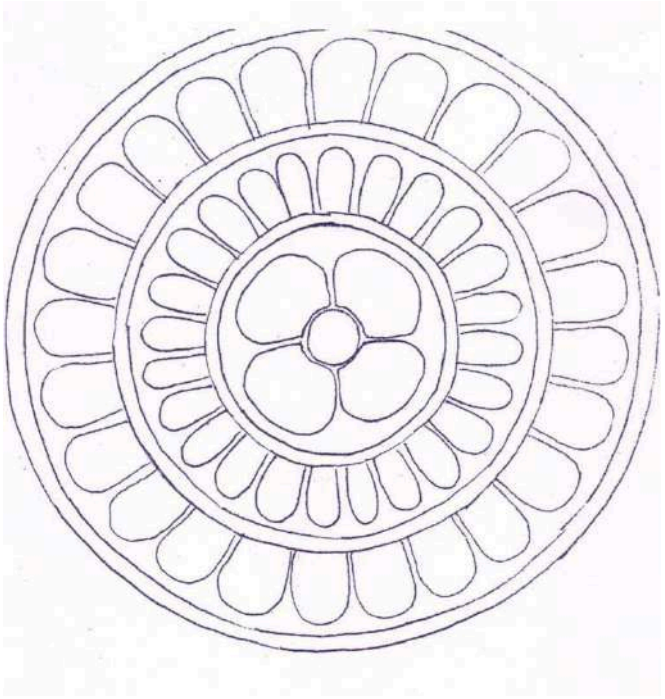
The exterior of the house was often decorated with plaster and stucco designs. The motifs were of deities, birds, geometrical designs and of people. Here is a drawing taken from a Chettiar house by the artist Narendra Babu.

