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## SUSTAINABLE BUILDINGS - TOKYO 2005

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**Summary**

The vernacular architecture of Kerala is very unique in its style and has been derived out of age, respecting its social, cultural, economical and religious settings. This paper clearly intends to study the cause and meaning of such an architecture, and it tries to find out its sustainability in relation to the environment.

Here, it could be understood that neither the built forms ruled the nature and nature the built forms, but the two domains remained coexistent in perfect balance.

*“Having bowed his head before the omniscient God,  
 Lord of the Universe, and having listened to Him,  
 Maya, wise and learned architect, proclaimed this  
 systematic treatise which is the basis of success  
 for every kind of dwelling intended for gods and  
 men and which contains the characteristics of  
 dwellings for all”.*

Mayamata, 1.1-2

**THE MANUSHALAYA CHANDRIKA**

There is unmistakable evidence that treatises like the Manasara, the Mayamata, and the Silpa – Ratna were available in Kerala from very ancient times. The buildings of Kerala are among the ten types of the most beautiful buildings described in the Manasara, but the Tantra Samuchchaya, written by Narayana during the 15<sup>th</sup> century A.D., is the earliest existing architectural treatise originating in Kerala. Other important works are the Silpa – Ratnam by Sri Kumara (16<sup>th</sup> century A.D.), the Vastu – Vidya, and the Manushalaya Chandrika. The Vastu - Vidya and the Manushalayaya Chandrika are unique among the Vastu Sastras, being among the few works which are devoted almost exclusively to domestic architecture. The Vastu – Vidya has sixteen chapters dealing with various aspects of this type of architecture. It acknowledges as its source an earlier work called the Nidhi-Geham, but there are no copies of this latter work in existence. The Tantra – Samuchchaya deals exclusively with religious architecture and subjects like site selection and measurements. Although it has drawn heavily upon treatises like the Mayamata and the Manasara, it is regional in character. The Silpa-Ratna was written by Sri Kumara under instruction from king Devanarayana of Ambalapuzha in travancore. In its forty-six chapters, this work deals mainly with temple architecture and images, and is less regional than the Tantra-Samuchchaya. The most widely followed work on domestic architecture among the traditional silpis of Kerala is the Manushalaya Chandrika; also known as the Tacchu-Sastra, this work is believed to have been compiled by Chenas Namboothiripad in the 16<sup>th</sup> or 17<sup>th</sup> century A.D. and has seven chapters consisting of a total of 235 verses. On matters such as measurements, site location and structural details, the Manushalaya Chandrika has drawn heavily on the Tantra-Samuchchaya. The Manushalaya Chandrika also acknowledges its debt to works like the Mayamata, the Manumatam, and the Gurudevapadhati. The ancient manuscripts were written in Sanskrit and Manipravalam, an earlier form of Malayalam, the language of the people of Kerala. A description of the initial steps involved in the design and layout of a house and the various systems of measurement as presented in the Manushalaya Chandrika, are given below.

The qualities of a good site include the presence of trees, flowers, fruits, milk, a fertile and thickly packed soil, a good odor, a perennial water source, and a watercourse bordering the site, with the water flowing in a clockwise

direction. Sites which are circular or semicircular, 3,5, or 6-cornered, with shapes which resemble the curve of the fish, the elephant, or the turtle, and with one end tapering or shaped like a trident are to be avoided, along with sites which contain bones, ashes, hair anthills or have corners oriented towards the cardinal points. The slope of the site is a very important feature to be considered in the selection of a site. The effects of various slopes on the house and the people living in it are given below;

Sloping from.....	Name	Effect on the inhabitants	Expected life span of building.(in years)
West to east	Govidhi	Prosperity	500
Northwest to southeast	Agnividhi	Loss of wealth	12
North to south	Yama vidhi(Kerala vidhi)	Death	8
Northeast to southwest	Bootha vidhi	Loss wealth	6
East to west	Jala vidhi	Poverty	10
Southeast to northwest	Naga vidhi	Loss of son	100
South to north	Gaja vidhi	Increase in wealth	100
Southwest to northeast	Dhanya vidhi	God fortune	1000

A site which is higher at the center is also supposed to cause loss of wealth.

