

# IMPACT OF THE CONCEPT OF TRADITIONAL SPACES ON MODERN URBAN DOMESTIC ARCHITECTURE IN SRI LANKA

LIBRARY  
UNIVERSITY OF MORATUWA, SRI LANKA  
MORATUWA

A dissertation submitted to the department of Architecture,  
University of Moratuwa as a Partial Fulfillment of the Requirements  
for the Degree of Master of Science in Architecture  
and for the  
Royal Institute of British Architects for the RIBA part II



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

72 "05"  
72(043)

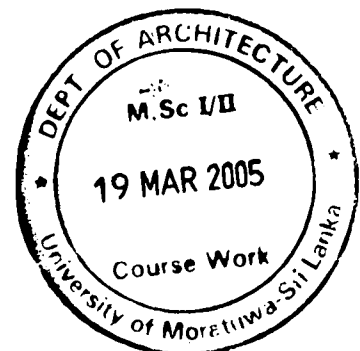
Subhashini Lakdusinghe  
Department of Architecture  
University of Moratuwa  
March 2005

85467



University of Moratuwa

85467



85467

## Declaration

I declare that this dissertation represent my own work, except where due acknowledgement is made and that it has not been previously included in a thesis, dissertation or report submitted to this university to any other institution for degree diploma or other qualification.

## *UOM Verified Signature*



University of Moratuwa (S.Lakdusinghe )  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

.....  
Archt. Arosh Gamage,  
Principal advisor,  
Department of Architecture  
University of Moratuwa.

# CONTENTS

	<b>Page</b>
Declaration	i
List of illustration	ii
Acknowledgement	iv
Abstract	v
Introduction	vi
Observation / issues identified.	
Identification of the study	
Scope and limitation	
Method of study	
<b>Chapter One</b>	<b>1</b>
1:0 Historic development of domestic architecture	1
1:1 shelters for nomadic man	1
1:2 changing of life style and concept of spaces in Sri Lankan domestic Architecture.	5
1:2:1 Climatic responses	9
1:2:1:1 North central province house type	9
1:2:1:2 Kurynagala house type	10
1:2:1:3 Mullaithive house type	11
1:2:1:4 jaffna houde type	11
1: 3 Concepts of traditional spaces	<b>12</b>
1:3:1 Verandah	<b>13</b>
1:3:2 Pila	13
1:3:3 Court yard	
1:3:4 Atuwa (granary)	14

## Chapter two

2:0 An Examination of the concept of space in modern urban dwelling house:	15
2:1 Case study one: Cinnamon hill House	15
2.1.0 Location	
2.1.1 Plan from	
2.1.2 Spatial articulation	
2.1.3 Special characters.	
Courtyard	
Varamndhah	
Pila	
2.2 Case study two: Rathnavibushana house	18
2.2.0 Location	
2.2.1 Plan from	
2.2.2 Spatial articulation	
2.2.3 Special characters.	
Courtyard	
Varamndhah	
Pila	
2.3 Case study: Kolin silva house	23
2.3.0 Location	
2.3.1 Plan from	
2.3.2 Spatial articulation	
2.:3 Special characters.	
Courtyard	
Verandah	
Pila	



## 2.4 Sarindha Unambuwa house

30

### 2.4.0 Location

### 2.4.1 Plan form

### 2.4.2 Spatial articulation

### 2.4.3 Special characters.

Courtyard

Verandah

## Chapter Three

### 3.0 Identification of the impacts of the concept of traditional domestic architecture on modern urban dwelling house.

36

#### 3:1 Space articulation

#### 3:2 Climatic responses.

#### 3:3 Materials

#### 3:4 Special features



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

Conclution.

Bibliography

## List of Illustrate

- Fig 1: Shelter of the nomadic man
- Fig 2: The Igloo House of Eskimos
- Fig 3: a' tupiq' or summer tents of Eskimos
- Fig 4: Bushman Kuwas in Kalahari Desert
- Fig 5: Section of Bushman Kuwas in Kalahari Desert
- Fig 6: Typical Plan of a Maasi House
- Fig 7: Typical Plan of Waitubu House
- Fig 8: Tswana Huts in Africa
- Fig 9: Typical Plan of Traditional Irish Farm House
- Fig 10: Perspective of Irish Farm House
- Fig 11: Traditional Village Layout
- Fig 12: Typical Plan of Peasant house
- Fig 13: Section of Pila Traditional House
- Fig 14: Plan of Dutch House
- Fig 15: Plan of British Period House
- Fig 16: Traditional House – North Central Province
- Fig 17: Plan of Traditional House in KURunagala
- Fig 18: Plan of Traditional House in Mullativu
- Fig 19: Elevation
- Fig 20: Traditional House Plan of Jaffna
- Fig 21: Layout Plan
- Fig 22: Verandah Overlooking the Lake
- Fig 23: View of the Bathroom
- Fig 24: Open Verandah with built in Seat
- Fig 25: Layout Plan
- Fig 26: Upper floor plan
- Fig 27: View of the Reflecting Pool
- Fig 28: Open to sky Courtyard
- Fig 29: Roof Terrace
- Fig 30: Built-in Seat

Fig 31: Front View of the House

Fig 32: Central Courtyard

Fig 33: Open Verandah running towards the dining area

Fig 34: View of the Courtyard from the upper floor

Fig 35: Verandah around the Courtyard

Fig 36: Entrance Podium on the pond

Fig 37: Pool at the Entrance

Fig 37: Stair Case leads to upper floor

Fig 38: Central Courtyard

Fig 39: Rear Verandah facing to the Garden

Fig 40: Verandah at early Sinhalese House

Fig 41: Verandah at early Sinhalese House

Fig 42: Evolution of the Courtyard

Fig 43: Aruwa at the early house

Fig 44: Entrance to the House

Fig 45: Central Courtyard

Fig 46: Entrance Podium

Fig 47: Entrance Pool

Fig 48: Built in Seat at the Courtyard

Fig 49: Central pool

Fig 50: Central Courtyard and Pound

Fig 51: Timber Use for the floor

Fig 52: Granite floor

Fig 53: Open sky Bathroom

Fig 54: Podium on stone stumps

Fig 55: Built-in seat

Fig 56: Grinding stone at courtyard

Fig 57: Open verandah facing rear Garden



## ACKNOWLEDGEMENT

Many people were instrumental in producing this dissertation.