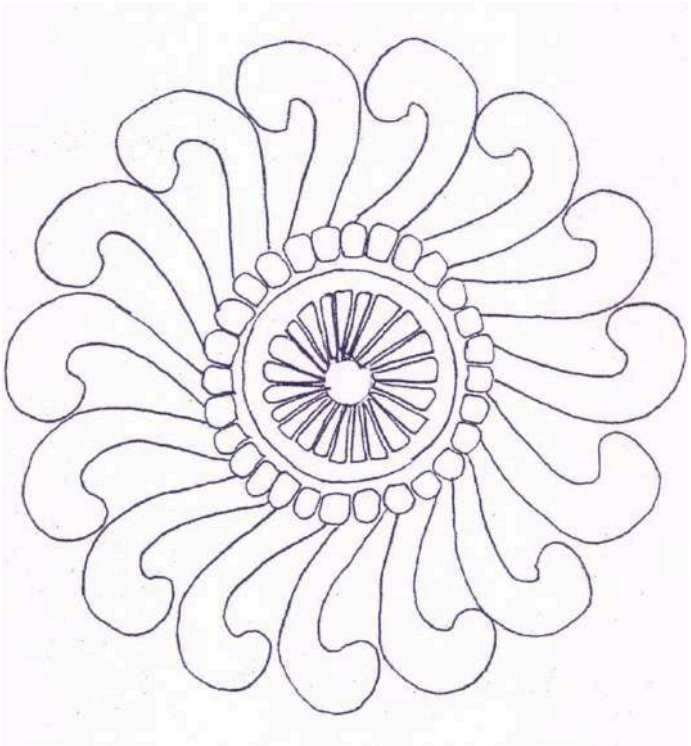


Tamilnadu window

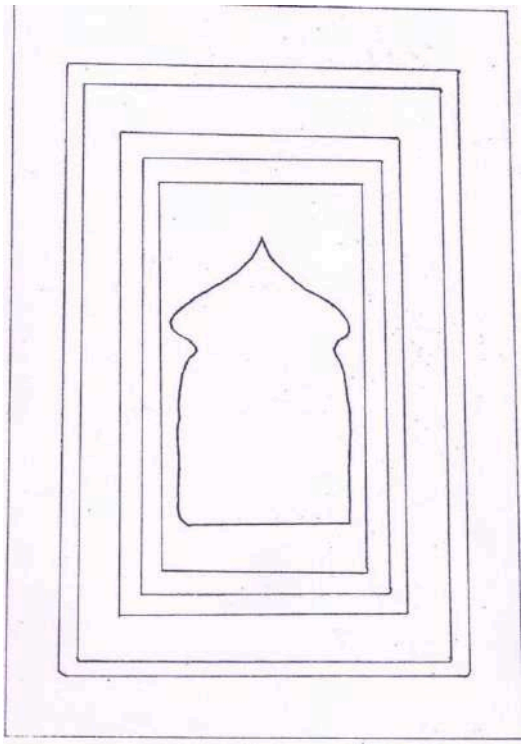


Kerala windows

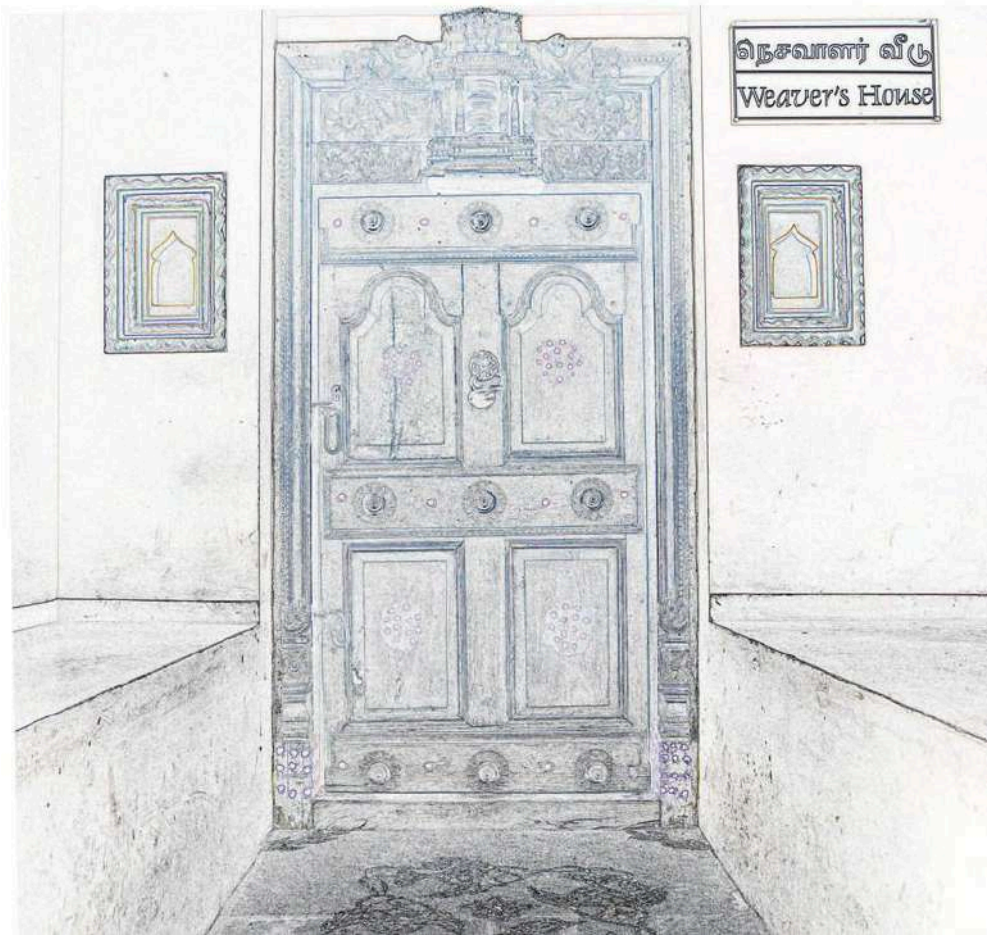




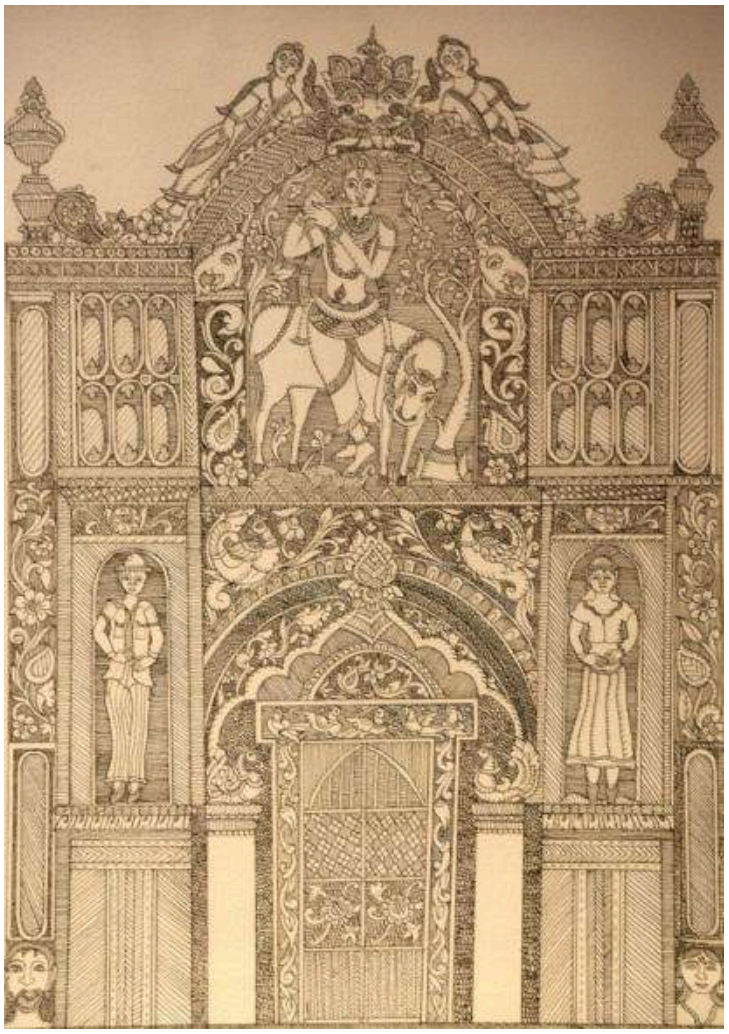
Lotus designs



Niche for a lamp



Door with decoration
Tamilnadu



Drawing of the stucco work on a Chettinad house

BELIEFS

People decorate their houses because they like to be surrounded by beauty. But could there be other reasons why people decorate their houses? Why in the South do people, mainly women, draw beautiful designs (kolams, kalams) in