The names of various trees whose presence is desirable or undesirable and their locations with reference to the house are also given. It is, however, made very clear that no tree should come closer to a house than twice its height. The house is compared to the bridegroom and the Site to the bride, about to be united in holy wedlock; the perimeter of the structure playing the same part as the horoscope of human beings. The rules of the silpa shastras were the norms adhered to in construction of houses. The rules of the shastras were severe in nature, and the silpis or architects must get the credit of having built such elegant and varied forms while working within the dictates of the shastras. Nonetheless, domestic architecture in Kerala never attained the dazzling brilliance of some of the structures in other parts of India. Many explain the unpretentious nature of Keralite residential structures by saying that luxury and ostentatious display go hand in hand with despotism and monarchy, while Kerala has all along been democratic in spirit. In addition, the country has a tradition of wood construction which has continued from very ancient times. Here the shastras go into the depth of using locally available recyclable material, ensuring that the



materials were used in such a way so as to reconcile itself with nature, considering the hot and humid condition prevalent here, not going astray as in many parts of the world by providing insulation which is required in dry or arid conditions, but rather understanding the principles of thermal conductivity to fight humidity, allowing hot air to pass out at as many points as possible, so as to bring in cool air, since it would not be possible to have a vacuum under those conditions. This brought into play porous tiled roofing made of clay which would remain cool at the bottom while the sun struck the top, and also allows hot air to pass through due to the porosity of its joints, and the breathing quality of the material itself.

The air was let to circulate completely though privacy was ensured by having inner walls in the private areas. In the southern side, which attracted maximum incident solar radiation, thick blank walls, pierced by heavily shaded jails were provided. The transient nature of the buildings, which have had an average life span of 400 years, was also instrumental in the refinement of design and craftsmanship through the ages. It is very difficult to say when the residential

architecture of Kerala attained its peak form, since a study of the existing traditional houses in Kerala reveals a gradual deterioration in the quality of the architecture, the earliest structures being the most refined. In the last two centuries, this deterioration has been very rapid.

It was an attempt to tame nature which ended in taming of architecture by nature, with the result that man and nature came to coexist in harmony. The open courtyards became an integral part of the house. The high walls around the house created pockets of outdoor spaces which essentially functioned as rooms. The entrance gate assumed major importance since it was in essence the front door of the house, the entrance continued functioning as the living room where most of the dealings with the outside world took place. The courtyard was scrupulously maintained swept clean every morning and often paved with cow dung, with ritualistic drawings executed in flour near the entrance. This "room" was furnished with a holy tree, the Tulasi (*Ocimum sanctum*), grown on a raised pedestal and worshiped every evening. For more formal meetings, the houses had



Thalams, raised platforms on the verandahs, or Poomukhams, which were built as covered extensions from the main building. While most visitors were entertained in the above areas, the entry into the house itself was restricted to relatives and a few selected people. Within the house, there was a further demarcation into male and female domains. Even within the house, nature was never excluded. The most dramatic spaces in the traditional houses were the Nadu Muttoms, the inner courtyards. The declivity in the roof admitted streams of natural light to illuminate the spaces around the courtyard, leaving the ceiling half-lit and thus creating an effect of mystery. This space was further dramatized during the monsoon, when rainwater entered this natural setting.