I am especially grateful and First and foremost my respect goes to, Archt. . Vidura Sri Nammuni , the Head of the Department. , University of Morotuwa,

And my heartiest gratitude is to, my Principal supervisor Archt. Arosh Gamage, Department of Architecture, University of Morotuwa, and, for her obligatory effort and pain taken to enlighten me on this subject and her guidance, motivation, valuable thoughts and tolerance with my shortcomings. And assistance supervisor prof. s. Manawadu, Year Masters, Archt. Jayanath Silva , Archt. Gamini Weerasinghe , Dr. Upendra Rajapakshe , Department of Architecture, University of Moratuwa, for devoting their most precious time and valuable thoughts. It was a great source of inspiration.

I am extremely grateful to thank to; Archt. Bernard Gomez, Archt. Vinod Jayasinghe,

I like to endorse here with complement the co-operation extended to me by the library staff and reading room staff. Also to the residents of the selected houses for their kind contribution in various ways while doing my case studies. I am very much thankful to sudesh , dilupa, Miuraj and Dinesh for their encouragement , type setting and helping me with photographs when preparing the document.

My sincere thanks should go to Mangala, Shabika, Bindu, Kumi, , Lakshi , Babee, Uk and who have extended their fullest support in enormous ways to make this dissertation a success and all my friends who wish to remain anonymous.

Finally my sincere thanks should go to my dear brother suneth who helped me in numerous ways and my special respect to my ever loving father, mother, sister, and sanjaya for their loving and affectionate good wishes.





## **Abstract**

In this study an attempt is made to examine the impact of concepts of tradition spaces in modern urban domestic architecture in Sri Lanka. The first part of the first chapter will be developed to survey very briefly the development of domestic architecture which one of the primary needs of the mankind.

The second part of the same chapter tries to analyze the life styles and the concept of space in Sri Lankan architecture. Most important space areas such as verandah, pila court yard will be studied.

The second chapter is devoted to gather the results of case studies. Each case study will be summarized in an inform pattern, which includes sub divisions on aspects such as location, plan-form, special articulation and special characters.

The third chapter will analyze the impact of the concept or traditional domestic architecture on modern urban houses. This impact is to be seen prominently in space articulation, climate controlling and selection of appropriate materials. Each aspect will be separately dealt with.

The study will be concluded with a summing up after the third chapter.

## **I Observation and issues**

One of the primary needs of human being is the shelter. Shelter has been developed by man for over several thousand years and modern time every body prefers to live in a comfortable and suitable residence. Hence architects have a responsibility to give best residences for the society. This create a challenge for architects, because what is to be regarded as the best is a matter of domestic architecture for members of the urban society creates more problems than that in the rural area. Urban areas are more congested and environmentally polluted and many other such factors have to be considered evolving a suitable model for urban living.

Various architects could propose different types of models. But observing all these models and selecting best and appropriate features in them perhaps next line of architect may create a much better model in future. Hence there is, obviously a necessity for research in this field is a very humble attempt to proceed or begin in that task.

## **II Identification of the study**

This study intends to examine modern urban houses, which have use traditional architecture. It will try to understand the impact of traditional concepts of space in modern and the way that the contemporary architects modify and adopt those concepts to create an appropriate housing style for the urban society.

Spaces in a house cannot be taken along to understand any feature of the total creation. Hence spaces have to be taken together with other elements, which have close relationships with it. Because of this reason the present study will go into examine space articulation, climate control, raw materials in relation to the spaces in modern domestic architecture.

## **III Scope and limitation**

There are so many aspects, which have to be examine to reduce traditional architecture. Some of these are the plan form, spatial characteristic, and materials used to make appropriate spaces in and around the building. The climate condition was one of the key factors, which affects the making of house suitable for living another factor was the life style of the people who

used the house. Another factor is the weather. The other thing connected with this issue is the special object used to create a appropriate condition in a space. There is another aspect to look in to in this study that is the requirement of urban life. The life style changed in course of long time. Hence a traditional house as a whole will not be suitable for used in the present urban setup. There for the study has to be focus to examine the features which can be adopted in evolving a house suitable for modern urban life.

#### **IV Method of study**

To get proper insight on situation it will be used fully understand the historical development of the traditional architecture. This will unable a proper analysis and understanding of the problem in the present context. However to study origin of type of shelters of the man kind during very early times. The sources are limited much data to be gathered from the literary sources. A general survey of traditional architecture is of great importance. The present situation will be examined through field visits and through literary survey.

Several case studies on modern urban houses will be under taken. The selection of houses for these case studies should be done carefully. One important aspect of this selection would be to identify correct architects who well known for practically involving in developing houses with impact of traditional architecture. After the decision on the appropriate architects are made of these architect will be identified. Each house will be with prior arrangement and house will be studied carefully and the result will be carefully analyzed. It is hope that this study will add something more to the existing Knowledge regarding modern urban architecture.

## CHAPTER ONE

### 1.1 Historic development of domestic architecture

It is well known that from the dawn of civilization people have been involved in modification of the environments in such a way to facilitate their day to day activities and to seek protection from bad weather and wild animals. Architecture began as a mean to provide a rudimentary shelter. The first buildings were dwellings in which people found shelter. These early shelters however had very limited purposes; such as protecting, inhabiting and possessions from natural and supernatural powers.