front of their homes at sunrise each morning. These designs originally represented the sun and the four cardinal directions (N S E W). Today they have become colourful and decorative.

Why is the lotus such a popular motif, not only with Hindus, but with Buddhists, Jains and even in Islam in India? The lotus grows in mud, grows upward through water and opens high above the water in the sky. Why would this be regarded as significant?

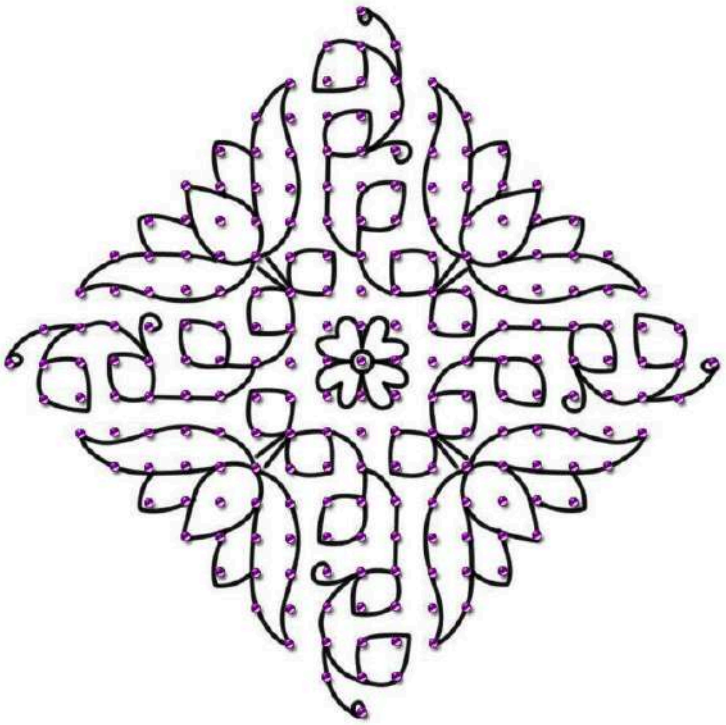
Why do many houses put a lit oil lamp in their open doorway at sunset and sunrise?