According to the Sastras, the four main types of house were the Eka shala, the Dwi shala, the Trishala and the Chatur shala. The most basic house was the Eka shala, which had only one block, usually the Thekkini. The most auspicious combination for the Dwishala was one with the Thekkini and the Padinjattini; in the case of Tri shala, the preferred combination was the Thekkini, the padinjattini and the vadakkini. The Chatur shalas were popularly known as Nalukettus and were further classified in to nine types depending on the plan, the joinery detail of the wall plates, and the measurements. The Nalukettu became the basic module for all the large houses in Kerala. The Nalukettu had the advantage of being able to accommodate more blocks as an addition to the same basic module in a similar pattern without sacrificing light and ventilation. This type of planning was appropriate for the joint family system, in which the dwelling had to grow with the family. An analysis of large residential complexes shows this type of development in structures which were constructed during various periods. The first module was usually built according to the description of Nalukettus given in the Sastras, to which extensions were to be added at various stages. The Nalukettus having the main courtyards in Poomulli Mana and Attingal Kottaram are examples of the first module when it served as the nucleus for the whole development. When extended, the Nalukettu becomes the Ettukettu ( 8 blocks), which has two courtyards, or the Panthiranttukettu (12 blocks), with three courtyards, and so fourth, thus accommodating the growth of the family.



As we analyze the existing Nalukettus of Kerala, we find a great diversity in their organization although they were quite consistent with the principles which governed the allocation of function to various spaces.

The entrance to the house was from the eastern or western corners through a protruding entrance porch called the Poomukham or a raised platform called the Thalam which was located within one of the corner spaces. Some houses had a combination of both types of entrance. Most of the houses had colonnaded verandahs, which acted as buffers between the semi-private courtyard spaces and the very private interior spaces. Occasionally, the houses had verandahs on three sides, but in most cases they were located on the entrance side and along the Thekkini (south). The northern side very rarely had colonnaded verandahs.



The southwestern half of the Nalukettu functioned essentially as the male domain. The Thekkini as in most cases an open hall, sometimes with a raised Thalam. The half of the Nalukettu in which these areas were placed was used as a place to relax, sleep, study, etc. A Nellara or granary in the form of a raised wooden chamber with a basement storage space called a Nelavara, was situated in this section, generally in the padinjattini. When provided with walls, the corner spaces were most commonly used as storerooms. In the case of houses with more than one floor, the topmost storey was the one devoted to bedrooms.

The northeastern half of the house, which contained the Vadakkini and the Kizhakkini, rarely had a second story. Even an attic was usually avoided. The puja rooms, the kitchen, the dining halls, etc., were located in this half of the house. One side of this area, generally the Kizhakkini, was left as an open hall. The kitchen was invariably located in the northeastern corner, and it usually had an attached well. The reasoning of this (placing the kitchen on the north eastern corner was exactly that of modern day climatology)

1. Northern side – constant sunlight without heat, this space was the most used the whole day.
2. Eastern side: ultra violet rays in the morning sun – natural germicide
3. North-e side is the leeward side of the wind direction in Kerala. Created negative pressure area, sucking out smell and smoke.

With the exception of the puja room, this half of the house functioned as the female domain. Extension to the Nalukettu generally took place in this area.

The tendency for houses in Kerala was to be as self-contained and independent as possible so that the residents, particularly the women, could avoid coming into contact with outsiders. The more affluent the family, the more self-sufficient was its residence, with some of the larger complexes even having temples attached to them.

Other structures common to most of the large complexes are the Padipura, the entrance gate ; the bathing tank and the Kulapura, the changing rooms; the Thozuth, the cattle shed; and the Pattayapura, the granary. Entrance gate were of various sizes and shapes, depending on the affluence of the family. In some houses, the entrance gate is simply a covered doorway, while in others it may be a two storied structure with seating facilities on the ground floor and bedrooms on the second floor. The Padipuras in some of the later structures function as the living quarters for the bachelors and the male guests. They are usually located on the eastern or the western side of the complex.