There is a set of basic needs, which must be satisfied for the survival of human beings. The shelter is one of these basic needs. The shelter affects them physically as well as psychologically. The rudimentary purpose of shelter is thus to make a "enclosed space" which is well defined as a protected entity, and a suitable place to live. This space, defined for living, has indeed numerous functions ranging from purely physical needs to deep routed spiritual ones.



Fig 1: Shelter of the nomadic man

The architectural purpose is to create this space so as to enable the inhabitants to act freely. Therefore these spatial enclosures have wider and deeper relationship between the space and the dweller.

#### 1.1.1 Shelter of the nomadic man

Since the time of Paleolithic era man has started to build different types of structures for his dwelling. The factors such as weather, climate, environment, usable materials, difference of attitudes of the dwellers, affected the locating and formulating



of dwelling places. For instance early settlements of ancient people any where in the world have been started in places where water was readily available.

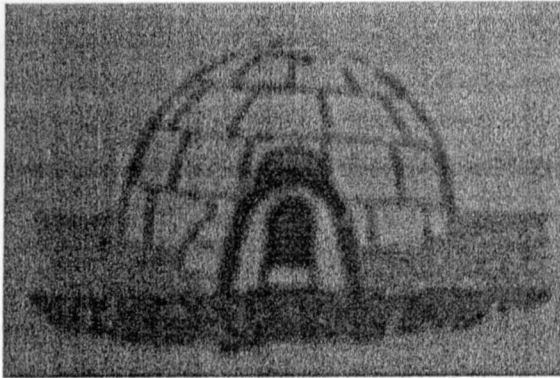


Fig 2: The Igloo House of Eskimos

The "igloo" house constructed by the Eskimos was a main type of nomad houses. It was a complete vaulted dome and the opening was cut close to the floor level. There were storage chamber, which was generally used to store fishes and cooking utensils. The space, of which the size was equal to the width of the dome, was built up to a

height of about two or three feet. This was usually located at the shallowest end and was used for receiving visitors.

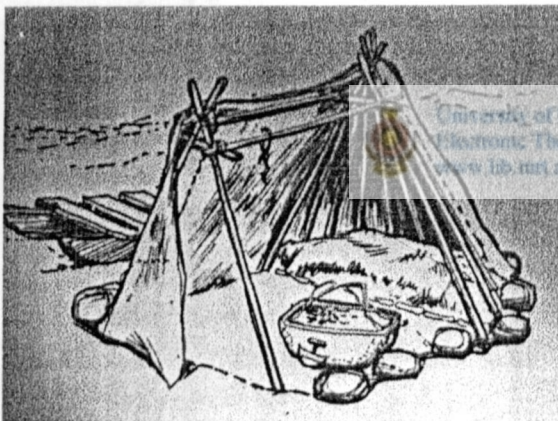


Fig 3: a' tupiq' or summer tents of Eskimos

During the summer season Eskimos constructed a' tupiq' or summer tents.

In the thin grass lands of Kalahari Desert in Africa, the natives built short-storied huts, known as 'kuwas'. They were very simple structures which would be built in very short time, perhaps in one hour. Tree branches, wands and grasses were used to construct these "kuwas." Basically the plan of a kuwas is circular and another space allocated in it for all purposes which was also circular. The front circular space is wider and the other was narrower. These two circular parts made up the whole structure. The hearth was in the center of the hut and the area for cooking, eating and tools making was in front of it. The inner space of the rear part was the sleeping area for women and children. Beyond the central area was a social space for trance

inducing and healing dancing, which was an important feature in the Bushmen social life



Fig 4: Bushman Kuwas in Kalahari Desert

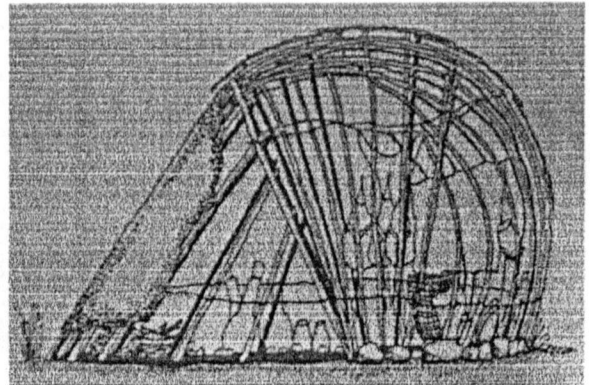


Fig 5: Section of Bushman Kuwas in Kalahari Desert

When the formulation of rural settlement began after the period of the nomadic culture, the houses were built with mud and frames.



Fig 6: Typical Plan of a Maasi House

This new type of house was built in the Loita hills in Kenya. It was called "Maasai" house. It was built with flexible leleshwa sticks. The roof was formed by curving these leleshwa sticks in to a rectangular shape. The hut was internally divided into sleeping areas which was always about one feet high and the hearth was in the centre.

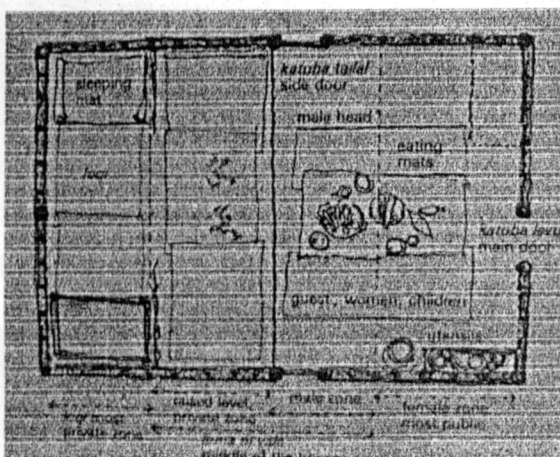


Fig 7: Typical Plan of Waitabu House

Waitabu is a village on the tiny island of Melanesia. The traditional house in this village was a hut with a thatched roof. The Interior of the hut was divided into four zones. Near the main door at the shallowest end was the area which was used by females for cooking. This space with side doors was the area for males. It was also used for eating on

mats. Beyond that was the totally private area where family members slept and the house hold goods were kept.



