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Contents

Cover:
The Sri Lankan Tradition For Shelter

Cover Design:
Archt. Susil Lamahewa, FIA (SL)

This issue is compiled to give an insight by Architectural Tradition in Sri Lanka

EDITORIAL

The E-ARCHive project is a dedicated initiative to preserve and document invaluable articles previously published in SLIA's The Architect (TA) periodicals, VASTU, and Built Environment (BE) journals. This edition features four republished articles from the 1980s and 1990s, originally authored by esteemed professionals in the field. Since the Board of Architectural Publications currently lacks the facilities to digitize these historical documents, this initiative was undertaken as a means of preservation. Many of these essays and articles are widely used by educators in architecture and design across Sri Lanka, and their authors are well-recognized both locally and internationally. With some of the original hard copies in deteriorating condition, this project serves as an essential effort to safeguard them for future generations. However, articles from SLIA's digital library will not be included under this project.

The second issue of the E-Journal presents a collection of scholarly articles authored by Archt. R. Mayuranathan, Vidya Jyothy Prof. Nimal de Silva, Mrs. Manel Fonseka, Archt. Turner Wickramasinghe, and Archt. Upali Karunaratne.

Prof. Nimal de Silva's article delves into Sri Lankan traditional architecture, analyzing the regional architectural styles that have shaped the country's built environment. Ancient Sinhalese architecture seamlessly integrated with the landscape, using contextual elements to shape dwellings and structures. This article is a foundational study, inspiring subsequent research in the field. Many of the traditional shelters documented by Prof. de Silva are no longer in existence, making this article a crucial reference for future scholarly work. His detailed categorization of dwellings and shelters by province provides an insightful base for architectural studies.

Archt. R. Mayuranathan explores traditional architecture in Jaffna, offering a deep analysis of house typologies, their evolution, and their adaptation to modern living. His research sheds light on architectural elements unique to the Jaffna Peninsula. The article categorizes traditional architecture in Northern Sri Lanka into four typologies:

- Domestic Houses
- Resting Places
- Temples
- Miscellaneous Buildings

Each typology is examined in detail, with illustrative examples and intricate sketches. His explanations of Thinnai and Nadai in traditional houses are particularly noteworthy, offering rare insights into spatial organization influenced by privacy and social identity. Additionally, he critically assesses the factors driving architectural transformations over time.

Mrs. Manel Fonseka's brief but impactful essay on Colombo's conservation study forms part of a larger research initiative. She highlights the threats facing historic environments, emphasizing how urban development often erases tangible links to history. The essay documents buildings photographed by the author in 1978-79, many of which have since been demolished or significantly altered. Among these are the Bogala Building, Chatham Street Mosque, Delft Gateway Guardhouse, Bristol Buildings, and the Sea Street corner house. Her study provides a compelling account of Colombo's urban heritage, particularly focusing on the Pettah area and its environs.

Architects Turner Wickramasinghe and Upali Karunaratne discuss architectural theory and design processes through a case study on housing in Colombo. They analyze the Keppetipola Mawatha summit flats, which were constructed for the Non-Aligned Summit held in Sri Lanka in 1976. The study systematically examines house forms, site layouts, and design briefs, structured around 21 key parameters. Their research integrates the timeless Pattern Language theory, highlighting its application in Sri Lankan housing schemes. The study primarily aims to create a life-support system based on human behavioral tendencies, with spatial configurations reflecting these needs. While the research focuses on housing, its principles could be extended to broader urban elements, including schools, recreational areas, and commercial spaces. Although these four articles cover diverse topics, they collectively offer invaluable insights into traditional Sri Lankan architectural methods and technologies. Their content is of immense value to academics, students, and professionals seeking to develop innovative approaches in the built environment.

A special note of appreciation goes to Archt. Dylan Holesinghe for his meticulous proofreading of the periodical. The typesetting was skillfully handled by Mr. Senaka Jayathunge alongside his other responsibilities. Heartfelt gratitude is also extended to the Assistant Manager of BAP, Mr. Senaka Jayatunga, and Manager Chinthika Gunawardana for their support in compiling and publishing this journal. Finally, we extend our sincere thanks to the President and Council of SLIA for their unwavering support of BAP initiatives during my two-year term.

The Board of Architectural Publications proudly presents the second issue of the E-Journal Archive. Four issues of this E-Journal will be published during the 2024/2025 session. A limited number of printed copies will be made available for the SLIA library's reference section and for architecture schools.

Archt. Susil Lamahewa, FIA (SL)
Chairman-Board of Architectural Publications-2023 to 2025
15th October 2024

UNDERSTANDING THE ARCHITECTURAL TRADITION OF JAFFNA

Archt. R. Mayooranathan, AIA(SL)

Introduction

Information on pre-colonial architecture of Jaffna is very scarce. One can find some information in various literary works and other similar writings in addition to some archaeological remains. These are "iadequate to gain any worthwhile knowledge about the architectural, tradition of this region. Many buildings, built during colonial period too have very little relevance to the local traditions and are not much of use to study the real tradition of the Jaffnese architecture. In this context, for the primary source of information on this subject, one should look for .domestic houses and other similar buildings.

The lack of high style architectural Buildings in Jaffna cannot be considered as a handicap for a study of understanding the attitude of Jaffna community towards architecture. If high style architecture indicates the highest possible advancement in art and technology in a particular period, the popular and folk tradition, to which the whole lot of Jaffna houses belong, reflect more of basic requirements and the cultural behavior of the ordinary people.

Further the slow process of change, and the resistance offered for replacing the old ideas and practices, make the specimens of these types valuable sources for understanding the development of various concepts and physical forms in architecture. The process also allows us to see clearly the mechanisms of changes the factors of such changes. Traditional Buildings

Traditional buildings

The traditional buildings found in Jaffna can be broadly categorized in to the following types.

1 .   Domestic Houses

2.   Resting places

3.   Temples and

4.   Other miscellaneous buildings

A scan within the stock of available domestic houses would show us a number of variations which we can broadly categorized into sub types for easy comparative analysis.

1.   Single Room Houses

2.   Three Compartment Village Houses

3.   Traditional Court Yard Houses

4.   Colonial Period Court Yard Houses and

5.   Post Independence Houses

Similarly one can identify the following sub types in the Resting Places of Jaffna.

1 .   Wayside Resting Places

2.   Resting Places Related to Temples and pilgrimage spots

3.   Resting Places related to Markets and

4.   Others

Although the buildings of Jaffna relevant to this study has been categorized here into types and sub types, it is not the aim of this article either to present a study on the typology of buildings or to analyze them based on these categorization. In fact this article aims at identifying the essence, of the architecture of the study area, which is expressed right through the whole spectrum of the types, and to understand the under - laying unity irrespective of the varying expressions due to various combinations of factors through the space and time.

Basic concepts related to the Architecture of Jaffna

Concept of space as perceived in the architecture of Jaffna

The concept of space, as expressed in the process of architecture in Jaffna, is basically related to the Hindu worldview system. Although the 'Silpa Sasthras' and astrology play very important role in the process in architecture of Jaffna, the rules followed here today are very much a simplified version. Even in the case of old buildings it seems that the visible adherence to many of the rules are basically embedded within the proto types used, than consciously followed while designing each and every building.

One of such rule seems to be related to the method of locating a house within a plot. Despite several variations of this method, outlined in different 'sasthra' texts, the common concept is a representation of the plot exclusively allocated for the building as a mini Hindu cosmological space. The plot is divided into specified number of spaces in a checkered pattern and each of these spaces are allocated to various metaphysical beings and human, with the central area occupied by the prime god of the Hindu pantheon 'Brahma'. This space is prohibited for any building. The spaces allocated for human are recommended for building purposes. **(fig 1a).** The exact location of the house is determined astrologically based on the horoscope of the chief occupant.

Further the process of laying out a house reveal another conceptual aspect of space. The growth of the building plan as well as the construction process, start from a point of origin, which is physically represented by the corner post of the house proper (fig. 2a), the single room unit of the Jaffna village house.

Although the point of origin is represented by a corner in general it is interesting to note that this point is represented by the center post of the round houses found in some parts of Jaffna area (fig. 2b}. It is difficult to say whether the round houses were the predecessors to the rectangular village houses of Jaffna, but its use in the overall sense is similar to their rectangular counterparts.
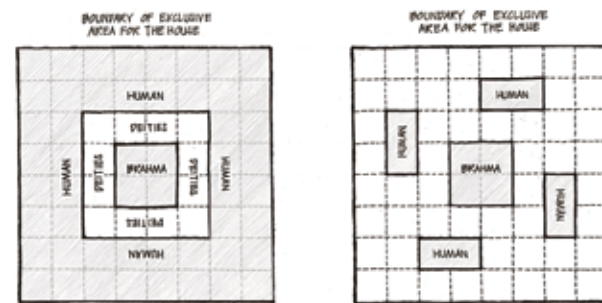
Fig. 1a - Methods of locating houses, from two different sources

This perception of space as represented in the houses of Jaffna, as a very close resemblance to the concept as discussed by O.F. Bollnow (1). He pointed out that there were zero or fixed points in the humane concept of space and he calls this as 'center' of space.

It is evident from the above that the concept of space as perceived in Jaffna houses was a superimposition of

Fig. 1b. - Schematic plan showing two concepts superimposed on each other.

Fig. 2b – Plan of the round house, showing center post that represents the origin.

primitive humane space concept and the 'vedic' Hindu cosmological concept of space, one on top of the o:her, with two different centers. (fig 1b) This also indicates the belief that the space and man relationship is specific, in contrary to the present concept of a homogenous space where man can fit randomly anywhere.

Concept of Territory

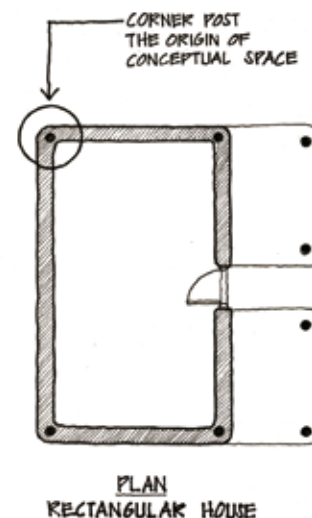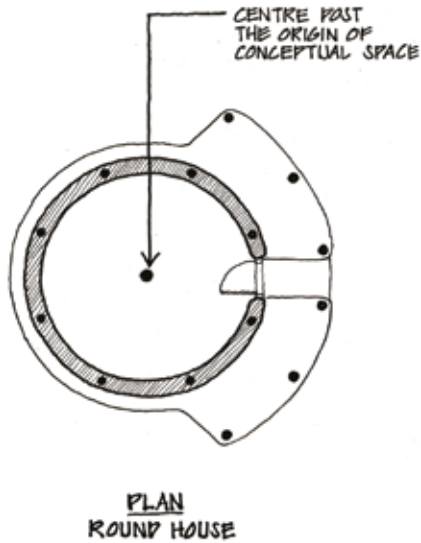An individual's space starts with his dwelling and extends step by step through different domains-personal, cultural, regional, national, etc.-towards the notion of cosmological space. At each of these levels, man individually and jointly, trying to strengthen the conceptual bounds of these domains through various means.
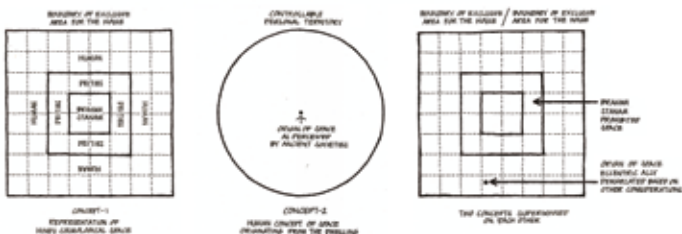

Fig. 1b

Locating a house in the space, as outlined in the traditional rules, clearly indicates that this act depends on demarcating an exclusive space, for the house, which conceptually represent the cosmological space. In other words, one cannot fit into his slot within the symbolic universal system and the location will not have any meaning, unless a plot is demarcated. It is important to consider this, to understand the whole logic behind the persistent existence of high live fences and compound walls around Jaffna houses.

Trying to create a culturally identifiable space outside personal domains was evident during different periods. Several buildings built during late pre-independence period and post-independence period show an effort to bring in an identity by introducing Dravidian architectural order in the buildings of Jaffna. Although the superficial application of these elements indicates a crisis in the architectural tradition. which stems from its inability to provide conceptual basis for new architecture to respond to modern needs, increasing space requirements and variety of new uses for buildings, It also shows the importance, the community of Jaffna attached to the maintenance of its cultural territory in some way or the other.

Evoluation of form, as identified in Jaffna houses

provide valuable insight into the concepts, rules and the methods. The previous section dealt with some aspects of the basic concepts involved. The development of plan and the form, in Jaffna, is highly influenced by the following aspects.

1 .   The concept of the basic house and its location and orientation.

2.   Locations of other spaces relative to the basic house.

3.   Direction of growth of the plan, and,

4.   The attitude towards the third dimension and related elements.

An analysis of the existing house types shows that the traditional rules strongly influence the first three aspects and the conformation to those rules were persistent in all types of houses in Jaffna. Apart from the traditional

rules, several socio-cultural and other factors influence the development and changes in the plan and the form, throughout its history.

