**KERALA ARCHITECTURE**

 The cultural heritage of any country is seen best exposed in its architecture. Kerala abounds with many such architectural monuments-prehistoric megaliths, tombs, caves, temples, mosques, churches, theatres, houses, palaces and public buildings, built and renovated over centuries representing a panorama of architectural development. The aesthetic appeal of these buildings mainly arise from the simplicity of form and functional perfection.

GEOGRAPHY AND ITS EFFECTS

The characteristic regional expression of Kerala architecture results from the geographical, climatic and historic factors. Geographically Kerala is a narrow strip of land lying in between western seaboard of peninsular India and confined between the towering Western Ghats and the vast Arabian sea. Favoured by plentiful rains and bright sunshines, this land is lush green with vegetation and rich in animal life. The architecture of this region has been of a humble scale, merging with nature.

 In the uneven terrain of this region human habitation is distributed thickly in the fertile low-lands and sparsely towards the hostile highlands. Clustered houses are rarely seen in villages. Large cities are also absent in this landscape. The form of the buildings with low walls, sloping roof and projecting caves was mostly evolved from climatic considerations - for protection from excessive rain and intense solar radiation. The setting of the building in the open garden plot was again necessitated by the requirement of wind for giving comfort in the humid climate.

 MATERIALS

 The natural building materials available for construction in Kerala are stones, timber, clay and palm leaves.

1) GRANITE : Granite is a strong and durable building stone; however its availability is restricted mostly to the highlands and only marginally to other zones. Owing to this, the skill in quarrying, dressing and sculpturing of stone is scarce in Kerala.

2) LATERITE : Laterite on the other hand is the most abundant stone found as outcrops in most zones. Soft laterite available at shallow depth can be easily cut, dressed and used as building blocks. It is a rare local stone which gets stronger and durable with exposure at atmospheric air. Laterite blocks may be bonded in mortars of shell lime, which has been the classic binding material used in traditional buildings. Lime mortar can be improved in strength and performance by admixtures of vegetable juices. Such enriched mortars were used for plastering or for serving as the base for mural painting and low relief work.

3)Timber is the prime structural material abundantly available in many varieties in Kerala - from bamboo to teak. Perhaps the skilful choice of timber, accurate joinery, artful assembly and delicate carving of wood work for columns, walls and roofs frames are the unique characteristics of Kerala architecture.
4) Clay was used in many forms - for walling, in filling the timber floors and making bricks and tiles after pugging and tempering with admixtures. Palm leaves were used effectively for thatching the roofs and for making partition walls.

MODE OF CONSTRUCTION

A mixed mode of construction was evolved in Kerala architecture. The stone work was restricted to the plinth even in importat buildings such as temples. Laterite was used for walls. The roof structure in timber was covered with palm leaf thatching for most buildings and rarely with tiles for palaces or temples. The exterior of the laterite walls were either left as such or plastered with lime mortar to serve as the base for mural painting. The sculpturing of the stone was mainly moulding in horizontal bands in the plinth portion (*adhistans*) whereas the carving of timber covered all elements \_ pillars, beams, ceiling, rafters and the supporting brackets.

INFLUENCE OF BUDDHISM IN KERALA ARCHITECTURE

1)The circular temples basically follow the shapes of theBuddhist *stupas*, the dome shaped mounds. The apsidal temples are modelled in the pattern of *chaitya* halls,the assembly halls of Buddhist monks.

2) The *chaitya* window seen repeated in the decorative moulding of the *thorana* around the temple shrine is clearly a Buddhist motif adopted in Hindu style,

3) *Thorana* is a gateway provided in the palisade seen in the vertical and horizontal members of the *vilakkumada*m, which is a feature seen only in Kerala temples.It also resembles the temple cloisters(chuttambalam) arounde the temple shrine complex(srikovil

TRADITIONAL DOMESTIC ARCHITECTURE

The evolution of domestic architecture of Kerala followed closely the trend of development in temple architecture.

The primitive models were huts made of bamboo frame thatched with leaves in circular, square or rectangular plain shapes. The rectangular shape with a hipped roof appears to have been finally evolved from functional consideration. Structurally the roof frame was supported on the pillars on walls erected on a plinth raised from the ground for protection against dampness and insects in the tropical climate. Often the walls were also of timbers abundantly available in the land.

The roof frame consisted of the bressumer or wall plate which supported lower ends of the rafters, the upper ends being connected to the ridge. The weight of the rafters and the roof covering created a sage in the ridge when the ridge piece was made of flexible materials like bamboo. This sage however remained as the hall-mark of roof construction even when strong timber was used for the roof frame.