Water was of special significance to every Malayali. His day started with an elaborate bathing ritual, and he was required to have a minimum of two baths daily. Not surprisingly, the bathing tank and the attached Kulapura were an integral part of all large residential complexes, some of them having separate tanks for men and women. These structures were very interesting, having direct access to the main building and being designed to provide a great deal of privacy to the people using them. In cases in which there was easy access to flowing water or a temple tank, a private kulapura was build on the edge of this body of water. The water in the tank is fresh water from under ground springs. The tanks were generally located on the southern or northern side of the complex. Since traditional Keralite society was agrarian, the Pattayapura or granary was a very important structure within the complex. As with the bathing tanks, the granary was located on the northern or southern side of the house. With the decrease in the size of individual land holdings in later periods, portions of the pattayapura began to be used as bedrooms, and during the last few decades, many of them have been



demolished. Urappura, Netumpura and Nellukuttupura were the various names given to the structure which was used to process the grains. The Thozhuth or cattle shed was another important structure within the complex. It was located on the out skirts of the compound, and was not allowed to be positioned on the Karnasutra.

Many of the houses had small outdoor shrines close to them. Some of them had direct access to temples or had their own private temples, into which outsiders were not allowed. The sarpakavu was a piece of wooded land attached to the complex which was left untouched for the worship of snakes. This grove had a large number of images of snake gods and was worshipped by the holding of pujas.

In traditional houses, moveable furniture was very rare. Most articles were built-in, and served more than one function. Window shutters unfold to become tables; the step becomes a bench. Activities like sleeping and eating generally took place on straw mats on the ground.

#### THE ILLOMS & MANAS OF KERALA

Between the seventh and the tenth centuries A.D., a large number of Brahmins entered Kerala through Tulunad. The new immigrants had a marked influence on religious, social, and economic life in the country where they settled. Many new temples were built to propagate their religious beliefs, and the temples were endowed with large tracts of land (Devathanam) to generate revenue for their management. Then, as a result of the 100-year war between the Cheras and the Cholas in the eleventh century, which left the country in a state of chaos, the Namboothiris emerged as the new power brokers in Kerala. During the period between the eleventh and the sixteenth centuries, this group maintained virtual control over all aspects of life in Kerala, with the rulers functioning as mere puppets in their hands. The temple lands became the personal property of the Brahmins (Brahmaswam), and they became the Jenmis, the landlords. The social life of the Namboothiris had a major impact on the design of the Illoms. A major part of the Namboothiri man's life was spent learning the Vedas and in ritual and prayer. The women were generally confined to the house, and rarely ventured outside. Even within the Illom, women were restricted to certain areas. The Namboothiris followed a patrilineal system, but only the eldest brother could marry and thus make a connection outside of his community. The younger brothers entered into loose alliances, called Sambandam, with women of the Nair caste. The doctrine of "untouchability", which required people of higher caste to keep a certain distance from members of lower castes in order not to lose their ritual purity, was brought to Kerala by the Brahmins. This doctrine was one of the main factors which influenced the design of the Illom.

Namboothiri houses were intended to be as self-sufficient as possible in order to minimize contact with the outside world. The more affluent the family, the more self-sufficient the Illom tended to be, having its own temple, bathing tank, cremation ground, granary, guest houses, etc.

The important feature of this type of dwelling was the strong demarcation between the male and female domains, a requirement which necessitated a secondary system of passage ways for the sole use of women. Women were not allowed into the Puja room but were allowed to watch the proceedings through a window. The area around the main courtyard was considered to be the male domain, while women had their own Puja room and were provided with a path of movement which allowed them into other areas of the house without using the male area.

The social changes which took place in the nineteenth and twentieth centuries brought about major modifications in the organization of the Illoms. The custom of the eldest brother alone getting married fell into disuse. As the younger brothers started bringing home their wives, additional living space came to be required in the Illom. More bedrooms, larger dining and kitchen area, and guest rooms were sporadically added to the existing structure, while the separate set of passageways for women was retained. Separate staircases were even added in order to enable the women to reach the bedrooms, which were generally located on the second floor. The additions, which were carried out principally on the second floor, exhibited European influence and were in very poor tastes. The large structures erected had badly proportioned brick or laterite columns and arched openings, and were totally lacking in sensitivity to the environment and the existing structures.