Fig 8: Tswana Huts in Africa

Tswana huts in Africa were made of mud, often of wet bricks and sometimes reinforced by poles. They were usually made by women. Tswana hut was circular in plan and sometimes two or more huts were built into a cluster depending on the number of members in the family. In such occasions the main hut may be occupied by parents. The older children or unmarried

daughters slept in a separate hut, which was built nearby. The kitchen was located in the yard. The huts and other units were enclosed by a mud wall.

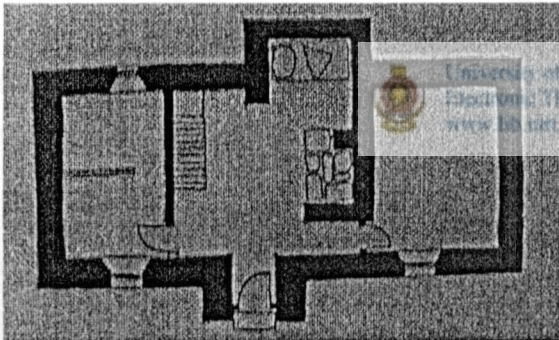


Fig 9: Typical Plan of Traditional Irish Farm House

The traditional Irish farm house had a well planned spatial arrangement. It was rectangular in plan, and had a thatched roof. It had two rooms for sleeping and a kitchen and a hearth which were in the center.

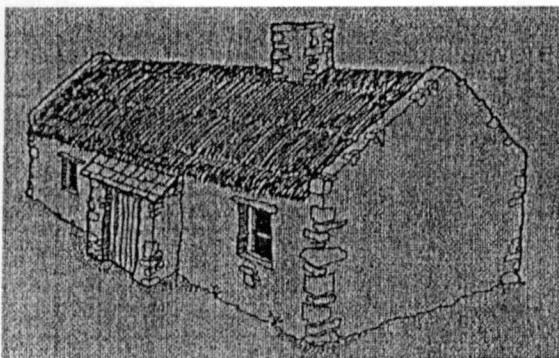


Fig 10: Perspective of Irish Farm House

The above examples of the dwelling of mankind in nomadic period represent the complex interaction of dwellers and space in the shelter different ancient cultures. Furthermore these examples show that these dwelling types was influenced by resources weather, climate and environment as well as and the skills and technologies, employed for building them.

## 1.2 Changing lifestyle and concept of space in Sri Lankan domestic Architecture.

The available archaeological data is insufficient to reconstruct the form or the plan of ancient dwellings. Prof. Senaka Bandaranayke states that "very little archeological or historical data has yet been recorded which throws light on the history of the traditional rural house types. It is possible however to visualize that these houses are an organic product of the social and physical environment of Sri Lanka". The references to them in the literature provide a scanty idea of ancient Sri Lankan houses. From a reference in the *Saddharma Rathanavaliya*, it is revealed that the ordinary people in the country had to manage all their business with just a hut of one or two rooms.

However we have a clearer picture of houses in the Kandian period. Information on them is supplied by the writings of early Europeans who wrote on Sri Lankan affairs. One of such writers was Robert Knox. According to him, people in the early Sri Lankan society; who lived in paddy cultivation, had a simple life style. Their day to day needs were simple and limited to the basic requirements like cooking, bringing up their children and sexual life. Their houses were also more extraverted than introverted. They were interdependent in their cultivations as well as in all type of social functions.

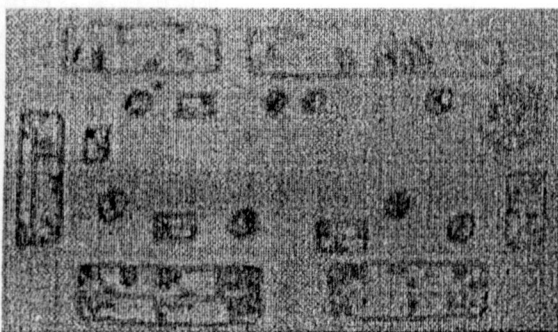


Fig 11: Traditional Village Layout

The house was the basic unit in a community. The village in which there were several houses was the entity of the social structure of a given community. The main element of the village was the centralized open space traditionally known as 'gammedda' which was commonly used by everybody. All the house units were arranged around it.

Each house in the village was a separate unit. All the houses were similar in plan form; pattern as well as in outer appearance. Each house was consisted with an



inner chamber having good security and privacy and also a front verandah. This verandah was a open space and oriented towards the commonly used open square called "gammadda". Verandah was in this way a transitional space between the inner chamber and the village square.

The Inner chamber at the deep end functioned as the sleeping area for women and children. It was the private core of the house. Men slept in the verandah which was located at the shallowest end. This arrangement provided a protection for women and children in the house. A storage traditionally known as 'Atuwa', for storing grains was located in front of each house in the village. In an early village set up, this grain storage was an integral, but a separate unit.

It was the common feature that all occupants in one village belonged to one and the same caste. All families in a village were interrelated. In course of time, the life of the Sri Lankans changed due to various factors such as, the climatic condition, social attitude, and administrative structure. The concept of inter dependency and living in one group changed in to individual living pattern. Peasant house was the best example for the generic type of the houses which came in to vogue after cluster houses. This house was totally enclosed and introverted than early house.