Basic unit ('veedu')

The simplest form of the Jaffna house is a single room unit (fig 3), rectangular in shape, generally with a live fence around it. The entrance to this room is always placed on the longer side. Attached to it, along the front wall, are two platforms one on either side of the entrance door, with a low level walk ('Nadai') leading to the entrance. This may have been the house for the majority of the Jaffna people in the ancient time and had been rightly called as 'veedu' (means 'house') in Tamil language.

It is very much interesting to note that this unit as a concept with all its attributes more or less unchanged, had been maintained, as the prime space, in all types of houses evolved afterwards.

Fig. 4 shows the schematic layouts As a starting point of the architectural of different types of houses of Jaffna. tradition in Jaffna, domestic houses These layouts very clearly reveal that this 'veedu', as a concept, has been represented unchanged in all types of houses.

Locational relationships and Direction of growth

In the next level, where the kitchen and well came into being as parts of the complex, another aspect namely the relative location of different spaces became an issue. Analysis of the three compartment village houses and all other types evolved after would reveal that this locational relationship also was constant throughout.

Another type of constrain to the design of a house can be seen in the belief of the Jaffna man, according to which the plan of a house can grow only in specific directions. For example a 'veedu' with north or east orientation can grow only towards north and east, in other words the 'veedu' is located in the south-west corner of the complex and no extension is allowed on the west and south side of this room.
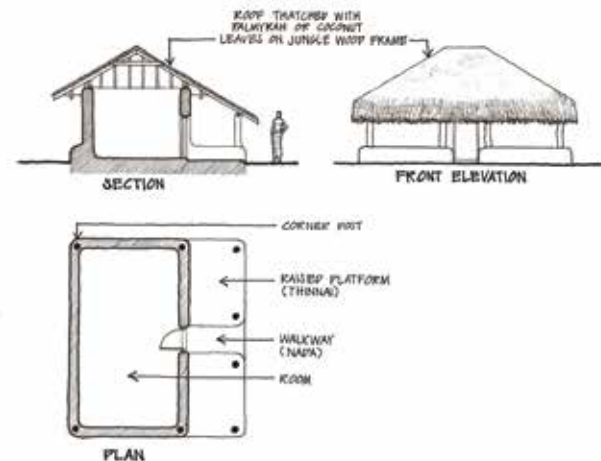
Fig. 3 - Single room unit – "veedu"

Prohibited space and Courtyard

In Jaffna it has been noticed that the traditional house plans grew by additive process, leaving the prohibited central space open. This space became the courtyard. It is not possible now to say whether this traditional rule came into being to stabilize the practice, evolved due to some other reason or vice versa. However the traditional rule gave legitimacy to the practice and made this survive longer.
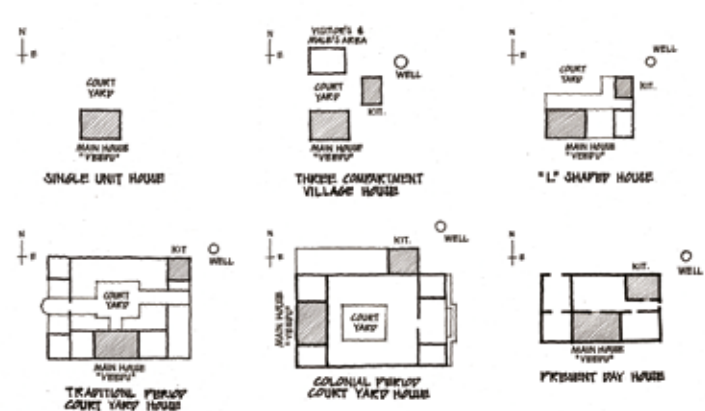
Fig. 4- Schematic representation of relationships between main elements, in various types of houses.

Miscellaneous Spaces

In the case of larger houses, it is obvious that the eccentricity of the 'veedu', the prime space, increases. In the plan of the courtyard houses it is noticeable that a concept had been evolved to over come this problem. Open halls, verandahs, 'thinnai', and rooms without

doors had been used as fill-in spaces. It seems that these spaces had been considered as insignificant spaces from the point of view of the traditional rules, and had also been used in areas where building was not otherwise allowed.

In the case of traditional courtyard houses (fig 5) and the early colonial period courtyard houses, the nonspecific open halls and verandahs were the spaces, which were considered as the insignificant spaces. It also to be noted that the tiny shrine rooms found on the prohibited side of the main room, was rarely provided with doors. This may be to ensure that this needs not to be considered as a significant space. In later houses many of the non-traditional spaces, such as living room, dining room, office room etc., too had been used in similar way.

Modern day Houses

The present day houses of Jaffna are compact in form (fig 6). The most common plans are more or less rectangular in shape. Although these houses do not include courtyards, the basic concept of space relationships has not been altered. Comparatively rooms are bigger than that of traditional houses. However the largest room is still the main room, which represents the 'veedu' of all previous types.The abandoning of the element of courtyard, completely from the housing scene marks one of the very recent phenomena, in the evolution of Jaffna houses. It is surprising to watch such a change, within a short period, almost immediately after the independence. The reason for this is not very clear. However it should be noted that the courtyard concept remained as part of the proto-type, rather than a conscious conformation to any strong belief or rules. Further the changing context related to the issues of the security, cost, sociocultural factors etc. did not support this form.

Heights and volumes

The Jaffna traditional houses are fairly low. Mainly the 'veedu' of the village houses, used to have low eaves, short walls and small doors. In many cases one has to practically crawl inside. The bigger traditional courtyard houses too had been provided with low eaves at the entrance and around the courtyard. The doors to the rooms including the main room are generally lower
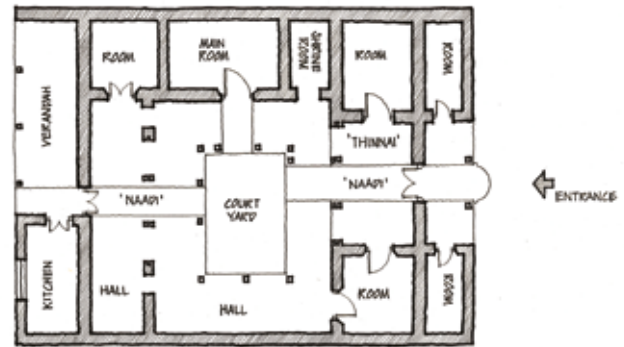

Fig. 5 - Plan of a Traditional Courtyard House.

than a man's height. In the case of village houses it is very much probable that the climatic conditions and technological shortcomings play a major role in this regard. However it is noticeable, that many Jaffna people believe, that this practice is intentional for making those who enter the house to bow down, in a gesture of respect. It is very much evident that, at least in the case of traditional courtyard houses, the technology needed for the provision of doors and eaves with adequate clear height for a person to walk straight in, is not lacking. Therefore it is probable such a culturally handed down sentiment for generations would have played a role in continuing such practice even when the technology was no more a constrain.

Elements related to Vertical dimension of form

The houses which were built by Dutch residents of Jaffna, during their rule, which displayed very much greater sense of verticality and volumes together with tall slender columns, tall windows, doors etc., seems to have had very little impact on the contemporary houses of local residents. Obviously the strict hierarchical social structure prevalent at that time in Jaffna would not have allowed for such a change in noticeable scale. However the courtyard houses built during later periods indicate-a trend ·towards growth in vertical direction, which reflected some characters of the above mentioned Dutch examples. This probably indicating a mass scale social upward mobility due to western style education, nontraditional occupations and newly acquired social status.

These socio-cultural changes had been reflected in the third dimension of the architecture of Jaffna in different ways. Clear heights at eaves had been increased to
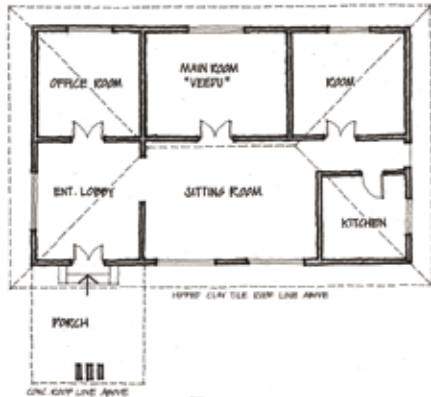
Fig. 6 – A representative plan of the houses of present day Jaffna.

comfortable levels. Walls were raised above the roof and decorated with mouldings and motifs, to give more verticality to the front facades, had become common in the colonial period courtyard houses (fig 7a).

Gable walls on the sides too were raised with decorative features, which seem to have been influenced by the Dutch houses. This feature frequently associated with a double height interior space or a second floor (fig 7b). Initially this double · height had been provided only for one wing, either at the front or back. The double height spaces clearly improve the ventilation situation. However one has to doubt its primary intention when analyzing the various internal arrangements within the similar external form. It seems that the height had become an instrument to express the social status.

Some Socio-Cultural factors influencing the architecture of Jaffna

Charitable acts

Early Tamil works on ethics and other literary works stipulates duties, for a man engaged in domestic life with his family. These works praise highly the acts of feeding and aiding ascetic, poor, forsaken and other needy people. Such charitable acts had been kept in high esteem in the society and this had been reflecting in the architecture of Jaffna.

This is observable beyond domestic houses. In fact the whole stock of resting places found in Jaffna are physical expressions of such attitudes. Traditional courtyard houses especially these which abut the roads provide clear evidence to this. 'Thinnai' and 'Nadai' combination

that was generally provided between the entrance and the road were completely open and anyone can access it from the road and use it for short respite or even for an overnight stay (fig 8). Many householders used to provide food too to the needy among them.

Impact of family on the planning

In Jaffna, family is the basic unit of the existence of the society. Most of the activities in the house are concerns of the whole family, and are performed collectively or with the knowledge of every member of the family. Very rarely an individual need privacy from the other members of the family. Upholding the prestige of the family or bringing fame to the family is more valued than individual achievement. These attitudes have been reflected in the planning of the houses where individual

Fig.7a - Front view of a colonial period courtyard house.

rooms had been given little importance. Multifunctional spaces such as the open halls around the courtyards are more important, as many of the family and individual activities are taken place in such spaces. Very small rooms found in these houses can be attributed to this. Specialization of spaces too has not been taken place.

Although the attitude is still the same in many households, the present house plans do not reflect this. Current plans too are basically type plans with little variations, but reflect elements corresponds to western oriented life-style, with separate bedrooms, office rooms, living rooms, dining rooms etc. However many

Fig. 7b - A two storied portion of a colonial period courtyard house with gable wall raised above the roof.

families specially in urban areas, find them suitable for the changing attitudes and trends in life style, but with many other families who still have their traditional attitudes dominate over the new trends, these plans do not bring any justice.

Seclusion of women and need for privacy

According to the traditions of Jaffna, women play, basically a supportive role in the family and the society. Modesty and chastity are two of the most valued characteristics of a female in Tamil society. In the early days, it was the practice among the families of the highest caste of Jaffna to limit the exposure of their young female members to the outside.

This in fact had a clear impact on the domestic buildings. The existence of an effectively enclosed private domain and segregation with high level of privacy consideration indicate the above practice. High fences, very small or no windows etc. are some of the physical expressions of this aspect. The introvative courtyard house plan well

Fig. 8 - "Thlnnal" and "Nadai", at the entrance of a traditional courtyard house.

suited for this purpose. This was one of the main reasons for the success of this form for a long time in Jaffna. One can notice in modern houses too, the window shutters of the rooms are usually made-up of solid wood. Glass windows are normally limited to the areas such as sitting room dining room etc. These glasses too are generally translution type and all windows are fitted with decorative steel grills for security purpose.

Need for social identity

The traditional buildings had their own identity and there was no need to intentionally create one. However during colonial rule, several buildings including the ones built for traditional uses, followed western architectural orders and other similar decorative motifs etc. Some peripheral buildings attached to the temples and the domestic houses too were constructed with similar characteristics. (fig 9a, 9b) During the later phase of colonial rule, a few buildings had been built using later period South Indian elements in fa9ade treatment.(fig 10a, 10b)

Fig. 9a -A colonial period two storied courtyard house with western characteristic elements.
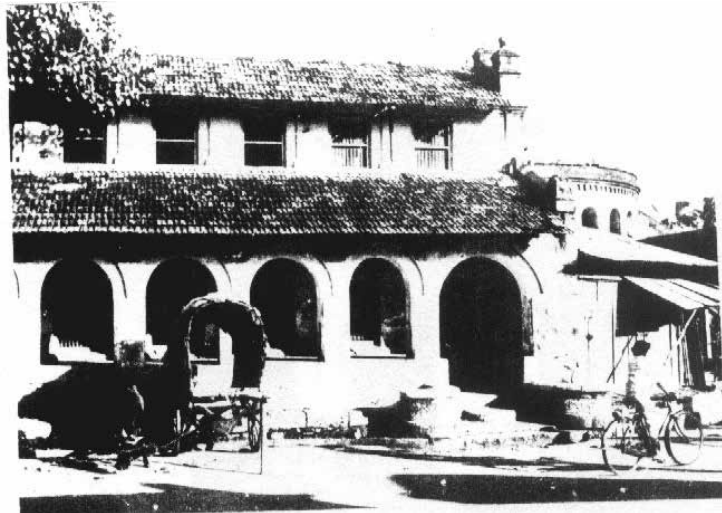
Fig. 9b -'Ganga Saththiram' a resting place ones existed in Jaffna town, with western characteristics.