Further gable windows were evolved at the two ends to provide attic ventilation when ceiling was incorporated for the room spaces. This ensured air circulation and thermal control for the roof.

The lower ends of the rafters projected much beyond the walls to shade the walls from the sun and driving rain. The closed form of the Kerala houses was thus gradually evolved from technical considerations. One can see the striking similarity of this form with the temple structure. The plinth, the lower most part is still called *adisthana,* though it is plain or less ornate. The *sthambas* or pillars and *bhithis* or walls are again of simple shape with no projection or recesses.

The main door faces only in one cardinal direction and the windows are small and are made like pierced screens of wood. The rectangular plan is usually divided into two or three activity rooms with access from a front passage. The projecting caves cover a *verandah* all round.

Basically the domestic architecture of Kerala follows the style of detached building.

In its most developed form the typical Kerala house is a courtyard type - *nalukettu.* The central courtyard is an outdoor living space which may house some object of cult worship such as a raised bed for *tulssi* or jasmine (*mullathara*). The four halls enclosing the courtyard, identical to the *nalambalam* of the temple, may be divided into several rooms for different activities such as cooking, dinning, sleeping, studying, storage of grains etc. Depending on the size and importance of the household the building may have one or two upper storeys (*malika*) or further enclosed courtyard by repetition of the *nalukettu* to form *ettukettu* (eight halled building) or a cluster of such courtyards.

* There are numerous buildings of the *nalukettu* type in different parts of Kerala, though many of them are in a poor state of maintenance. Changing socio-economic conditions have split up the joint-family system centered around the large *nalukettu.* The *Kailasa mandiram* at Kottakkal belonging to the Arya Vaidyasala is a standing example of a three storeyed *nalukettu* complex. Of the best preserved examples of this type are Mattancherry palace at Kochi and the *taikottaram* of the Padmanabhapuram palace near Kanyakumari.
* SALAS
* *Nalukettu* is a combination of four halls along four cardinal directions, centered around the courtyard or *anganam* one may build any one of the four halls (*ekasala*), a combination of two (*dwisala*) or a complex of three (*thrisala*) depending on the needs. The most commonly found type in Kerala is the *ekasala*facing east or north. Being located on the western and southern sides of the *anganam* they are referred as western hall (*padinjattini*) and southern hall (*thekkini*) respectively.
* The core unit of *ekasala* consists of generally three rooms connected to a front passage. The central room is used as prayer room and grain store and the two side rooms are used as living rooms. The core unit may be raised to an upper storey with a steep stair located in the front passage. The building may also be extended horizontally on all the four sides adding *alindams* or side rooms for activities such as cooking, dining, additional sleeping rooms, front hall for receiving guests etc.
* If needed *ekasala* may also be provided with ancillary buildings for cattle keeping, barn, bathing rooms near tanks, outhouse for guests, gate house etc. By such extension the building may become much larger than a *nalukettu* in space, but it is still categorized as *ekasala* with reference to its core unit.

**SPACES DEFINED**

1. 'Natasaala' & 'Poomukham' (Drawing Room) - Place to receive persons of all castes who have no 'Theendal'
**2.** 'Padinjattithara' (The western wing of quadrangular type of house) - Place to receive respected persons and serve them meals.
**3.** 'Deenamuri' (Sick Room) - Room for sick male members.
**4.** 'Vadukkini' (The northern part) - Place to do rituals like 'Oupaasanam', 'Sraadham', etc.
**5.** 'Meladukkala' - Day-to-day dinner hall for Namboothiris.
**6.** Room used by ladies at the time of menses.
**7.** 'Kalavara' (Store room) - Room to store Rice, Coconut Oil, Coconuts, etc.
**8.** 'Paathrakkalavara' (Vessel store room) - Room to store vessels which are not in daily use.

**9.** 'Puthanara' (New chamber) - Room to store pickles and keep luggage of Antharjanams.
**10.** 'Vadakke Akam' - Labour Room
**11.** 'Vadakke Kett' - Lunch hall for Namboothiris for noon meals.
**12.** 'Cheriya Meladukkala' or 'Thundanadukkala' - Dinner hall for Antharjanams.
**13.** 'Sreelaakam' - Worship Room
**14.** 'Morakam' - Kitchen store room to keep buttermilk, etc.
**15.** 'Adukkala' - Kitchen
**16.** 'Kizhakke Kett' ('Vadakketh') - Dinner hall for Antharjanams.
**17.** 'Kizhakke Kett' ('Thekketh') - Dinner hall for Namboothiris on special occassions.
**18.** 'Oottupura' - Place to prepare feast on special occasions.
**19.** 'Nadumittam' - Inner courtyard or quadrangle.