After independence and particularly during the 1960 s, a series of land reforms introduced by the government led to the imposition of a ceiling on land holdings and conferred land ownership on the serfs. One consequence was the demise of many large Illoms. The breaking up of the joint-family system accelerated the change, and

left many of these Illoms without any revenue. The result was that whole sections of the old complexes fell into disuse. During the last three decades, many Illoms have been destroyed, and the few which have survived are very poorly maintained, with many of the older structures within the complexes having been demolished.

The Namboothiri Illoms were spread throughout Kerala, with a large concentration in the the central portion of the country. This area has also contained some of the best examples of this type of dwelling. As one moves through the length of the country, variations appear in Illom architecture due to factors like varying degrees of social standing and wealth possessed by the Namboothiris, the availability of building materials, and differences in building techniques. The Illoms in southern Kerala had wooden walls and were traditionally single storied, while those in central and northern Kerala had laterite walls and were generally two-storied structures. In central Kerala, the walls were plastered, but, as one moves northward, one finds more Illoms with unplastered walls. In central Kerala, the districts of Trichur and Palghat were dominated by some of the most affluent and powerful Namboothiri families in Kerala and were invariably the site for some of the largest Illoms in the country.

The position of the house with respect to various temples is another important aspect to be considered. It is stressed that the house should never be higher than a temple. A house built in a grain field or too close to the sea, river, a sage's hut, a cattle shed, a mountain, or a temple supposedly brings ill luck. A site in the shape of a square is considered the best and is said to be fit for a Brahmin.

In site planning, the cardinal points are initially determined with the help of a gnomon. The site is then squared and divided into four quarters called the Khandas, by drawing lines in the north-south and East-West directions. These lines are called the sutras or the rajjus. The north-south line is called the Yama sutra, and the east-west line, the Brahma sutra. Sutras are also drawn diagonally from northwest to southeast and from southwest to north-east. They are called the Karna sutra and the Marana sutra, respectively. The northwestern quarter is called the Asura or Vayu Khanda; the northeastern quarter, the Manusha or Eesa khanda; the southeastern quarter, the Yama or Agni khanda, and the southwestern quarter, the Deva or Nirdhi khanda, of these four khandas, only the Deva Khanda and the Manusha Khanda are fit for human dwellings. If the site is very large, these two Khandas are again divided into four quarters, and the resulting Deva Khanda in the Manushya quarter and the Manushya Khanda in the Deva quarter are considered the most suitable for construction.

The component parts of the residential complex are then located within the site with reference to veedhis, marmas and pads. Veedhis are concentric divisions in the site, numbering nine. The outermost veedhi, which is considered the first one, is called Pishacha veedhi; the next or second veedhi, the Deva veedhi; the third, the Kubera veedhi; the fourth the Yama veedhi; the fifth, the Naga veedhi the sixth, the Jala veedhi; the seventh, the Agni veedhi; the eighth, the Ganesha veedhi and the innermost or the ninth, the Brahma veedhi. Of the nine veedhis, the first, fourth, fifth and seventh are considered unsuitable for construction.

## DESCRIPTIVE EXAMPLES

### THE MANAS OF KERALA

The Poomulli Mana at Trichur is one of the most extensive Namboothiri residential complexes in existence to day. The complex has grown through the years, but recently many of its older structures have been demolished. The main entrance to the complex was originally on the east but is now located on the west, which has a large two – storied Padipura, from which we reach to Poomugham through a covered walkway. The main core of the Mana is a square Nalukettu, to which extensions have been added at various times. In accordance with the Sastras, the northern and eastern portions of the Nalukettu were left as single-storied structures, while the western and northern portions received additions. Within the main building, the Mana has six courtyards of varying sizes. The changes and additions to Poomulli Mana reflect not only the socioeconomic changes undergone by the Namboothiri Brahmins in the last two centuries, but also the changes in architectural style which have occurred in Kerala during that period. Most of the additions made to the Mana were necessitated by the sudden spurt in the number of family members and guests. New kitchen and dining halls, guest quarters, and bedrooms were the main additions. The bedrooms occupied the upper floors and had numerous staircases leading to them from various parts of the house so that separate male and female passageways could be preserved.