Fig. 10a -Ramanathan Girls College building.

Fig. 10b -Parameswara College building, now occupied by the University of Jaffna.

Some basic spatial elements related to the architecture of Jaffna

'Veedu'

It has been already mentioned that the 'veedu' was the home proper in Jaffna dwellings. It is very much evident from the earlier discussions that this room does not mean a mere shelter, but a space with symbolic meanings related to the concept of space.

Similarly this room is considered sacred and symbolizes prosperity and wealth. This symbolism is associated with its usage as a depositary of valuables and this is physically represented and ritualistically reinforced by the installation of the image of the goddess of wealth in this room during the house warming ceremony.

Although this room provides sleeping space for children and women, adult females are not allowed access to this room during their menstrual period, as they are considered impure during this time. This limitation creates requirement for alternative sleeping space for women.

It has already been pointed out that this room remains in all types of Jaffna houses with all its attributes unchanged. Irrespective of the size, number of rooms or any other sophistication of the house, 'sasthra' rules are applicable only to this room. When speaking of location and orientation of the house, only this room is considered and accordingly located. Its sacredness and the symbolic associations remain same even in the

modern houses of Jaffna. Its importance as a primary space and its relevance, to the concept of humane space, still remain valid. Although this room is referred by various names indicating its prime status, many still refer this by the term 'veedu' (house).

Kitchen and Well

It has already been touched upon the importance of kitchen and well in Jaffna houses: This is not only related to their utility values but also pertaining to the values attached to them in the traditional rules. These are the only two other elements, apart from the main room, which are prescribed with specific locations in relation to the main room. In fact if the well cannot be located in a plot in conformity with these traditional rules, one will not venture into building a house in it.

As perceived in the process of building in Jaffna, the kitchen and well symbolically represent fire and water respectively. These two elements are associated with purification processes in Hindu ritualistic tradition and great care is taken to keep them with purity.

Courtyard

Generally a building form with central court is associated with encouraging air movement inside the buildings. In the case of courtyard houses of Jaffna, particularly the early examples have no relevance in this regard, as not enough windows had been provided for this purpose. Rains too play havoc and render larger portion of the areas around the courtyards unusable during rainy days. Courtyards of Jaffna houses were usually open and cannot be considered as suitable in terms of security considerations.

One of the important functions of this form with courtyard seems to be related to the attitude of the society towards women and the need for higher level of privacy. Above all the prohibition of the central space of the plot for building, by traditional rules, would have given the strength for persistence. There are obvious functional advantages of this form.

1. This effectively segregates activities, functions, gender, domains etc.

2. Creates a controllable open space.

3. Facilitate easy communication and interaction.

4. Provide space for various day-to- day and occasional activities.

This multi-functional character would have supported the existence of this element for long period in the architectural scene of Jaffna.

'Thinnai' (a platform created by raising the floor)

Periodic refreshing and revitalization is part of the human biological needs. Therefore the provision of facilities to cater for such needs become an important requirement In this regard the Jaffna architecture has its own share of concepts, methods and physical expressions, based on their unique worldview system, which are influenced by the habits related to the basic activities such as sitting, sleeping, cooking, eating etc. In Jaffna several day-to-day activities had been performed by sitting on the floor. These included eating, cooking, relaxing, studying etc. A few decades ago types of household furniture that can be found in Jaffna houses were very limited. Even in traditional courtyard houses, chairs, sofas, tables and similar furniture were not in use. However the traditional buildings catered for such activities by the provision of 'thinnai', 'nadai' short walls etc. Level difference between 'thinnai' and 'nadai' facilitated comfortable sitting and separated circulation spaces from the other areas for sitting, sleeping etc., and helped to keep those areas comparatively clean. Provision of the Combination of these two elements or 'thinnai' alone can be seen in a traditional building in many locations. Out side the entrance it serves as a charitable space cum informal social interaction area, inside the main entrance door, for formal visitors and further inside around the courtyard and other places for family members and close relatives.(fig 11 a)

Provision of this element was not limited to the domestic houses. In the resting places too these elements can be seen provided for the comfort of the guests. (fig 11 b)
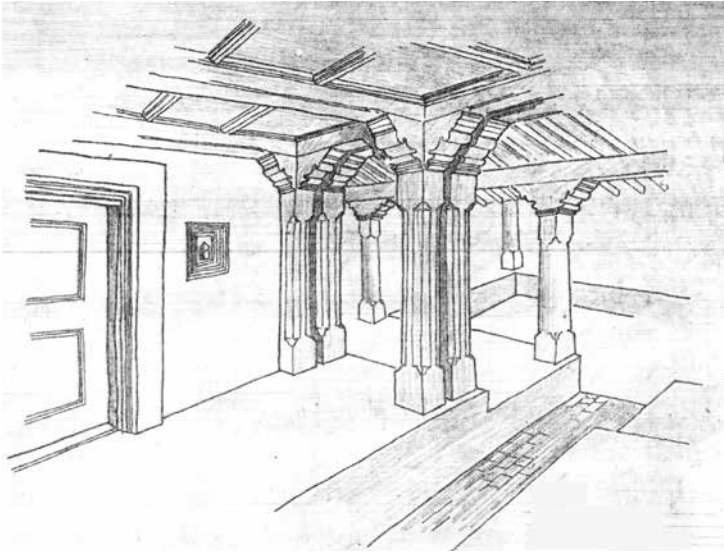
Fig. 11a - A perspective showing "thinnai" and "Nadai" inside the Traditional courtyard house.

Fig. 11 b - ·'Thinnai'' at the entrance of the dilapidated ·"Poothar Madam" a way side resting place - at Kopay.

Factors of Change and their impact on architecture

The social structure together with the values connected to it controlled almost all activities and their expressions in all fields in Jaffna. In this context an individual's expression of identity has been severely restricted by social controls. In the built environment as a whole and specifically in the domestic buildings this hierarchical social order is visible. As several duties and rights had been prescribed for various groups or casts indicate that the form of houses also would have been frozen at a particular level for a long time. This may explain the existence of large number of primitive type of buildings,

until very recently. In other words the social structure to some extent blocked the upward social mobility and corresponding impact on the architecture.

The colonial rule too had not brought considerable change in this situation at the middle and the lower levels of the society. The changes seems to have occurred in the houses built by natives who were closer to the colonial rulers to express their new status and associations. In fact the more wide spread changes in architecture was evident only when the spread of education and the nontraditional employment opportunities prompted a loosening of the hold of traditional social system. The wide spread use of loose furniture also coincided with rise of new educated middle class and affluence generated through the employment opportunities found in then Malaya and Singapore. This resulted in a large-scale social upward mobility factor. which prompted a shift towards western life style. Large number of new houses built during this period reflected this context. All level changes had given way for single level floors with adequate space for furniture arrangement. When the usage of loose furniture became a trend in Jaffna, the level changes in the floor to create ·thinnai· and ·nadai' combination has become more of an inconvenient arrangement.

**Fig. 12a - Front verandah of a colonial period courtyard house.**

The front 'thinnai' too was changed to a verandah (fig 12a) and at the same time it lost its function as a charitable space. This in fact did not mean a loss of charitable attitude, but indicates a change in mobility characteristics. Technological development had brought in fast moving vehicles and the traveling time had been

reduced very much. This made the genuine use of this space dwindled to a fraction. Many of the traditional courtyard houses, existing at that time, too had been converted in the same lines. (fig 12b).

This phenomena. not only affected the domestic houses, but also significantly reduced importance of the resting places. Subsequently many of these buildings had been abandoned and allowed to become ruins. (fig 11b}. Some of them had been broken to leave way for other uses. The rise of new affluent class marked the construction of new temples. A fair proportion of the temples dotting the Jaffna region now were built during this period.

The early buildings. built as a result of the above-mentioned social and subsequent cultural changes, seem to have not considered the need to express the identity of the community. Large number of such buildings including domestic houses. schools. temples and other buildings, built to reflect western characters by using architectural orders. decorative elements and motifs. Close to the end of colonial rule. together with the nationalistic sentiment, a need for cultura identity seems to have been felt, and this had reflections in the architecture of that period. This was limited to the surface application of decorative elements barrowed from later south Indian styles. Later specifically after the independence earlier period Dravidian elements

had been in use. Jaffna public library, Jaffna Municipal market building and many others are examples to this. This practice only reveals the effort of the community to associate itself with the more glorious past. Another noticeable wide spread phenomena in the architectural field in Jaffna is the conversion of the simple structures of many temples to reflect more decorative mixed styles with Dravidian features.
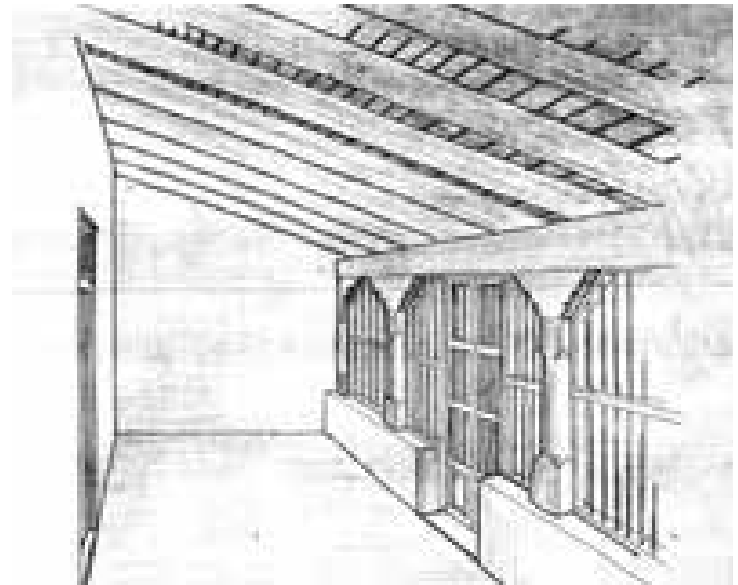
Fig. 12b - A front 'Thinnai', of a traditional courtyard house, has been converted to a closed verandah.

THE SRI LANKAN TRADITION FOR SHELTER

This is the Fourth of a series of articles on Traditional Sinhalese Architecture. The third article approved in the previous issue of the SLIAJ. In this fourth instalment Archt. Nimal de Silva deals with:

Archt. Prof. Nimal de Silva, FIA(SL)

The tradition is the opinion or belief or custom handed down from ancestors to posterity. The traditon is not static, it is the product of the functional demand adopted with the nature and environment, flavoured with culture and belief. It was devleloped with certain value systems, anything that was not acceptable to the society was gradually rejected, only what was proved useful for people were retained and adopted. The outcome of confidence and the human satisfaction experienced by the ancestors, formulated and precipitated the tradition. Today it is assumed that the ultimate objective of modemizing development is the urbanization and indstrialization. In a country like Sri Lanka with a rural population of more than 80%c one must be careful in formulating development policies. The result of inappropriate development policies which assume that increased agricultural production is synonymous with rural development, where such policies are based on large scale, capital intensive agro-industrial projects, there may be serious disturbance to existing settlement patterns.

The house or the shelter is only an item in a settlement system. The urban life was based on access to services but the rural life is more interdependent and harmonious in its survival and performance. It is important to understand that building a structure as a shelter was not the tradition but it promoted one building his own home. The settlement theories have developed over the last 150 years but the neatness of these concepts are based on a number of assumptions which are open to question when viewed from a developing country where the tradition has a strong impact in the settlement pattern and the individual shelter.

The comparative studies carried out on the concepts of space utilization and the shelter, in Colombo based shanty and ordinary rural houses revealed that the tradition was the strongest influence that governed the design and their behaviour.

It reminded that the crow lived in Panchikawatte area, built its nest on a telephone post using steel wires, nails, plastic and other scrap materials available in the locality. But the size, form and the method adopted was the same as any other crow who built a normal nest on a tree outside Colombo. It is important that one should realize the proper understanding of the Sri Lanka Tradition for shelter by the Colombo based administrators, planners and architects will provide basic guidelines to satisfy the cultural needs of the people and for the continuity of the satisfactory occupation.

The traditional house that has existed in Sri Lanka for more than two thousand years was an outcome of a strong philosophy of Buddhistic life - i.e. the simplicity and the impermenant nature of life. The house was part and parcel of nature, the materials were borrowed from the nature and returned to the nature. The traditional concept was to live in and around the open areas of the house and not within the enclosed compartments of the house and it was the most suitable solution for Sri Lankan climatic conditions. A house built in this nature, needs regalar maintenance and it was continuously embodied in the customs. There are cultural festivals at regular intervals such as New Year, Vesak, Sudde Poya (Esala), etc.

WARUWA   VENI BISSA   BISSA

The maintenance of the shelter by applying cow dung on the floor and walls, sometimes white washing, thatching the roof, cleaning the house etc., were aimed for the festival, hence the house was well maintained.