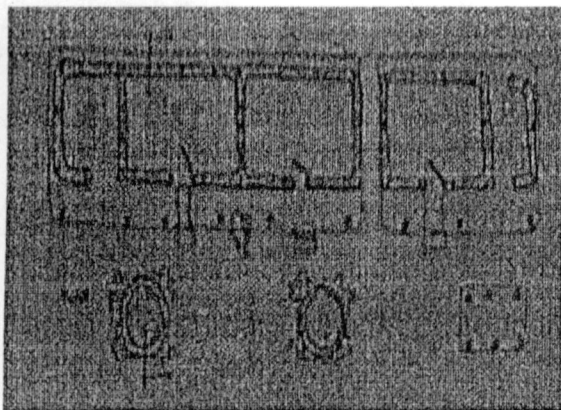


Fig 12: Typical Plan of Peasant house

In this new form of house there were a few rooms which were located in the interior space. The verandah which was opened to the outside of the early cluster houses was no more. The verandah is now located right round a courtyard in the center to obtain lighting and ventilation. This internal verandah connected to the courtyard was used as the common or social space for the

family members. The bedrooms in the deep spaces also were connected directly to the court yard with doors open towards it. The Atuwa or granary was located inside the house in the deep end.

When the house became larger or when it was belonged to a more important person the number of rooms facing the verandah of the courtyard would be increased. Some times a house may be enlarged by additional courtyards, with their own set of rooms. Such a large house would be occupied by an extended family consisting of parents and their married sons and daughters, and sometimes closed family relations such as brothers of the house- holder.

Commenting on the style of the house of the Kandyan villagers of the 18<sup>th</sup>- 19<sup>th</sup> centuries, Ananda K Coomarasumamy says thus; 'the house being made up a wide inner verandah around three sides of a courtyard that is part of natural ground. The platform of the inner verandah extends beyond the walls of the house to form a narrow bench right around the house, used for sitting or working known as the "pila" <sup>1</sup>

Two sides of the house were opened towards the courtyard forming a verandah and used as the living space. There were two small rooms entered through a narrow corridor at the edge of the courtyard. These rooms had no windows, but the ventilation and light supplied through the courtyard. The kitchen, located within the house was semi- enclosed. The granary, timber box raised on four stone stumps was placed in a corner of the verandah.

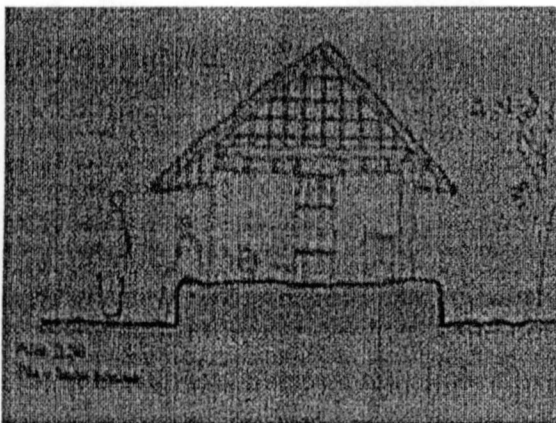


Fig 13: Section of Pila Traditional House

The visitors were entertained on the pila. Those visitors, who were of the same status of the owners of the house, were invited into the courtyard area, but were rarely facilitated to sleep there. If they might stay the night, they will be accommodated in one of the front rooms.

The styles of houses in Sri Lanka were considerably changed during Dutch colonial rule. The houses used by chief officials of the government and the regional

<sup>1</sup> Cummaraswamy, A.K, Mediaeval Sinhalese Art, 1958 pp177.

headmen were the only houses of large proportion and much complexity. But Dutch did not influence in creating a new architecture, changing all the qualities that were prevailing traditional Sri Lankans house style.

Open verandah with the large masonry columns at the shallowest end of the house is one of the prominent features of the Dutch period house. The living area was the place where visitors of high rank were entertained. The courtyard was located beyond the main living room and the other rooms such as storage, kitchen and servant rooms were lined up on either side of a long courtyard. In this period, the storage for grain occupied a room inside the house. There was a service access from the rear end of the house which was connected with the grains store room. One of the best examples for this type of buildings is presently used as Dutch Period Museum in Pettah, Colombo.

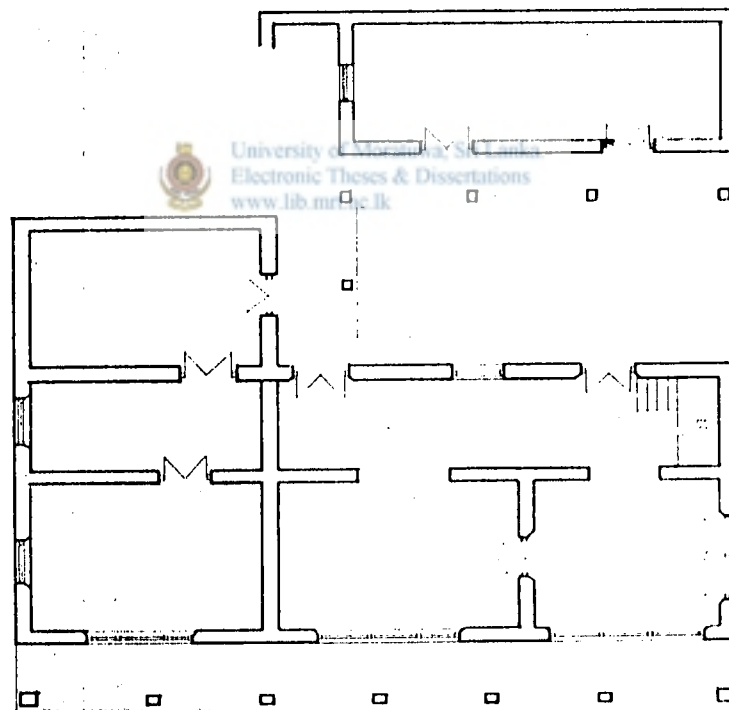


Fig 14: Plan of Dutch House

In the British period; "they did not use the courtyard houses and preferred to live in compact bungalows set with in large garden. A Bungalow consists of the central hall, which runs from the "portico" to rear verandah. The kitchen and the

savant quarters located separately outside of the main building. The British architecture was totally different from traditional architecture. They were alien to the Sri Lankan context and had a very dominant quality.