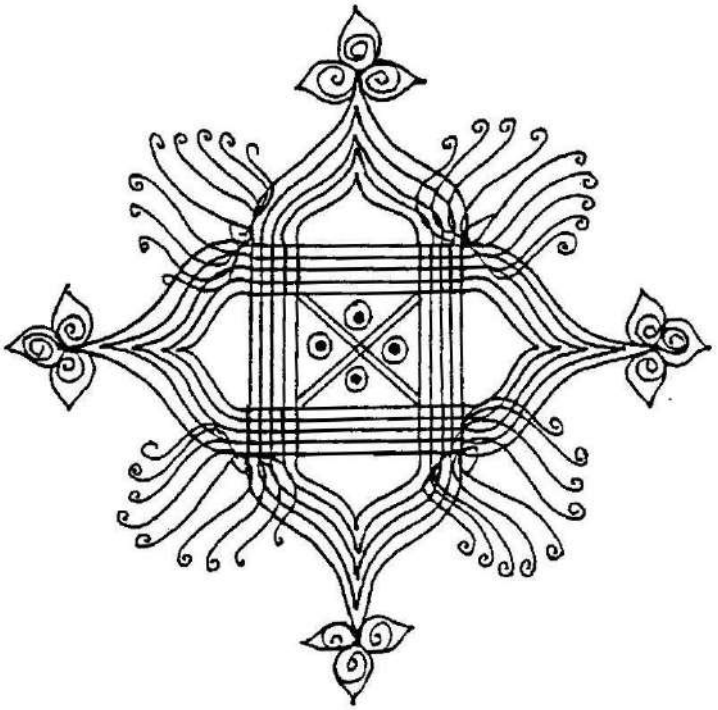
How do people feel about a house? Is a house only a shelter for us to live in or is it something more?

Indian belief systems run very deep and have been recorded over many centuries. Houses are thought to be a micro cosmos of the larger macro cosmos of the universe. A house is thought to be vulnerable at its corners and outside and sacred at its centre. Everyday we have to take care that we keep out the bad energies and help to bring in the good energies which will keep us healthy, mentally and physically, and prosperous. Even today, shopkeepers will not sweep their stores at night since they feel they will sweep the presence of the Goddess Lakshmi out with the dust. Older people like to keep their front door open always so that Lakshmi can enter.

Beneath all these individual beliefs is the feeling that we are a part of the greater cosmos which is represented on earth by nature, the life giving earth and the sun, the rains that give us our trees and rivers and the bountiful nature around us and we must take care of them and ourselves through a **daily renewal** of our appreciation. In a sense, a house is viewed as a living organic entity. In the south there are many ceremonies involved in building a house. the first is to test the soil by creating a small water hole in which a blossom is put. It must float clockwise; second there is an elaborate ceremony to the nine planets, called the ground breaking ceremony. There is another ceremony when the main door frame is erected, and a small packet of the *navaratna*, the nine auspicious stones, are placed under the frame. Lastly there is the *grahapravehsam*, the housewarming ceremony during which rituals are conducted and fresh rice and milk are boiled on the stove, like Pongal. On all occasions the auspicious mandalas, the *kolams,* are drawn. Earlier a cow would have been led through the house. Many other ceremonies, mainly involving the head *asari* (carpenter) or *stapathi* would have been conducted during the course of the building. These have now been dispensed with.

So a house is not just a building. It is much more in Indian thought. There are many texts which speak about these beliefs and the architecture like the Brihat Samhita (6th century ACE) and the Shilpa Shastras (circ. 10th c ACE) and several more. Most of these beliefs are alive and still practiced today.





Kolams

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ACTIVITIES

1. Draw a Floor plan of the house you live in now. Think about each of the spaces and how you use them. How are they different from the spaces in the houses represented? Why do you think such a change in using space has come about?

2. Draw your ideal house.
How many people would live in your house.(earlier houses had many families in a single space). How would you design your spaces and what would be the spaces you would have?

3. Design the front exterior of your ideal house?
What decorations and motifs would you use? What would you decorate?

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VOCABULARY

AMMONIA : A colourless gas with a characteristic pungent smell, which dissolves in water to give a strongly alkaline solution used as a cleaning fluid and found in cow dung.

ARCHITECTURE: the art or practice of designing and constructing buildings.

BEAMS : A long, sturdy piece of squared timber or metal used to support the roof or walls of a building.

CHUTILLU : Coastal traditional mud huts of Andhra with thatched roofs named chuttillu, meaning round house. Prone to cyclones, these houses were designed to withstand high-pressure winds and rain.