The adoption of the traditional house to suit the micro and macro enviornment was always a practical solution and interesting to understand in detail in order to appreciate its performance. The design and the slope of the roof provided protection from rain, the insulation capacity of the covering material and the breathing nature of the roof protected from the heat, a low wall plate height and long eaves protected the walls from the hot sun and rain and also covered the glare reflected from the cloudy sky. The gap between the wall and the roof also provided proper ventilation and defused light into the room. Construction materials used in walls were with very high insulation capacity. The verandahs with eaves, around the house and small windows kept the hot sun away and the interior of the house was cool and comfortable to live in this hot climatic region. The high plinth and the impermeable nature of the clay used for construction prevented the rising dampness during rainy days. The materials required for construciton was selected from the locality and the simple technology utilized to put it together was the basic reason for a low cost shelter.

BISSA   KURAKKAN ATUWA   ATUWA

The construction of a house in a traditonal form was linked up with a series of rituals that brought confidence and hope in the mind of the occupant on prosperity. The foundation was laid on an auspicious time specially selected by the Astrologer to suit the horoscopes of the occupant and his wife. Enshrinement of auspicious objects were made as a ritual with religious blessings and also requested help and blessings of all gods and deities. This brought in a spiritual entity to the new house, religious beliefs and practices brought confidence and blessings to the occupant in the traditional form.

COMPARI   ATU PETTIYA   ATU-GE
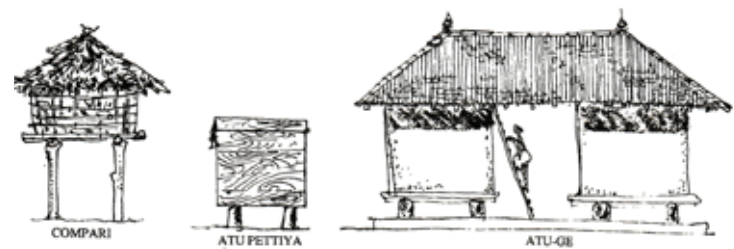
Village carpenter is the key technical adviser in house construction. The site selection, location, setting out of the house, the well, the granary, etc., were all spelt out in the tradition, and it has proved functional in relation to the activities and in creating a comfortable living environment. The technology used in traditional housing construction was practised today in the same simple way as what was found many thousand years in the past. In Valmiki's Ramayana, the famous Indian episode composed more than five thousand years ago, it was described how Rama, Seetha and Lakshmana built a wattle and daub house with jungle timber, twine and mud and the method of construciton described has no difference to the method practised today. The wattle and daub construction was also used in the traditional system as mud wall (tappa bamma), sun baked bricks (mode gadol), rubble packed mud walls (ketagal bitti), some times baked bricks with mud mortar (Gadol bitti) and laterite block walls (Cabok).
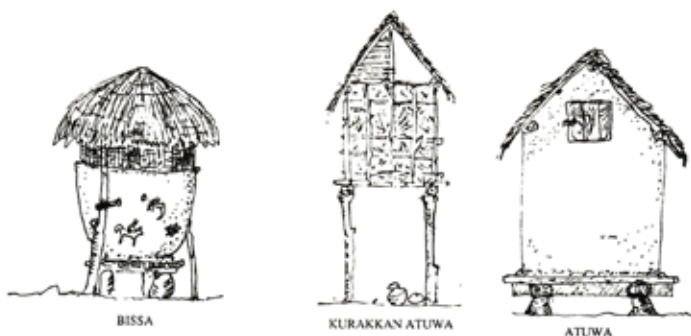
In construction of shelter, the roof was given special attention because it had to withstand heavy rains and wind in the monsoons, and the hot sun throughout the year. Nearly seven methods were adopted in roofing, to suit the availablity of materials in the locality and the social standings of the occupant. Straw was a popular roofing material in paddy producing areas mostly in dry zone but it was the material used in hill country

too. The pitch of the roof was about 45° and the straw was laid on jungle timber framework, to a thickness of about 200 mm either in bundle form or in just packed form and maintained applying a new layer on top of the existing at every harvest. In coconut growing areas, cadjan or woven coconut leaves tied in double using a tender coconut leaf was the common method adopted and also it was found in the hot climatic areas a layer of paddy straw was placed on top of the cadjan roof to extend its life span. Mana grass or Illuk grass which were about a meter long was used for thatching the roof in bundle form or spread and tied using timber sticks. In the Northern and Eastem coastal areas where Tal palm was freely growing, dried palmate leaves of this palm was the most commonly used roofing material and it can withstand both hot sun and the periodic heavy rain. Burnt clay flat tiles or half round tiles were in shelters used by clergy, royalty orchieftain in early days but later half round tile became the popular roofing material for anyone who could afford it.

In considering the basic arrangement of functional spaces, one can identify two basic concepts in arranging the rooms in relation to the open verandah or pila. Most popular and general plan type was to have an outward looking house with an open verandah to the front as the outer living space. This space is open and free, sometimes protected with half walls specially in rainy areas but well ventilated and was the social area where the occupants entertained out siders. A place to sit was provided by spreading a maton a raised clay plinth, a woven bed with a mat on it or with different types of verandah chairs. The inner rooms are small, dim lit and with no windows or may have one small window, and it was mostly a private space used by females and children to sleep.

The granary, a detached structure of the house, was found in different forms to store paddy and other grains and always located in front of the house, in most parts of the dry zone and a large timber box placed on stone stumps kept inside the house was used as the granary in wet zone houses. The size and number of these granaries varied according to the wealth of the family. The kitchen was divided into two functional spaces, the preparation area was mostly open and the other enclosed hearth area was with a smoke lattice hanging above the hearth to keep dry food.

Inward looking houses were mostly found in hill country with one or more courtyards, the rooms were located and entered through the verandah that was found around the courtyard.

In this plan form all the living activities were confined to the open verandahs and the required lighting and ventilation were obtained from the courtyard. The granary was also located in a corner of one of these verandahs. The larger house, called walawwa belonged to the land lords and chieftains and had different rooms and spaces located around many courtyards. The main house of the larger walawwas had an upper floor, a two storeyed granary and many out houses. There were two types of courtyards found, one was designed space coming within the basic space and the other formed by locating different buildings around an open space and joining them together with a wall. During the 17th Century the Dutch who established in Sri Lanka adopted the open courtyard system in their urban houses.

Even though Sri Lanka is a small island one can see a distinct variation in the topography forming the central hill country surrounded by a flat low country. It can be divided into climatic regions in relation to the rainfall pattern, the Central, Western, South Western and Southern parts of the island coming under the wet zone with a high rainfall and subjected to the South-West Monsoon, the rencaining part of the country is dry with North-West Monsoon rains in December, January and February. With these variations in the topography and the climate, different provinces in the country is subjected to varying micro climatic conditions with a change in vegetation and temperature. It is interesting to note that these variations have influenced the design and construction of the traditional house hence a provincial identity in the traditional house form is remarkably interesting. In addition to the climate, the difference in ethno cultural groups, occupational pattems and social behaviour in different provinces have influenced the design of the traditional house.

(a) North Central Province House Type

It was a linear house with a high plinth, wattle and daub construction. The front pila was open, about a meter wide with a mud floor, the overhanging roof was supported on round timber posts and because of the low eave, one who sits in the linear mat spread on the pila is well protected from the glare and the hot sun.
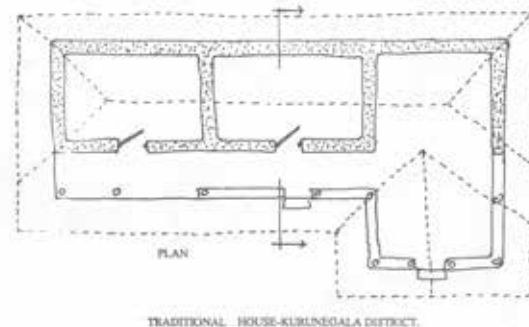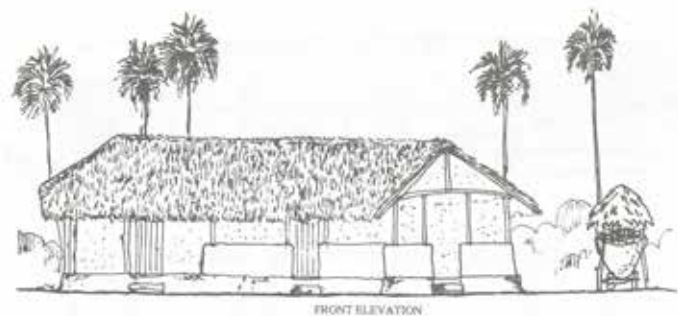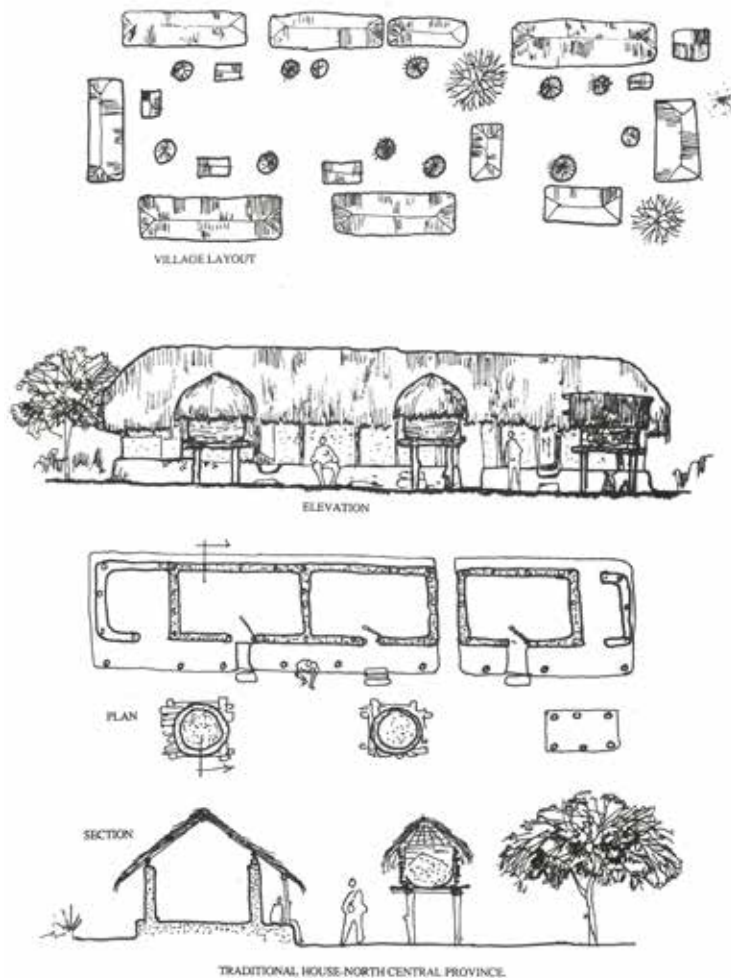
Each room along the pila generally represented a family unit with stepping stones kept in line with the door leading to the room. Two side verandahs were extended with partly hipped roofs and a half wall with one of these forming the kitchen and its working area with a pounder, grinder etc.

The other was used for storing agricultural implements or to keep a bed for an elderly male or some times children used as the study area because the rooms are rather gloomy due to absence of windows, but the light inside these room was sufficient for other activities. The roof was thatched with straw and the house could be extended lengthwise by adding more rooms to the existing link. The granaries found in front of the house

VILLAGE LAYOUT

ELEVATION

PLAN

SECTION

TRADITIONAL HOUSE-NORTH CENTRAL PROVINCE.

were to store paddy and Kurakkan (Eleusirie Coracana). The paddy storage structure was of two kinds, both raised above ground on four legs to a height of about 1,750 cm and with a timber platform on the top, the granary known as "Varuwa' was circular in form with an external jungle timber structure to support the straw

wall and the timber framed conical removable, straw roof cap. The other was known as Veni Bissa', in this case the jungle timber frame work found in Varuwa was replaced by a closely wrapped rope made out of straw. The roof cap was similar. The Kurakkan Atuwa was rectangular in plan on a similar platform, with walls made out of jungle timber and Tal Palm leaves. The roof was two pitched gable with straw covering and the chamber is entered through an opening at the top of the gable wall. A fire-place to boil milk, or in some cases the kitchen was found under this granary and the smoke and the heat would have helped to extend the priod of storage and protected the grain form insects and humidity.

(b) Kurunegala House Type

It had many similarities to the typical North Central Province House, wattle and daub construction, general house plan indicated two long rooms along the front verandah which was about 1,500 cm wide with a half wall on the outer edge. The verandah was extended to the front, either at the middle of the linear house or

SECTION

SIDE ELEVATION

FRONT ELEVATION

PLAN

TRADITIONAL HOUSE-KURUNEGALA DISTRICT.

at a side with a front gable and forming an entrance porch with a half wall around. A special curved timber beam was placed across the open gable with a king post supporting the ridge. This additional spacious verandah may be required to spread the paddy just after the harvest for drying in case of rainy weather. The roof was covered with cadjan because it was a coconut growing area and some times covered with straw.