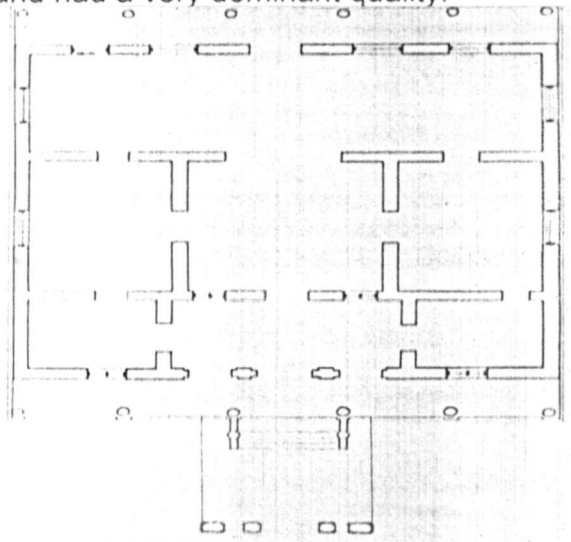


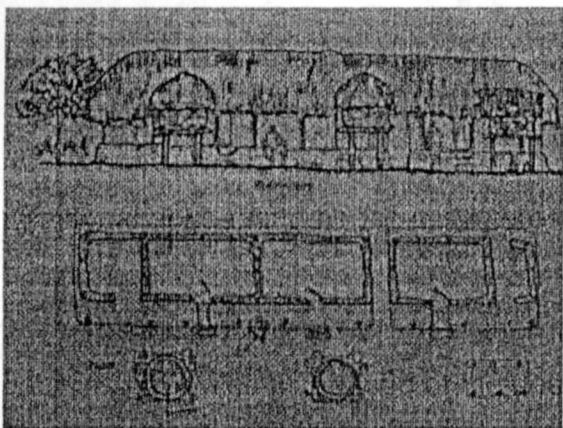
Fig 15: Plan of British Period House

### 1.2.1 Climatic response

Although Sri Lanka is a small island, it can be divided into several climatic regions in relation to the rainfall pattern. The Central, Western, South Western and Southern province of the country is the wet zone. It has a high rainfall caused by the South-West monsoons. The other part of the country is the dry zone with North-West monsoons. These variations have influenced the design and construction of the traditional house, and hence it is interesting to examine these variations.

In addition to the climate, the difference in cultural groups and occupational patterns have also influenced the design of the traditional house.

#### 1.2.1.1 North Central province house type



This was a linear house with high plinth. Basically there were two rooms for sleeping and an open kitchen was located in the side of the verandah and it was covered by a half wall. The verandah is the social space and it was also used as the area for males to

Fig 16: Traditional House – North Central Province

sleep. Pila was a place provided in the edge of the verandah and it was used to sit or sleep. It was raised about two feet from the ground and was plastered with cow dung and mud. This was the type of house built in the dry zone. The overhanging roof was supported on round timber posts and because of the low eave; the space under it was well protected from the glare and the hot sun. The roof was made into a two pitched gable and was thatched with straw covering.

The granary, known as "Varuva" by the people of the north central province, was circular in form. It had an external jungle timber structure to support the straw wall. There was a timber framed conical straw roof which could be removed when necessary.

### 1.2.1.2 Kurunegala house type

This house type had many similarities with the north central province house type.

"General plan had two long rooms along the front verandah which was about 1.5m wide with a half wall on the outer edge. The verandah of this type of house was extended to the front, either at the middle of the linear house or at a side with front gable and forming an entrance porch with a half wall around."

Nimal De Silva.

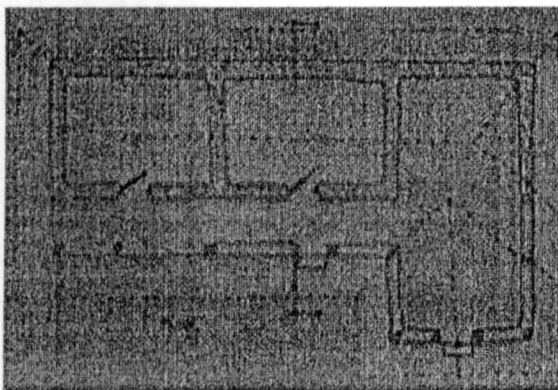


Fig 17: Plan of Traditional House in KURunagala

The roof of this house type was covered by cadjan as it was the freely available material in a district like Kurunegala which is famous for coconut growing. The granary was constructed in front of the house. It was basically a circular cane basket raised above ground and placed on a set of stone stumps to protect it from the ground dampness. The roof was a conical cap, thatched with straw.