CISTERN: A tank for storing water. An underground reservoir for rain water.

CLUSTER : A group of similar things or people positioned or occurring closely together.

COURTYARD : An unroofed area that is completely or partially enclosed by walls or buildings, typically one forming part of a castle or large house.

FLEXIBILITY: The ability to be easily modified.

FLOOR PLAN: A scale diagram of the arrangement of rooms in one storey of a building

GABLE: The triangular upper part of a wall at the end of a ridged roof.

GRAHAPRAVEHSAM : House warming ceremony. It represents a search for completeness and self-unity.

KOLAMS : Kolam is a traditional drawing of rice flour which represents the sun and all directions. Today colored powders and decorative designs are drawn in South India.

LATERITE : A reddish clayey material with pebbles, forming a topsoil in some tropical or subtropical regions and sometimes used for building. Laterite hardens when exposed to oxygen and left to dry.

MACRO COSMOS: The larger universe with sun, planets and stars etc.

MANDALAS : A geometrical design representing the universe in Hindu, Jain and Buddhist symbolism. In Hinduism, the universe is represented as square.

MICRO COSMOS : Our inhabited earth which reflects the larger universe.

MORTAR : A binder used to hold bricks and stones together in building construction. Also a receptacle in which medicines or spices are crushed or ground.

NAVA RATNA : Nine gems

PALMYRA : An Asian fan palm which yields a wide range of useful products, including timber, fibre, and fruit.

PLASTERING : Cover for a wall, ceiling, or other structures. A plaster can be of lime, cement or mud.

PLINTH : A heavy base supporting a statue or vase or a house.

PONGAL : A Tamil harvest festival: A southern Indian sweet dish of rice cooked with jaggery.

RAFTER : A wood section forming part of the internal framework of a roof.

RESERVOIRS : A large natural or artificial lake used as a source of water supply.

RICE HUSK : Rice hulls (or rice husks) are the hard protecting coverings of grains of rice. In addition to protecting rice during the growing season, rice hulls can be put to use as building material, fertilizer, insulation material, or fuel.

SILT : Earthy matter, fine sand, or the like carried by moving or running water and deposited as a sediment.

SLURRY : A semi-liquid mixture

STAPATHY : An Architect, a master carpenter or builder.

VERANDAH : A roofed platform along the outside of a house

VULNERABLE : Exposed to the possibility of being attacked or harmed, either physically or emotionally.

WARP : (In weaving) the lengthwise threads on a loom.

WEFT THREADS : The crosswise threads on a loom that are passed over and under the warp threads to make cloth.

EXTERIOR : The outer surface or structure of something.

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OUR HOUSES: LESSON PLAN

Enduring understanding:
What do they tell us about how we want to live and what we value?
The way we live tells us so much about our environment, what we value, what we believe in and how and why we live the way we do.

Essential questions:

1. How are they different from the spaces in the houses represented?
2. Why do you think such a change in using space has come about?
3. Does the number of people who live in a house affect the design of the house?
4. Does the geographical location affect the aesthetic design of the house?
5. Does the geographical location affect the materials used in building house?

Objective:
To observe and record the space we live in

To understand the importance of the layout of the house and its purpose
To identify the materials used in building the house
To understand the structural aesthetics of the house

Materials needed:

1. A4 paper
2. Drawing pencils
3. Erasers
4. Rulers
5. Sharpeners
6. Resource material – information about different types of houses in South India

Activities:

1.Draw a floor plan of the house you live in now.
Think about each of the spaces and how you use them.

2. Draw your ideal house.
How many people would live in your house? (Earlier houses had many families in a single space).
How would you design your spaces and what would be the spaces you would have?

3. Design the front exterior of your ideal house?
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Vocabulary:
Laterite, Beams, Plinth, Plastering, Cluster, Weft Threads, Chutillu, Palmyra, Rice Husk, Slurry, Amonia, Mortar, Verandah, Courtyard, Flexibility, Weft, Cistern, Desilted, Exterior, Sthapathy, Kolams, Pongal, Mandalas, Grahapravehsam, Vulnerable, Micro Cosmos, Rafters and Reservoirs.

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Sample of a modern floor plan: First Floor



Sample of an Elevation: A modern house borrowing its form from a traditional Kerala house

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