The granary that was constructed in front of the house was basically a circular cane basket raised above ground and placed on a set of stone stumps to protect from the ground dampness, structurally stabilised with three jungle poles planted on the ground and tied to it. The basket was covered with clay and cow dung forming a full wall or the top one-third was left for ventilation, keeping the upper parts of the basket exposed, the roof was a conical cap, thatched with straw, the paddy was poured or removed from the top by raising the roof cap. In some places these Bissas were white washed and decorated with drawing of animals, people, plants and flowers in abstract form and these were referred as Bihi Paintings.

(C) Mullaithive house Type

This housing type was circular in plan form and found in Nothern part of Sri Lanka. The time and the modernization that has crept into these areas have erased most of these traditional houses but in Mullaithive, Puthukkudiyiruppu, Thunukkai and Amban these cirular housing tradition still prevail. In Mullaithive the house was a composition of four basic buildings around an open garden area but enclosed within a three meter high fence made out of Tal Palm leaves. When entering through the gate called 'Padalai' one comes to the open compound 'muttam' where the main round house was found in front of a half open rectangular hall the 'mal' and it was the place where outsiders were entertained. The kitchen was a separate building either circular or rectangular in plan with the kitchen yard visually barricaded by a fence.

The Komparai or the granary was also a circular basket structure raised on four pillars with a conical roof out of Tal Palm leaves.

This circular house was basically a timber framed mud house with a conical roof thatched with Tal Palm leaves. The basic house was a circular room entered through a beautifully panelled door and the verandah was in front

ELEVATION

PLAN

SECTION
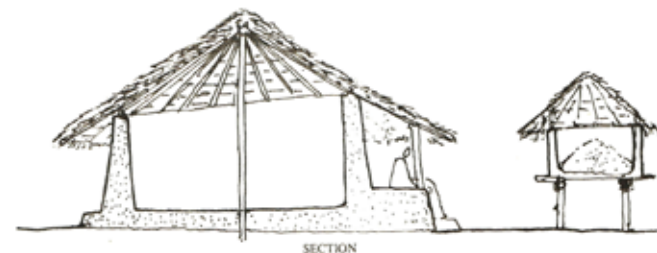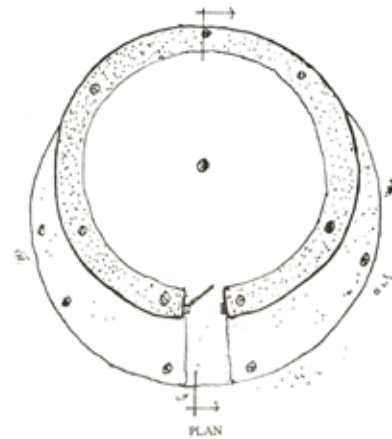
TRADITIONAL HOUSE-MULLATIVU DISTRICT.

of the circular room as an extended part of the cave with astretched and raised plinth the 'Tinnai' used as a place for people to sit. If the diameter of the house exceeded more than three meters a jungle post was planted in the middle of the house to support the roof. With the low eaves that provided protection from the hot sun and a well maintained 'tinnai' was a very confortable place to sit and relax.

(d) Jaffna House Type

The layout of the Jaffna house with a covered fence enclosing the compound and the arrangement of individual units in relation to one another was very much similar to the Mullaithivu house, but the main house is rectangular in shape with an open front verandah raised as a tinnai and having one or two rooms with a hipped roof thatched with Tal Plam leaves.

LAYOUT PLAN.

ELEVATION

PLAN

TRADITIONAL HOUSE-JAFFNA.

SECTION

ROOM   KITCHEN   ROOM

ROOM

ATUWA.

PLAN

TRADITIONAL HOUSE-KANDYAN FARMER'S.

(f) Ruhuna Chena Housing Type

This was a very simple small rectangular house with one room and the verandah, wattle and daub construction, with a rough finish and very temporary in nature. The roof was thatched with Mana grass Iluk grass or cadjan. The tradition is that a newly married couple will always put up a new house for their occupation.

(e) Kandyan Farmer's House Type

The basic form of this housing type was square with an enclosed plan of about 10M X 10M. It was an inward looking house with a small courtyard at the centre. The building was raised on a mud plinth to a height of about one metre, with the main entrance forming a decorative feature with a nine piece door constructed according to Kandyan architectural style. In the plan one can find two sides were open towards the courtyard forming a verandah and used as the living space. There were two linear rooms entered through a narrow corridor at the edge of the courtyard but had no windows. The light from the courtyard entered the room through the door. The kitchen was found semi enclosed within the house and then the granary a timber box raised on four stone stumps was found in a corner of the verandah. The roof was hipped with the four ridges forming a square (Hataraendige) with no roof above the central courtyard.

(g) Coastal Housing Type

There were the houses occupied by fishing community along the coastal area. It was rectangular in shape, one roomed house with no plinth and no verandah. The roof was a gable with cadjan covering and the walls were also constructed out of cadjan. In some areas the roof has extended up to the ground without any wall and the door was also very temporary in nature.

It was very interesting to note that a provincial identity in traditional housing types were still preserved in those locations due to the functional environmental and the cultural acceptance of those plans and forms to the occupants. The deviations from the basic plan was common due to different requirements of various families, availability of materials in relation to their economy and the influence on styles.

TRADITIONAL HOUSE -KUHI.NA.   CHENA TYPE.

FRONT ELEVATION   SIDE ELEVATION

TRADITIONAL HOUSE-COASTAL AREA.

Within the last two hundred years the colonial influence on housing and construciton methods were synthesized with the local architecture and envolved many other types of houses that came in parallel with the tradition. These houses were mostly found in the coastal areas from Negombo to Matara. The verandah in these houses became an important architectural feature with decorated timber or masonry columns, doors and windows were much refined and painted in colour, the floor finished either with clay tiles or cement. The half round clay tiles became more popular as a roof covering and the walls white washed and plastered even though it was constructed out of mud or cabok. These houses were environmentally well suited, it was functional, durable and culturally acceptable to the socio economic condition of the rural folk.

The tradition was always an acceptable solution to the problems which prevailed in the society. The tradition was not static, it changed with the time and the changing needs of the society. If the change was in harmony and sympathy with the nature and the culture it survived comfortably giving a new outlook to the brought down tradition. When the change was in conflict with the nature and the culture that did not survive and got eliminated with the time. The Sri Lankan Tradition of creating a shelter for occupant was a product of long time experience, which embodied the Sri Lankan Culture, life pattern and the environment. The tradition was there to provide a foundation and strengthen to the shelter to come in the future.
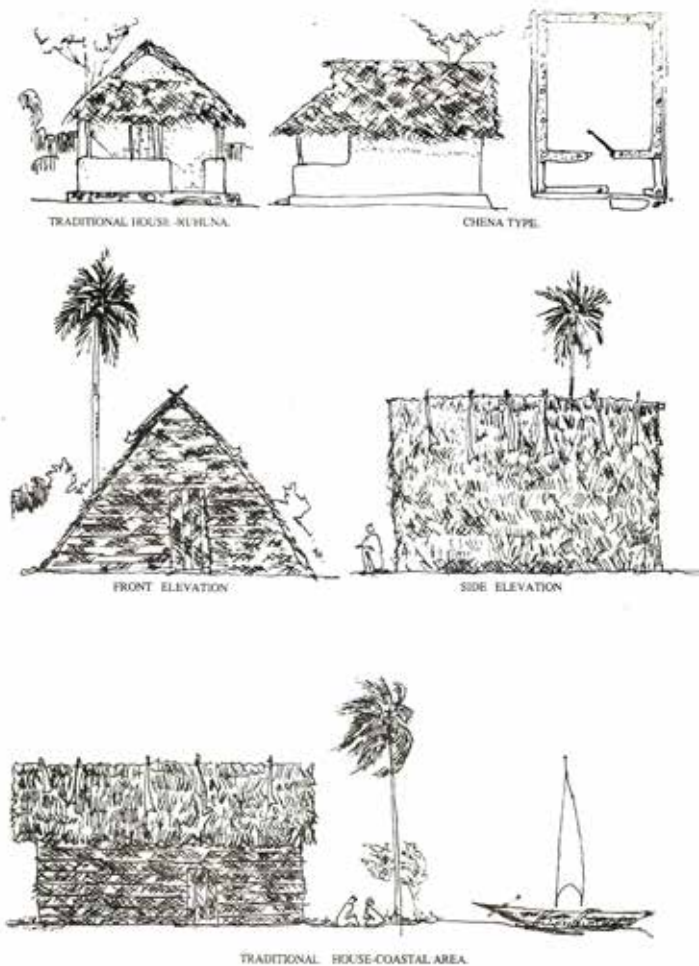
THE CONSERVATION OF OLD COLOMBO

"Architecture reflects man's needs in a way no other form of art does, and is thus the most complete and accurate witness to the material and spiritual conditions of an age. This in some ways is a privilege, but it also means that architecture is more exposed than other works of art to the danger of disfiguring alterations; for it must contine to satisfy man's changing demands.

– **Piero Gazzola**

Manel Fonseka

The ever-increasing need got houses ..." "In countries of the tropical regions of the world the danger to cultural traditions is even greater. Instead of a gradual development, there industrialization brings abrupt and frequently overwhelming change so that the need is urgent to collect and preserve before all that is meaningful disappears. Moreover, as so many of the changes are due to external influences rather than to self-contained evolution, the break between the recent past and the present is a much more radical one than in countries where industrialization is an old phenomenon." Hiroshi Daifuka, Head, section for the Development of the Cultural Heritage, UNESCO.

And later in this section (originally called "The Threat to Historic Environments") Which was deleted from the Monumentum version as it discussed aspects familiar to the international conservation movement: "We will probably be judged not by the monuments we build but by those we have destroyed."

Introductory note:

The original article was a longer essay written in November 1978 (The Conservation of Old Colombo), with 55 photographs, and several boxed quotations. An abbreviated version was published in the Weekend on 31/12/78 and 7/1/79 ("Conserve Colonial Colombo"). An updated and slightly revised version appeared in the Ceylon Daily News on 26/9/80, 27/9 & 30/9 ("Conservation of Old Colombo"). A further revision was published in Monumentum, Vol. 25 (2), June 1982, pp. 102-128. Figs. 1,7 and 13 of the present article are by Jukka Jokilehto and the rest are the author's.

A number of buildings photographed by the author in 1978/9 have been demolished or changed considerably. Among those mentioned in this article that have been demolished or altered beyond recognition are: Bogala Building, the Chatham Street Mosque, the Delft Gateway Guardhouse, the Bristol Buildings, the Sea Street corner house (Fig. 8), St. Mary's Church, Sri Kathiresan Street (Fig. 10), the Gintupitiya Street Madam (gaudily revamped, though not, perhaps, beyond retrieval), and the whole terrace of lawyers offices in Hulftsdorp Street (Fig. 12).

Fig.1 The demolition of the fire-damaged Grindlays Bank, York Street.

Colombo's urban heritage:

"A city without old buildings is like a man without a memory."

The Pettah and its discoveries:

"The Pettah is the only part of the city where the visitor can get even a faint idea of what life in Colombo night have been like before the Twentieth Century's gangrene set in."

- Paul Bowles.

Towards the end:
"When an architectural monument no longer serves the purpose for which it was built, its conservation ceases to be a practical necessity and becomes a purely cultural task, the importance attributed to which will depend on the cultural maturity of succeeding generations and their sense of the urgency of preserving their cultural heritage."

– Piero Gazzola

The historical origin of the city of Colombo goes back to a port settlement whose existence is documented from about the tenth century. By the fourteenth, it was a fairly important trading centre, and Ibn Battuta, the Arab traveller, described it as 'one of the largest and most beautiful cities in the island of Serendib'. Kelaniya, today a suburb of Colombo, was then 'surrounded by a rampart containing rows of palatial, multi-storeyed buildings, with walls, pillars and flights of steps decorated with frescoes, with a network of broad streets and two main arteries filled with throngs of men of various climes and with wealth of all sorts', according to a contemporary Sinhalese text. The importance of Muslim traders in the port is confirmed, partly by remains such as tombstones, and partly by the accounts of Portuguese writers of the sixteenth and seventeenth centuries.

During the colonial conquest of maritime Sri Lanka from the sixteenth century onwards, Colombo developed considerably as a commercial and military centre. The Portuguese, Dutch and British, in turn, made major contributions to the architectural fabric of the city, as did the indigenous population fo traders, clerks and artisans. The Portuguese town was in ruins in 1656 after prolonged siege and bombardment by the Dutch, who then reduced the existing fortification to what is roughly the present Fort. By the beginning of the nineteenth century the British were in occupation and the Fort had mainly British residents. The Pettah was then a fine residential district occupied by the Dutch and Portuguese, while the Sinhalese, Tamil and Muslim population dwelt in the suburbs, where some of the walawwas? of the Sinhalese gentry are still to be found.

In 1869 the British blew up most of the Dutch fortifications and commenced building new military barracks. The Fort developed into the seat of government for the whole country, as well as the banking and commercial centre. The law courts moved to Hulftsdorp. The Pettah has declined from being a residential district into a trading/commercial area with the character of a bazaar, and the areas beyond are now both residential and commercial. In 1948 the Fort of Colombo passed back into Sri Lankan control after 450 years of foreign occupation.