### 1.2.1.3 Mulathive house type

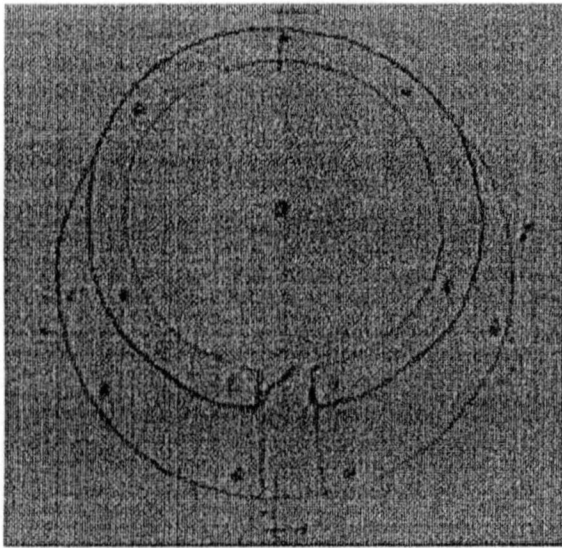


Fig 18: Plan of Traditional House in Mullativu

This house type was a composition of four basic buildings. They were separately located around an open garden area. The house was enclosed within three meters high fence made out of Palmyra leaves. The front part of the house was a half open rectangular hall known as 'mal'; the place where visitors were entertained. The kitchen was a separate building either circular or rectangular in plan. The kitchen was visually barriered by a fence.



Fig 19: Elevation

The granary known as 'komparai' was a circular basket structure raised on four pillars with a conical roof made out of Palmyra leaves.

### 1.2.1.4 Jaffna house type

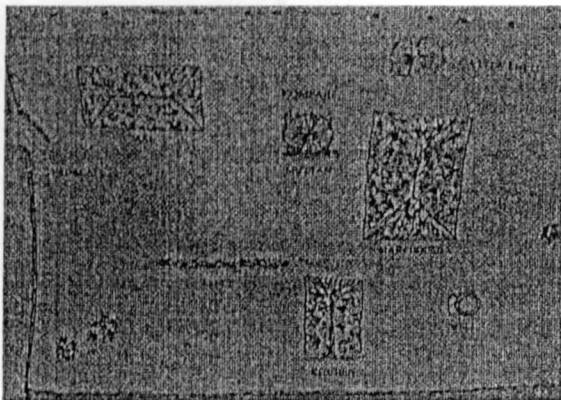


Fig 20: Traditional House Plan of Jaffna

The layout of the Jaffna house was also a made up with inter connected individual units. It was very much similar to the Mulathive house in the layout. Only difference was the main house which was rectangular in shape. The roof was thatched with Palmyra leaves which were much suitable for the dry climate in the Jaffna area.

### 1.3 Concepts of traditional spaces

The domestic architecture, it can be identified several spaces in a house which can be seen as compulsory features. The concept of domestic architecture was developed around those spaces. They are as follows.

Verandah

Pila

Courtyard

Atuwa(granary)

#### Verandah

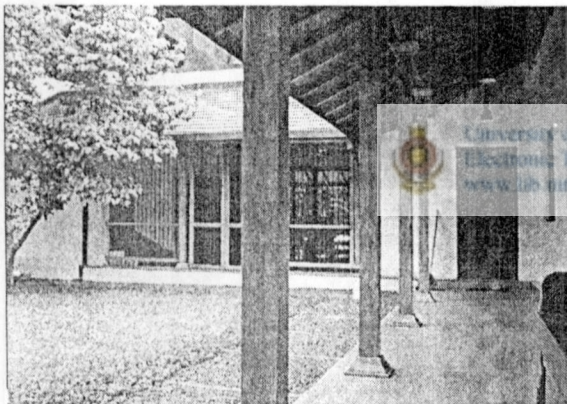


Fig 40: Verandah at early Sinhalese House

Verandah was the main space of the early Sinhalese house. It was a narrow space projected from the outside of an edge wall. Its roof was supported by a series of timber pillars; which were decorated with carvings. The floor of a verandah in the houses of common folks was made with cow dung mixed with clay. Instead the well to do people

preferred to lay clay tiles on the floor. The verandah was used as a sleeping area for men and it was also used as a social area entertaining the visitors. In early stage the verandah was an important feature of the houses of common folks as well as the elite.

It was the transitional space between the inner chamber and the outer space. This space was open and free, sometimes protected with half walls, especially in rainy areas, but well ventilated.

### Pila

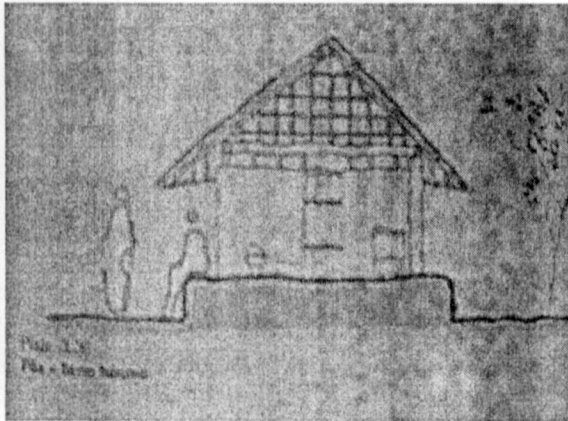


Fig 41: Verandah at early Sinhalese House

Pila was the space where a short wall of about one and half feet high above the ground level. Raised at the outer edge of the floor, it was about one or one and half feet wide providing space to sit. It was smoothly plastered with cow dug. Early there was no any furniture to sit. The pila was the only seating arrangement vogue at that time. A mats made of 'pan, especial type of grass was spread on the pila to sit upon.