Poomulli Mana has separate bathing tanks for men and women attached to the house. The main tank, with its changing rooms. Is an impressive structure containing a series of granite steps which lead to the water and a large sweeping roof. One of the most beautiful structures within this residential complex is the private temple dedicated to Krishna. It has a unique entrance; intricately detailed columns and brackets support the roofing system and the loggi, which is pierced by the ornamental gabled roof of the Balikkal Pura.

The Koodalur Mana at Nagalassery in Palghat district is a medium sized Illom built in the traditional style. One of the interesting features of this Mana is its unusually large central courtyard, which, in spite of its size, has very pleasing proportions. This Mana, which may have been built in the eighteenth or early nineteenth century, has not undergone much change. The bathing tank, which is located on the north-eastern side with direct access from the house, is another interesting structure within the complex.

The Varikkasseri Mana in Palghat is another ancient Namboothiri house which is still in very good condition. The granary, which is adjacent to the main section of the complex, is an elegant two-storied granite structure which merits special mention.

The Desamangalath Mana, which was situated at Shoranur in Palghat district, was supposedly one of the grandest of all the Namboothiri Illoms in Kerala. Unfortunately, it was recently demolished, and proper documentation of this complex does not exist.

#### THE NAIR VEEDUS

The Nairs as a community are believed to have come into existence between the eight and tenth centuries A.D. They have their roots in the indigenous Dravidian groups, like the Chekons, the vellas, and the Idayas, who were all held in high esteem in ancient Keralite Society. However, when Kerala fell into the grip of Chaturvarnyam, the cast system, the Nairs were the Sudras, although later they filled the vacuum left by the absence of the Kshathriyas and the Vaisyas among the Aryans who migrated to Kerala. At the height of the 100 year Chera-Chola war in the eleventh century, the famous Nair suicidal army called the Chaver Pada came into existence, and their development as a matrilineal community. This change is attributed to the death of such a large number of Nair men on the battlefield and to the growing acceptance of Namboothiri overlordship. The result was that the Nairs entered into a loose union on the order of concubinage, called Sambhandam, between Namboothiri men and Nair women. The generation accorded the Namboothiris contributed to a large extent to the creation of a number of Nair subcastes, which were determined by the extent of Namboothiri blood in members of the caste and their proximity to the Namboothiris. The Nairs soon became tenants and managers for the Namboothiris, and in turn, had subtenants who belonged to lower castes and performed work for them.

In the "Marumakkathayam", the matrilineal system of the Nairs, the family, or "Tarawad", was a joint family consisting of all the descendants of a common ancestress and living in the same house. Although all common property belonged to the females of the family, the "Karnavan", who was the eldest male member of the household, managed the property. In this system, the husband and wife lived in their respective Tarawads, and the former made nocturnal visits to his wife's house. However, the Karnavan's wife, the "Ammavi", was allowed to live with him and other members of his Tarawad.

The Nair veedus, although smaller than the Namboothiri Illoms, were nonetheless more elegant. The size of the house varied according to the affluence of the family. A large number of the houses. Were Trishalas, but the houses belonging to the rich were mostly nalukettus or multiples of Nalukettus. As with other structures, the geographic variation in form was visible in Nair houses. In addition, the Veedus in the south were stylistically more distinguished but were smaller in size than the Veedus in the central and northern sections of the country. The houses in the south had wooden walls and were usually single storied, while those in the north had mud or masonry walls and were frequently two-storied structures.

In contrast to the Illom, the Nair veedus had no sharp demarcation between male and female domains. Compared to the Namboothiri, the women had more mobility within the house, while the men confined themselves primarily to the Poomukham and the Thekkini. In many cases, the men of the house stayed in the adjoining Pattayapura, the ground floor of which was used to store grains, while the second floor Karnavan and his wife, the Ammavi, to make this structure their personal living quarters. The upper floors of the Padipura, the gate house, were also frequently used to accommodate the male members of the family, and occasionally they

functioned as guest quarters. The women had their own bedrooms within the main house, where they were visited by their mates. In larger house, separate staircases were built to access these bedrooms, while maintaining privacy for the various levels. During their menstrual periods and childbirth, women were confined to certain secluded areas within the Veedu because at these times they were considered to be ritually polluted.