Colombo still has a distinctive architectural personality, its own Sri Lankan mix, which draws on both local and foreign sources -- Sri Lankan, Arab, South Indian, Portuguese, Dutch and British. Though much has been written in an evocative or historical way about the city, and the history of a few of its more famous buildings has been documented, there has been no real appraisal of its architectural quality and character, the conservation of which is now critical. The domestic and commercial buildings of Kochchikade, St. Sebastian, Hulftsdorp, etc., and the grander public and commercial architecture of the Fort, are now threatened by the insistent forces of modernization. Yet these form a rich and varied repository of our urban architectural traditions, such as exists nowhere else in Sri Lanka. Sometimes scattered, sometimes concentrated in long terraces, many of the individual types are such as will not be seen again if they fall now before the impatient, undiscriminating bulldozer.

The ever-increasing need for houses, shops and offices, rocketing land values, property speculation and the toll of the motor-car all these are familiar major factors threatening the survival of our historic urban environments. Quite suddenly, almost before we realize what is happening, we wake up to find that a vital, diverse and exciting urban landscape

has been obliterated. Its associations and cultural patterns, its lively roof lines, varying heights and multifarious architectural features are replaced by a banal and depersonalized architecture of steel and

concrete towers. When one humanscale building has been removed and replaced by such a substitute, the econimic, spatial and stylistic logic results in the development of the surrounding area in a similar manner. We are robbed of a past shaped by many generations, and often we are given in return imported designs and concepts evolved for other climes and totally unsutied to our own. Narrow streets become unbearably claustrophobic as buildings of several storeys replace the older, smaller structures. Even our relatively broader thoroughfares, which hitherto admitted sea breezes and views of trees and gardens, are being increasingly hemmed in by walls of glass windows which seem to reflect extra heat into the street, while boasting airconditioned interiors. The multistoreyed, glass-fronted designs are unsuited to a hot country which has few streets wide enough to take them comfortably.

In the industrialized countries, such architectural solutions have been developed over a considerable period of time, and although they have ousted older architectural forms and transformed parts of the old cities, the pace of change has been such that the alert members of society have had time at least to develop an awareness of the value of what was being lost. Sometimes that consciousness came very late and much damage had already been done; nevertheless, in the West an internally generated industrialization has been spread over a long enough period for its destructive elements to be recognized, and for certain processes to be modified, reversed or halted. In countries like Sri Lanka, however, which are subject to violent and rapid change and the demands, often, of externally imposed solutions, there is little time for a conservation consciousness to develop and have an impact. There is, however, some legislation which leans in this direction. According to the First Schedule of the 1956 Town and Country Planning Ordinance, provision may be made in planning schemes for the prohibition or restriction of the use or development of land for the purpose of the preservation of places and structures of religious,

historical, architectural, archaeological or artistic interest. " The Antiquities Ordinance is also pertinent:

The Minister may by Order in writing declare that any specified monument

which dates or is believed to date from a period prior to the 1st day of January 1850, shall ... be deemed to be an ancient monument for the purposes of this Ordinance. The Ordinance then goes on to spell out the legal conditions of the protection of a building once it has been declared an ancient monument.6 However, it would now seem that a more dynamic application of these laws and an updated definition of what an ancient monument is are required. Most would agree that building activity of any interest, worth preserving for posterity, did not cease in 1850. As a result of pressures for a conservation policy, in October 1979 an official of the Ministry of Housing and Construction announced that the Government would soon introduce legislation to conserve all historic buildings. In February 1980 the Committee for the Preservation of Old Buildings of Historical and Architectural Value was set up, consisting primarily of government officials, to advise the powerful Urban Development Authority (UDA) on questions of conservation. It was to be a purely advisory body, without any powers of implementation, and was entrusted with the tasks of drafting legislation to protect buildings not already covered by existing ordinances and the preparation of a list of scheduled buildings. So far, however, neither laws nor list has appeared. Because of Sri Lanka's rich and ancient civilization, as represented in such famous complexes as Anuradhapura, Sigiriya and Polonnaruwa, we tend to lose sight of and to undervalue the more recent achievements of our people under national or colonial rule. This is where there is a need to take a fresh look at the old streets of Colombo, where wealth of material awaits documentation and appraisal. This process is to some extent under way, but it is hampered by time factors, lack of coordination, insufficient commitment and an absence of public awareness and support. There are many who value the quality of these old streets (and not only those who live and work in them) but they cannot always articulate their feelings or make their voices heard.

Fig. 2. Ministry of Information, Prince Street.

Colombo's urban heritage

There are at least a dozen areas which are crying out for an active conservation policy as an integral element of a development plan. These include the Fort, Pettah, Kochchikade, Masangasweediya, St. Sebastian, Hulftsdorp, Grandpass, Kotahena and Mutuwal. In this brief survey we propose to touch upon only some of these areas which are most likely to undergo rapid development and change.

The Fort, with its ornate building styles, long arcades and broad avenues, is largely late nineteenth/early twentieth century in character. Large and impressive public buildings, banks, business houses and hotels dominate its main streets, and there are several splendid architectural sequences. Medium-sized shops and offices occupy the narrower cross roads, and the only residential sections are two groups of apartment blocks erected in the 1930s. Tucked away, here and there, are several relics of the Dutch occupation. The Pettah is a more intensively built-up area, with a much older configuration of buildings and more vital and local qualities. It is now primarily commercial and highly congested, though it once contained many fine houses and shady walks. Its old seventeenth-century grid plan is still preserved. The extensions of the Pettah to the north and north-east (now deliminated as Kochchikade and Masangasweediya) are lined with dwelling-houses, shops and warehouses, sometimes cheek-by-jowl but more generally in separate concentrations. Like Hulftsdorp and St.Sebastian (or Aluthkade, Kehelwatte and Masangasweediya), they are spread out over several undulating hills with long avenues and vistas worthy of a great city. It is true that narrow, overcrowded lanes also exist here: but while much of the area is congested, even largest sections are still predominantly residential and provide acceptable standards of housing.

Fort

The Fort of Colombo, apart from its grand public buildings (Figs 2 and 3), still contains a number of interesting old structures. One such is the long building bestriding Hospital Street and Canal Row - the old Dutch hospitalperhaps a unique survival of this period in this part of the world. Facing it are a number of old shops dating from the seventeenth and eighteenth centuries, with lofty wooden pillars, and large, heavy doors with enormous hinges, surmounted by characteristicexpansive 400-foot long frontage of Bogola Building (originally H. W. Cave & Co., publishers and booksellers) has lost its former grandeur under a plethora of shopfronts and signboards, and its internal courtyard had become a rubbish dump; but it would be easy to restore its integrity and dignity. However, it appears that the public body which has acquired it plans to erect a 30-storey building on the site. Opposite, there used to be the sizeable remains of a fine late nineteenth century terrace where George Steuarts still has its offices; this was part of a large sequence which began to be demolished some years ago. In March 1980 the office of the Cargo Boat Despatch Company was torn out of the centre of the terrace and replaced by a banal structure with a concrete hood cantilevered over the street about fifteen feet beyond the rest of the terrace. Halfway down Chatham Street is a lonely survival of the eighteenth century-a masonry columned building now used as a mosque. Though only part of the original facade remains, something of the earlier character of the building survives and more could be retrieved. Opposite is the shop, Lalchands, a well-preserved early nineteenth-century building with wooden pillars and antique windows elevated above the street on a high plinth. It was to have been replaced by a five-storeyed building, but conservationist pressures may have affected this decision. The handsome building in Prince Street, with its columned upper storey and raised internal courtyard, which now houses Air Lanka (Fig. 4), seems to have preserved much of its original form - a quirk of fate in a street which was substantially rebuilt in

the early part of the present century. In Bristol Street we see one of the few survivals of the Dutch fortification, the Delft Gateway Guardhouse (1702), with part of the old fort wall. Now used as a police have been listed long ago under the existing Ordinance. The land is now required for a high-rise block and its being made a protected monument. However, plans to demolish it have been temporarily shelved for financial reasons.

There are also two important green spaces in the Fort. The small but delightful Gordon Gardens used to be open to the public, but it is now enclosed by a high wall and can be entered only from the grounds of the President's Office. The 6.5 hectare site known as Echelon Square was, until 1980, a large playing field surrounded by a number of nineteenth-century military barracks, described as the finest ... in the East at the time they were built. They are now being demolished to clear the ground for a 'glittering urban complex, complete with banks, supermarkets and a vast underground carport'. Colombo's tallest building (52 storeys) will be erected here by an overseas bank, and similar developments by private enterprise will gradually cover the rest of the site. Apart from the loss of this important open space and the handsome barracks, the last three or four years have seen the disappearance of several other notable buildings in the area. In October 1978 the Employment Exchange in Lotus Road was demolished, but the site has not been developed. 9 Only two groups of vaulted warehouses, (pakhuizen) from the Dutch occupation remained after others were demolished in the 1950s. In 1979, despite energetic efforts to save it, half of one group was dynamited to provide an apparently urgently needed sure (as yet undeveloped). The remaining warehouses should be preserved and rehabilitated. In 1980 the long, two storeyed Registrar-General's Office in York Street 10 was demolished and a ten-storey bank is expected to go up on the site. What was the old Bristol Hotel, nearby, is also to be removed although operations seem to have been temporarily suspended; and in October 1980 fire gutted the adjacent centuryold Grindlays Bank (Fig. 1). The demolition squad moved in hastily to take down the facade while conservationists were trying to procure a preservation order on it. This last example illustrates the importance of a building which, while not being remarkable in isolation, is valuable because of its integration into the overall arcaded architecture of the street.

Fig. 4. Air Lanka office, Prince Street. A late eighteenth or early nineteenth-century building in which the arcade and colonnade were probably open originally.

The Pettah and its environs

But for real discoveries, or rediscoveries, not just of single buildings but of whole streetscapes where a unique character is preserved, we must go to the Pettah and the areas lying to its north and east. Walking through these streets on a Sunday, we can study the architecture at our ease, undistracted by trade and traffic. In the main grid, we find a variety of styles and features, ranging from large, highly ornate buildings with rows of windows and arches and elaborate parapets concealing low-pitched roofs, to more 'local forms with wooden columns and enclosed balconies. Occasionally we find tiny unpretentious structures peering out from under low, sloping roofs, crushed between lofty buildings; and

Fig. 5. The Post Office, First Cross Street. This was a draper's, F. X. Pereira's, from 1905 until about ten years ago. The building probably dates from the late nineteenth century.

we may also chance upon unexpectedly well-preserved and attractive houses tucked away in dingy lanes, like Kapirimudukku Mawatha. A number of old 'Dutch' and early 'British shops and houses can still be found here, some in fair condition and little altered. In many, the wooden or masonry-columned verandah has been enclosed in a shopfront, but often the pillars are still visible in the masonry wall.11 Variations of these typical street houses of the eighteenth and early nineteenth centuries, which combine Sri Lankan, Portuguese and Dutch elements, can also be found in north and north-east Colombo, where colonnaded verandahs have been similarly enclosed in masonry or lattice walls. A careful conservaton effort could recover sizeable groups of this kind.

There are also a number of fine old 'monuments' here, like the Post Office (formerly F. X. Pereira's) in First Cross Street (Fig. 5), the church of St. Philip Neri in Olcottt Mawatha, and the handsome eighteenth or early nineteenth-century building housing the City Dispensary and Bastian & Co.12 Another impressive survival is the former Post Office in Prince Street, a seminary or orphanage during the Dutch occupation and the first building in Colombo to be restored as an official act of conservation (Fig. 6).13 It has just been opened as a Dutch period museum; but even as we admit it, we regret its isolation and are made acutely aware of the need to conserve not simply single monuments but sequences, groups and areas which should be integrated into modern

planning. Several good examples of houses dating from the turn of the eighteenth century, which contribute to the entity of this area, are worth conserving in this street. At the east end of Main Street, the old Town Hall (1873) and the Edinburgh Market (a large, iron-colonnaded enclosure of the same period) (Fig. 7) have just been restored and there are plans for the rehabilitation of the surrounding area.

However, recent events in Sea Street (part of the old Indian Chetties' quarter) underline the need for knowledgeable rehabilitation. Until 1980 the buildings at the south end were obliterated by a forest of signboards peculiar to this street; but in a well-meant "improvement' the signboards have been drastically reduced and relegaed to demure positions above the shopfronts, and the external walls of all the shops have been faced with hideous shiny brickwork. This simply vulgarizes and detracts from the vital character of the area, the once exuberant street of goldsmiths. The north end of Sea Street is very different in character (Fig. 8), and the old temples (kovils), warehouses and dwelling-houses provide an exciting architectural experience. The eye moves from pillared upper storeys, embellished with wrought iron, to intricate roof balustrades, down to handsome panelled doors at street level. Smaller, plainer buildings (frequently warehouses) set off these elaborate maroon and blue fantasies.

Suddenly, one comes upon a little pale blue house, with cream detailing and bright blue window shades and shutters, an apparently old and traditional use

Fig. 6. The Dutch Museum, Prince Street. Originally the weeskamer, a Dutch seminary or orphanage, dating from the early eighteenth century and renovated in 1780. In recent years it was a post office until its restoration by the Archaeological Department.

Fig. 7. *The old Town Hall and the Edinburgh Market, Main Stre*

At the end of Chekku Street is St. Mary's, a rare and beautiful church which provides a link with Portuguese history and architecture. It was built at the instance of Catholics in Goa to replace a Portuguese church destroyed in the Dutch bombardment of 1655-56. The ruins of this were still visible in 1814 when an English Protestant church was built over them. Stylistically, St. Mary's probably recalls many features of its predecessor and is the only known example of its kind in Sri Lanka (Fig. 10). It is one building that has been saved by dissuading the Church authorities from demolishing and rebuilding as they had planned. Equally urgent action is needed in Gintupitiya Street to rescue the crumbling arched, masonry entrance of the Dharmachatram Madam, flanked by a fine pair of stucco lions and decorated niches. Though of quite recent date (1891), it is the only structure of its kind in Colombo; yet it lacks and kind of protection. St. Sebastian, Hulftsdorp and their environs Moving out of the Pettah area, we start to walk up

of colour going back many centuries. By the side of this house one can turn up into the upper part of Chekku Street across a barren piece of ground, which could so easily be turned into a green and shady space connecting these two fine streets. Chekku Street (now Sri Kathiresan Street) is perhaps the most

extraordinary in this area, though its quality may not be immediately appreciated (Fig. 9). To a large degree it has preserved its ancient character, with some exceptions such as a hideous cinema and a sadly revamped church. The architecture of the upper end of this street, with its pavements and raised platforms, sheltered by the extending overhang of roofs (like open verandahs) from one end of the block to the other, is rarely to be met with anywhere else in Sri Lanka." It is extraordinary that in a commercial area such as this the street has remained almost entirely residential and kept its remarkable character. For anyone who has lived in Europe, walking along Chekku Street is like coming upon a medieval lane in the middle of a twentieth-century town." It should be preserved at all costs; there is a wealth of material for study here, historical, social and economic, as well as architectural.

Fig. 8. *Sea Street, a corner house*

Fig. 9. Houses in Chekku Street, dating probably from the seventeenth and eighteenth centuries.

Mihindu Mawatha, past a large new supermarket erected on the site of the old Police Station demolished in 1978.16 Just beyond is another decaying building with a fine facade, worthy of restoration but probably destined to suffer the same fate. (Fig. 11) We pass Marties Lane, where scores of families are crowded together in narrow passages (euphemistically called 'garden) admitting little light and less air. We cannot romanticize these dwellings which are not fit for human habitation, but further up, at the corner of Mihindu Mawatha and St. Sebastian Street, stands a substantial late nineteenth century dwelling colonnaded along one side and guarded by three stone lions. In 1978 it was to be demolished, but it still survives. From this point all the way to the Law Courts are attractive old buildings, including a number of single-storeyed, wooden pillared, late eighteenth and early nineteenth-century types (Fig. 12). A have been scheduled for demolition, but with a little imagination the whole sequence could be preserved and improved. New uses could be found for those not in residential use, and the special caharacter of the area could be retained. Other interesting old buildings can be seen at the corner of Mihindu Mawatha and St. Sebastian Hill (Fig. 13), but already haphazard development has permitted many jarring interruptions in this fine townscape, like the 'modern' dwelling built at the side of an exquisite lattice-fronted house which is part of a group of old buildings in the curve of the road facing St. Sebastian Hill. Other interruptions include the Bank of Ceylon and a three-storeyed building which breaks up the colonnaded sequence further along. Beyond the neoclassical facade of the messenger Street, also

retains a number of attractive old buildings; and even houses built at the turn of the century with decorative masonry and concrete screens instead of wood, have acquired a patina which softens the impact of the modern materials. In this busy thoroughfare most of the buildings are long and narrow in plan with courtyards at the rear, offering ideal solutions to the problems of noise and privacy. Many have lightwells, surrounded by wooden pillars, and in messenger Street doors inside each house can be thrown open to enable the occupants to pass from one end of the terrace to the other without stepping out on to the street. Parallel to Messenger Street is the more congested and commercialized Old Moor Street, where the handsome frontages, wooden doors and window shutters, fanlights and deep interiors are usually obscured by throngs of carts and lorries. Turning north again we come to New Chetty Street where, despite the modernization or rebuilding of a number of houses, several courtyard

houses still remain. 18 In Vivekananda Hill and Jampettah Street are two large, impressive street houses of the walawwa type dating from about the middle of the eighteenth century (Fig. 16). One was astonishingly scheduled for demolition, and it is clear the owners are unable to maintain it. Development plans were subsequently altered so that the house could be retained, but the slight deviation will result in the demolition of an attractive old house opposite. Here is an urgently obvious case for legal protection of these two long masonry colonnaded buildings.

Fig. 10. St. Mary's Church, Chekku Street. Built to replace a Portuguese church destroyed in 1655-56, it probably echoes the original in style. Inside there are frescoes and lofty wooden columns.

All the streets discussed in this last section are historically and aesthetically important, and should be seriously considered for protection as conservation areas. Their architectural quality is one that offers many lessons for our time. The spatial organization of this street architecture is very different from that of the big houses or mansions, standing in large gradens, elsewhere in Colombo. It differs too from the shanties and old tenements, which house most of Colombo's population, the modern and not-so modern blocks of flats, and the typical middle-class residential pattern of small houses nestling along the more secluded side roads among profuse vegetation. Most of the houses we have been discussing are placed closely together or form long terraces, abutting directly on to the street, with small courtyards or light wells behind. They form a truly urban architecture, achieving a high density as well as a sense of community or neighbourliness. They possess a dignity which seems to emerge form what is an economic, national and aesthetic use of space.

Therefore, having established the reality of this architectural and human quality that still survives in old Colombo, what is the present situation? Despite the announcement in 1979 that legislation would shortly be introduced to preserve historic buildings of more recent periods, much of beauty and value has disappeared, so much so that we hesitate to draw attention to what survives lest developers hasten to bulldoze it. Negative though it is, one present factor on the side of conservation is financial constraint. For

Fig. 12. Lawyer's offices in Hulftsdorp Street.

example, in March 1979 the President was reported as announcing 'The whole of Fort would be redone. Old buildings were being pulled down and would be replaced by new structures'.19 In June, the same year, the Prime Minister's amendment to the Housing and Town Improvement Ordinance was passed, providing for the construction of high-rise buildings in the city development area. These were but confirmations of processes already under way. Two years later, however, the Prime Minister announced a moratorium on planning permission for high-rise buildings in the city because of the inadequacy of supporting infrastructure. Lack of funds is also a factor; in several instances of sites already cleared, planning permission has been withheld although there are still a number of high-rise buildings in prospect which are not affected by the moratorium.

But such accidents and chances, quickly reversible as they are, are no substitute for a rational policy of conservation based on accepted methods of qualitative assessment and evaluation. It is of this and of a recognition that the future of old Colombo is also a matter for public concern, that there is a desperate need if anything worthwhile is to be salvaged for another generation.

Acknowledgements

Fig. 11. A decaying building in Mihindy Mawatha, dating from the late nineteenth century.

1   The location of Sri Lanka's fifteenth century capital at Kotte (a few miles east of the port) may well have been influenced by its contiguity to the port settlement, while in turn Colombo's development as a port must have been greatly enhanced by its proximity to the country's capital.

2.   Mansion type houses of the landowner and official class of the eighteenth and nineteenth centuries.

3   In this article, older and more familiar designations of areas have been used, as well as modern ward divisions, but not in such a way as to cause confusion.

4   Section 38, 1-5.

5   Section 16-1.

6   An example of a scheduled or protected area is the fort at Galle, an extensive conglomeration of private houses. government and commercial establishments. Theoretically, no structural alterations to these buildings or charge to their facades can take place without the permission of the Archaeological Commissioner. The real effectiveness of this scheme is difficult to gauge as we do not know how far it has checked 'modernization'. Despite the vigilance and care of the Archaeological Department, and even legal action against offenders, there have been flagrant violations of these rules, by both private individuals and government departments. It is clear that legislation alone will not suffice to ensure the protection of these areas.

7.   A property on this site is referred to in a deed of 1786, and a transaction in 1805 conveyed the premises from Dutch to British ownership. The present building probably dates from the latter event.

8   The left face of the guard house has been spoilt by the recent addition of another building, which conceals some of the old windows and detracts generally from its proportions; but its removal, and the restoration of the building, would be quite straightforward.

9   This building was the original Fort railway station, and it was only during demolition that the architectural quality was revealed; many of its windows had been boarded up, and rooms had been crudely partitioned as the building had been put to different purposes. This kind of treatment has been meted out to many fine old buildings which came from a time when space and decoration were unstinted, and it results in an intrinsically sound and often fine building being condemned because of a superficially shabby appearance.

10   This was another military barracks of the 1870s.

11   Several examples are similar to those in Hospital Street in the Fort, with immense doors, bisected halfway up or having three or four divisions, crowned by a shuttered fanlight.

Fig. 14. An early nineteenth-century house in Messenger Street, with coloured lattices incorporating white **mal lalis**.

12   This dignified monument, with its four arched doorways and two rows of tall rectangular windows flanked by masonry pilasters, was probably originally an open colonnaded building.

13   Known as the Weeskamer, this building with eight lofty pillars rising through two storeys along its street verandah, appears on a map of 1732. It seems to have been renovated in 1780.

14   We are tempted to wonder whether much of what we see today is a late seventeenth or early eighteenth century rebuilding of what was devastated in the Dutch bombardment of 1656.

15   The poverty of our architectural knowledge is such that we cannot easily date these buildings, but perhaps, as we have suggested, they may recall styles prevalent when the Portuguese were here (as is often the case, we suspect, when we talk of 'Dutch' architecture).

16   This handsome building, which added quality to this junction where the road begins to climb the hill to Hulftsdorp, was originally the tuberculosis ward, built about the end of the last century.

17   Wooden fanlights carved in floral, creeper or leaf patterns.

Fig. 15. Another early nineteenth-century house in Messenger Street.

18   One very pretty and excellently maintained example has masonry columns and delicate, carved wooden screens enclosing its small verandah, which is charmingly painted in blue and white. Farther along, rising high above the street, stands another courtyard house in somewhat grander style, with a long, wooden pillared verandah, also in a good state of preservation.

19   Ceylon Daily News, 2 March 1979

Fig. 16. A mid eighteenth-century house in Vivekananda Hill.

PLANNING AND DESIGN OF HOUSING UNITS IN THE LARGER SCALE WITH PARTICULAR REFERENCE TO A WORKED EXAMPLE AN APPLICATION OF "PATTERN LANGUAGE"

Archt. Turner Wickramasinghe and (late) Upali Karunaratne

INTRODUCTION

This article was written in 1976 as a part of the research for the Keppetipola Housing Scheme. The ideas reflected are those of Christopher Alexander and others who were involved in the "Projecto Experimentale" in Lima, Peru. The author together with late Architect Upali Karunaratne developed these ideas to suit a Sri Lankan context in which an attempt is made to bridge the gap between USER and DESIGNER.

Housing in the context of environmental science can be defined as the placing of the individual family within an environment which is ideal for their well-being and to which they creatively respond.

The house is a part of the environmental structure which consists of employment and recreational centres, open space, services such as education, health, marketing and transport. These can be called "Support Structures" for the family living in the house.

The prevalence of these support structures to a greater or lesser degree has a bearing on the housing situation and on the quality of the house.

When the support structures are unfairly concentrated there will be congested housing and an imbalance within the environment is created. This is the situation in towns and cities where the housing problem is compound with a socio-economic problem.

When this occurs desperate attempts are made to speedily house the overspill of families in habitations which because of hasty design, do not fit their social context.

Steps are being taken to co-ordinate, Housing, Central Planning and public administration to initiate the distribution of employment and such support structures more evenly in order to arrest the migration of people to the over-serviced towns. It has been accepted that overall Physical Planning has to be geared to meet this end.

Emphasis is weighing more heavily on the demand for quality of design and planning of the houses, than on quantity alone.

Housing policy seems to be moving towards economic, standardized and flexible but quality design which enriches the life quality of the inhabitants.

This then is the background to the housing situation in this country from which all design proposals for designing Housing Units must begin.

The first discipline which the designer must cultivate is an attitude of humble respect for the aspirations and hopes of the people for whom the houses are designed. People require that houses be made into HOMES. All financial policies, technological brilliance, and business processes, which are used for the making of houses must in the end serve the somewhat primitive and eternal needs of man for a HOME.

A home is a warm, secure personal domain as opposed to a house which is merely an impersonal objective word.

Home is where people eat, sleep, bring up their families, relax, entertain and express their individuality.

In large scale housing projects up to now one of the major drawbacks to the fulfillment of the primary needs is that the designer never meets the ultimate occupant of the proposed housing units.