The Nairs retained some of the ancient Dravidian religious practices, like ancestor worship, and sometimes had tutelary deities of Dravidian origin placed alongside the Vedic and Puranic ones. The Pooja rooms, which were sometimes called the Machu, accommodated the spirits of the ancestors, who were commemorated in the form of images made of gold, silver or brass along with the images of the family goods. The Tarawad also had a thickly wooded patch of land, called the Sarpakavu, with granite images of snake deities to which offerings were made. Offerings were also made to appease certain evil spirits, such as the Karkkutti, the Kuttichathan, the Mudiayan, and the Kallatimuttan.

The larger Nair Tarawads had their own bathing tanks attached to the building or were built in the near vicinity of a water source. In some of the Tarawads, there were separate structures called Kalari, which were used by the Nairs for their training in Kalaripayattu, the traditional martial art of Kerala. The Tarawads also had ancillary structures like the Tozhuttu, or cattle shed, and the Nellukuthupura, which was used for such activities as dehusking, pounding, grinding, and boiling rice.

While the affluent Nair Tarawads were large complexes which tended to be isolated and self-contained, the poorer Nair families lived in smaller structures which were usually Trishalas or even Ekashalas and were situated in small compounds. Even within the restricted confines of these structures, however, they did their best to maintain their privacy levels, male and female domains, etc., certain spaces being used for certain functions at certain times by certain people. For instance, the dining space which was used by all family members during the daytime might become the sleeping area that was restricted to women at night.

Veluthampi's house at Talikulam is a good example of a typical Nair house in the Travancore area. It is a very elegant structure in the form of a Thekkekkottaram, with a Poomugham adorned with intricately detailed built-in seats. It is entered on the eastern side through a Padipura, which opens into a small courtyard that leads to the Poomukham. Originally, this Veedu had three interior courtyards, but recent additions on the northern side have created a fourth courtyard space. There is a granary attached to the Padipura on the east, and a separate covered shrine is present on the southern side. Just outside of the inner boundary wall of the complex on the north-eastern side of the complex is a small tank.

The Kunnathattu Madambil Swarubham at Mannarghat, the Ambattu Nair house at Chittur, the Ankarath house, and the nearby Chondath House at Nallepilly are all examples of large Nair Tarawads in the Palghat district of central Kerala. The old Nalukettu in the Chittur Tarawad has some significant examples of traditional wood work. The Koodali Thazhathu Veedu and the Kalyat Thazhathu Veedu are examples of the Nair Tarawad in Cannanore district in North Kerala. The main structure within the Koodali thazhathu Veedu is a single-storied building in the traditional style of Kerala style; it has been left untouched. This Tarawad also contains two large two-storied structures which were built in the early twentieth century and which show a very strong colonial influence. The complex has separate Kalari for martial arts training.

In the last few decades, the Nair community has undergone major social changes. They no longer follow a matrilineal system, and the Sambhandam with the Namboothiris has become a thing of the past. The joint-family system has been broken up, and many of the Nairs have migrated to cities, other parts of the country, and even foreign countries. In the face of the changes in life style, the huge Tarawads have become obsolete, resulting in the deterioration and disappearance of this ancient legacy.

One of the profound things with the shastras is the understanding of the concept of height, coverage and foot print of a building. It is described by the use of a pyramid how it could be achieved in one go. Imagine a street with two imaginary pyramids or triangles on either side. The Architect could design within the triangle, the result was vastly different, as is seen. What struck me was the clarity with which they applied their thoughts in those times, and the simplicity of the solution.

All in all, in conclusion, the shastras are an advanced science based on climatology, understanding our climate, our aspirations to overstep and to society, and the longing to be one with nature.

Thank you,