Housing schemes are sponsored by Housing Authorities and financed by various financial bodies. The designer all along meets officials who are really committed to only objective impersonal statistics and achievements of that sort but not to the really individual needs of the people who will ultimately occupy the designed house. This failing must be rectified and ultimate occupant of the house must be brought into the picture as early as possible in the design programme if any success could be had in the fulfillment of the essential aims for decent housing.

The official brief will categorise the user as low income, middle income, etc. It should be the aim of the designer to enlarge on his own knowledge and understanding of the categorised average. He must then bridge the gap between his concept of the average with the ultimate individual user.

He must, by association or observation, and if possible by living with them, acquire an understanding of the needs, and common background of the selected community of people. From the data so obtained it will be possible for the designer to make a physical model of a living unit which would suit the average behavioral pattern of the community.

At present the best of housing projects stop at this step. The ultimate breakthrough of totally individuallising the houses to suit a particular family is held in abeyance till the scheme is completed and when it is really too late, ie. attempt at Home Making is left out completely at the crucial stage.

The ultimate user will not identify himself with the cold dead shell he has been given without choice or consultation and he will have no real strength of even making it into his HOME.

This being the situation we shall describe two schemes, which have broken through the traditional dead end of mass houses design and have attempted to give people not just HOUSES but HOMES.

The first is a Housing Scheme in LIMA in PERU called "Projecto Experimantale" by Christopher Alexander and others. This project was sponsored as a competition by the United Nations in 1969 for housing Peruvian white-collar workers.

The design team lived among the community in Lima and studied at first hand every aspect of their way of life. They then presented their proposals in two parts :

In part one was presented their DESIGNS which comprised the following items:

The designed-house unit which they called "The Generic House". Constructional details for this house and a choice process which allowed the final house plans and site layout to be formed in detail by the idiosyncratic needs of the individual families who buy the houses and live in them.

In part II was presented their design principles or guidelines which they called "Patterns" which could be used by other Peruvian Designers over and over in future projects.

Essentially it was a methodological reasoning for house design. In this they evolved three basic processes which were:

The Design of Generic House
The Choice Process
The Combination Process

The generic House was the model based on the needs that all Peruvians with their common background collectively share.

The Choice Process was explained this way.

"The people who live in our houses will, because they are all Peruvians, share certain needs and all have similar backgrounds. At the same time each person and each family will be unique. The Choice Process tries to do justice to this fact".

The interaction in these two factors - that is the Generic House and the Choice Process was termed the Combination Process, which was analogous to -

"The way the leaves of a tree are formed". All the leaves are defined by the metamorphic rules, the individual leaves are formed by the interaction between these rules and the local conditions which the leaves are subject to. As a result each leaf turns out unique, according to its position in the whole tree. Yet, in a Generic sense, the leaves on the tree are all the same.

And so in the Combination process

"All houses are formed by the same sequence of rules based on the form of the Generic House. But each house has to meet certain particular conditions - those imposed on it by the families' choices and those imposed on it by its position in the site".

Their step by step approach to the design of the individual homes could be summarised as follows:

1. The generic House is designed.

2. A tentative site layout is drawn up based on their studies of the patterns of life in the Peruvian community.

3. The site plan is made available to the prospective habitants.

4. The choices open to cater to their individual needs are   clearly illustrated and made available.

5. A few Generic Houses are built for inspection so that the people will understand the Choice Process more fully and the limitations as well.

6. A dialogue between designers and habitants clarifies the situation further and is of mutual help.

7. When the buyers have made their choice of both house type and site position the site layout is finalised and the building process can begin.

Thus the sponsor, designer, builder and the family who will occupy the house, all participate in the Home building process.

This is the aim that the architects at S.E.C. envisage in a proposed Middle-Income Economy Housing

Scheme at Keppetipola Mawatha in Colombo. This is the second worked example which we shall now describe.

This project is sponsored by the Ministry of Housing and Construction.

The amenities or support structures in the area in Central Colombo is high. The existing density in the 30 acre site is as low as 6 persons. This necessitated multi-storey housing where the highest floor does not exceed 45 feet, in the absence of lifts. The designers drew up a concept for the site in which the idea was to graft into the existing environment the new dwellings; while maintaining those environmental features which at present end such an ideal residential quality. The ubiquitous pattern of roads, lanes and open spaces and trees which are the traditional elements of the middle income housing scheme anywhere in Sri Lanka, were retained. In the words of the designers, the proposals for Keppetipola Mawatha were as follows:

"The principal objective of this study is to create a life support system based on the behavioral tendencies of the people. Thereafter the system, was the basis in the evolution of a layout to suit this particular site. In the designs these tendencies re-expressed in terms of **spaces. 21 parameters** that spatially describe a traditional house was used in the preparation of both the basic-unit and the layout. Further parameters could be investigated in an extended study to include schools, recreation, shopping etc. But this study was limited to housing. It was found that current thinking on housing pay particular emphasis to the identity of the individual within this environment. Therefore the individual house-owner is also allowed to express his own individuality in the choice processes available within the system; both in terms of internal layout and in elevational treatment of each basic unit. Particular emphasis was also placed on the anthropocentric needs of the individual when designing the basic unit. The spaces obtained are able to accommodate his basic items of familiar furniture, ego the public area or verandah is able to take an arm-chair, a few chairs and a tea- table. The private-area or "sala" is able to accommodate a setee-set and a glass-fronted crockery cabinet. These are the common possessions amongst all classes of society within this country.

In the worked example a minimum of either 715 or 995 sq. ft. was necessary to house the needs of the family; thereby creating conditions that could be considered as optimum within the urban environment. The design elements or parameters were thus:

1st PARAMETER OR BEHAVIORAL PATTERN	**The clear distinction of a ''Ge'' or dwelling**
Relationship	Traditionally.each dwelling is normally set within an individual compound. A path from a road leads to it.
Worked Physical Model	In the Keppetipola Mawatha Housing scheme, each basic unit is entered from the access balcony or "street" from which an opening leads to a small open private terrace.
2nd PARAMETER OR BEHAVIORAL PATTERN	**The "extrovert" character of dwellings**
Relationship	Even in rural areas the social status of each community unit is modestly maintained by showing a few items "of contemporary" furniture.
Worked Physical Model	The public area of each basic unit is visual to a degree from the "street" while maintaining maximum security.
3rd PARAMETER OR BEHAVIORAL PATTERN	**The distinction between ''public'' and ''private''**
Relationship	Traditionally all dwellings contain a verandah, which serves as a space; for "outsider". An attached front room some time, serves the head of each unit.
Worked Physical Model	Public space is provided in each basic unit that acts as a verandah:
4th PARAMETER OR BEHAVIORAL PATTERN	**A private-space, (usually apart, from the public spaces).**
Relationship	Traditionally all dwellings contain a space, leading from the verandah. It is known as a "Sala" or "Medha-kamaraya", normally the sitting-area of females.
Worked Physical Model	Each basic unit contains a space leading from the public space or verandah. This is to be used as a private space or "sala".

5th PARAMETER OR BEHAVIORAL PATIERN	**A rear-space to be used as a work-area**
Relationship	Traditionally most "tiled" houses contain a back verandah (toilets and kitchens, normally open, or lead-off from this space).
Worked Physical Model	A space is provided that leads from the private space or "sala" that could be in essence a back-verandah. The toilets and kitchen; open to this space.
6th PARAMETER OR BEHAVIORAL PATIERN	**Kitchens and toilets visually apart**
Relationship	Traditionally the kitchen is kept away from the house. The toilet is normally a separate building.
Worked Physical Model	The kitchen and the toilet are kept at the rear of each basic unit. Therefore visually apart from the private space.
7th PARAMETER OR BEHAVIORAL PATTERN	**Separate sleeping cells based on the strict definitions of sex**
Relationship	Traditionally the rooms are attached to the opposite sides of the "sala" or "Medakamaraya". The rooms are kept strictly private and visually away from the street. In road- side houses where site conditions are tight, a single flight of timber stairs, ascends to an upper level known as a "Attuwa", This space used for the dual purpose of storage and sleeping.
Worked Physical Model	The separation of the "street" from the quiet sleeping areas, by changes of levels, is a concept, in recent housing schemes; and the street is at the lower level. It also adds a sense of space to a minimum sq. ft. area of each basic unit.
8th PARAMETER OR BEHAVIORAL PATIERN	**On an average, it is to find that each commensal unit, consists of husband, wife and 3 children. Often to this number is added, a close relative. The sleeping positions are separated, in space, between males and females; employer/employee.**

Relationship	Traditionally the basic-hut consists of a verandah and a room, or a male sleeping-area. In the growth of a traditional "ge" these two sectors increase both qualitatively and quantitatively. Public areas such as verandahs and sitting-rooms similarly expand.
Worked Physical Model	The upper level of the basic unit is divided into a number of sleeping places. Using a "choice process", planning, variations, and expansion is possible. An emphasis is placed on public/private - male/female.
9th PARAMETER OR BEHAVIORAL PATIERN	**The visual separation of front and rear**
Relationship	Traditionally a back-yard serves as a service area to the kitchen section; normally not visual from the road.
Worked Physical Model	The blocks should be orientated with a service area with a service route; and a defmed frontage with a suitable approach. In this manner, an identity is obtained in the block.
10th PARAMETER OR BEHAVIORAL PATTERN	**Refuse disposal**
Relationship	Nil
Worked Physical Model	The movement of garbage; should be minimized by planning a refuse duct from each kitchen-area.
11th PARAMETER OR BEHAVIORAL PATTERN	**Garages and Parking space**
Relationship	Cars are not left in the open.
Worked Physical Model	Lockable garages should be provided on rent, as an amenity and a parking space, in front of each block, to be within vision of each, basic unit.
12th PARAMETER OR BEHAVIORAL PATTERN	**To create a close-knit society**
Relationship	Traditionally a collection of houses spaced, within short distances, constitutes a village. The houses are normally, hidden by thick foliage.
Worked Physical Model	The blocks are placed'; preserving existing foliage. Each block to have its own identity; but positioned; in relation to similar blocks and with reference to the nature of the particular site.

13th PARAMETER OR BEHAVIORAL PATTERN

Relationship

Worked Physical Model

Creating a natural overlap; in city design

Traditionally all towns and villages, contain a natural overlap. New roads are normally a development from existing footpaths.

The existing road layout is maintained with new inroads to the various blocks. They in essence form individual lanes to the various blocks, thereby creating an identity as found in the existing lanes in Colombo.

14th PARAMETER OR BEHAVIORAL PATTERN

Relationship

Worked physical Model

To maintain an architectural overlap

Traditionally a town or village contains dwellings of different periods. Often modernisation takes place to an existing "ge".

Existing buildings of aesthetic value are modernised. These buildings could form the infrastructure viz. hostels, clubs, restaurants, schools, health centres, etc.

15th PARAMETER OR BEHAVIORAL PATTERN

Relationship

Worked Physical Model

Construction element - the lack of glass

Traditionally a room is ventilated with a door and a window placed on opposite sides. The window usually has security bars; and, brightly painted shutters for the rainy days. The light within is subdued and free of glare.

Window openings are kept within economicdimensions brightly painted shutters of timber or processed laminates, are substituted in lieu of glass.

16th PARAMETER OR BEHAVIORAL PATTERN

Relationship

Worked Physical Model

Construction elements - floor finishes

Traditionally the floor-scape of the verandah and sala is treated, different, from the other areas.

Coloured cement or terra-cotta tiles are laid in small sections of each basic unit.

17th PARAMETER OR BEHAVIORAL PATTERN

Construction element - wall finishes

Walls are traditionally plastered white or Samara.

Relationship

All internal surfaces are plastered, and lime or Samara washed. If "Bangadeniya" Class 1 blocks are used on the external walls, the inside surfaces of certain areas, may be left unplastered, thereby contrasting with the plastered planes; and economizing on plastering.

Worked Physical Model

Construction element - Reduction in maintenance of "wet" areas.

18th PARAMETER OR BEHAVIORAL PATTERN

Various housing schemes.

Relationship

Kitchen to have a workable precast work-slab. Public areas, subject to a higher degree of wear and tear, to have dados and skirtings, of terra-cotta, clay tiles or cement toilet walls to be water-proofed to a height 4'.0".

Worked Physical Model

Construction element Reduction in the cost of erection and maintenance of balustrading

19TH PARAMETER OR BEHAVIORAL PATTERN

Various housing schemes.

Relationship

Back parapets are used in lieu of steel balustrading.

Worked Physical Model

Construction element - internal staircases

20th PARAMETER OR BEHAVIORAL PATTERN

Traditionally as simple two level house; uses a single-flight staircase to a "Attuwa" usually of timber.

Relationship

A 3'.0" wide single-flight stairs could be constructed with planks and block dwarf walls. A parapet is used as a balustrade.

Worked Physical Model

Construction element - Econoiny of structure

21st PARAMETER OR BEHAVIORAL PATTERN

Various housing researches.

Relationship

A system of load-bearing cross-walls and precast concrete floor slabs.

Worked Physical Model

The above are then the 21 parameters used for the design of Homes at Keppetipola Mawatha. These could equally apply to any other Housing Scheme undertaken in this country.

In conclusion we could only mention that this design method follows a known scientific theory and is linked with the planning traditions of this ancient land.