### Courtyard

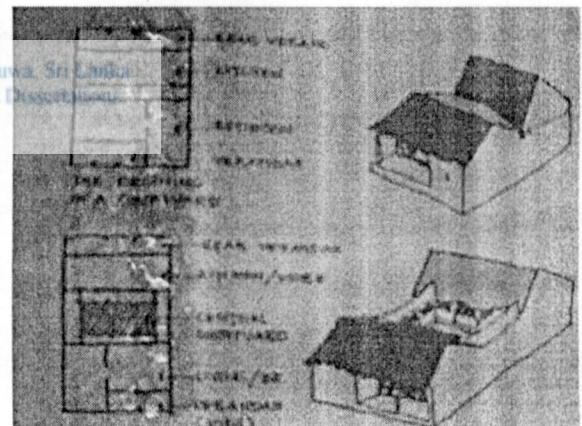
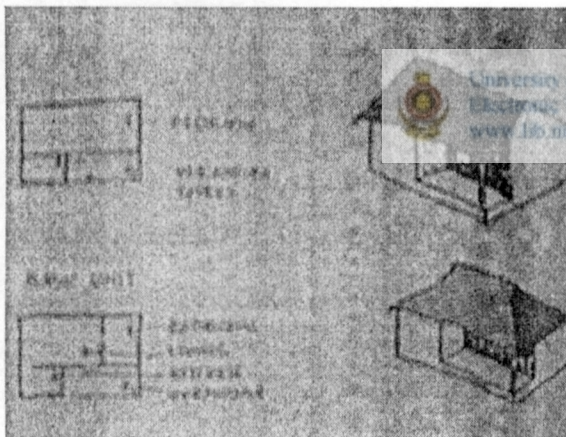


Fig 42: Evolution of the Courtyard

The central courtyard was commonly known, as "meda midula" is the open space created in the center of the house. The other living spaces are located around the courtyard. Geometrical shapes used for the courtyards and it were square in most places. It was used as a mean for getting good cross ventilation.

Some times, the ground of the courtyard was covered by growing grass and it prevented to the solar radiation coming into the building thus reducing the internal temperature. Normally large trees were planted in the courtyard to add coolness to air.



## Atuwa

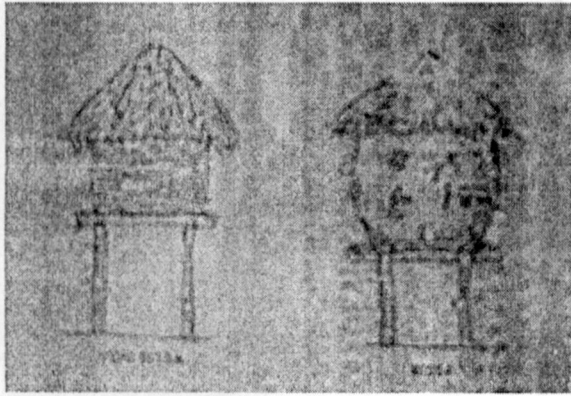


Fig 43: Aruwa at the early house

The granary which was traditionally known as 'atuwa' was the paddy barn. The good examples of this type atuwa are still to be seen in the traditional villages in the North Central province. The size of the atuwa varies according to the quantity of paddy or other grain normally deposited in it.

The 'Atuwa' is made in different forms in different areas due to various reasons such as climatic, weather, and biological factors. In wet zone the atuwa was placed at the corner of the verandah, on the four stone stumps. In the dry zone it was constructed with mud walls and covered with removable thatched roof.



## CHAPTER TWO

Several case studies on contemporary houses designed by modern architects were carried out to investigate the nature of the spatial arrangement of these houses. The purpose of these case studies was to look how the traditional space designs are used in modern domestic architecture.

In the selection of houses for case studies, it was decided to study the residences designed by several different architects. Another point considered was to select houses designed by architect who are well known. The reason is that the trends in any human activity, current in any given period are created by key person in that field.

### Case study 1

#### The cinnamon hill house

Designed by Archt. Geoffrey Bawa



#### 2:1:0 location



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

This site is located in Lunuganga overlooking the Dedduwa Lake. The house is surrounded by trees and two other trees grow within the house. The house was designed in such a way to spread out spatially over the site. The walls are of rough plaster in a muted plette of white burnt yellow ocher and terracotta. The external in natural timber, simple white fabrics and with sturdy wrought iron lighting fitting”.

#### 2:1:1 plan configuration

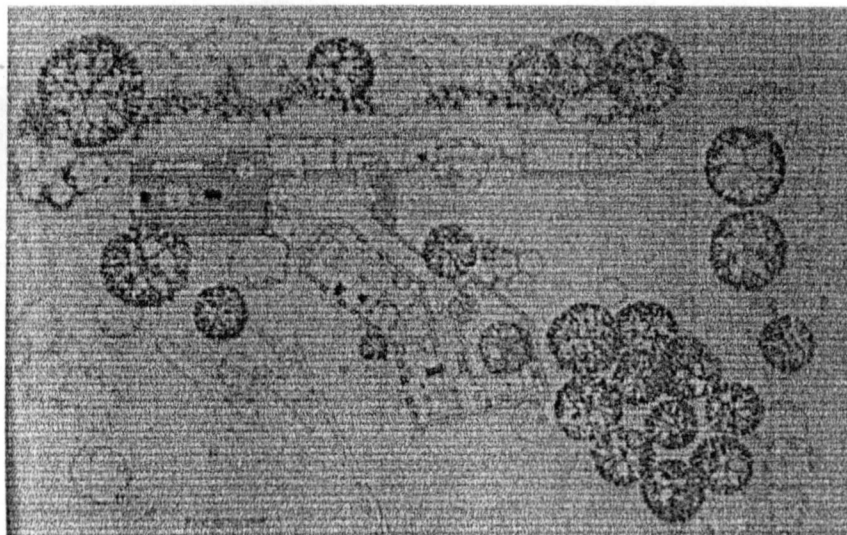


Fig 21: Layout Plan

This house is simple L-shaped plan. There are three major rooms each with an independent high gable roof. The living area is huge double height space. It is open on two sides providing a glimpse of the sky and surrounding trees through a high window in the gable. The main living catches the cooling breezes which blow from the south across the lake. Bed rooms are open towards the terrace. Then the one can catch the magnificent view of the Dedduw Lake. The bathrooms are being open to sky and each with a tree which provided dappled shade. Bathing is in the open, which is a wonderfully sensuous experience the servant's quarters is located away from the main house. Although the servant's quarter is located in a distance, it is provided with all facilities.

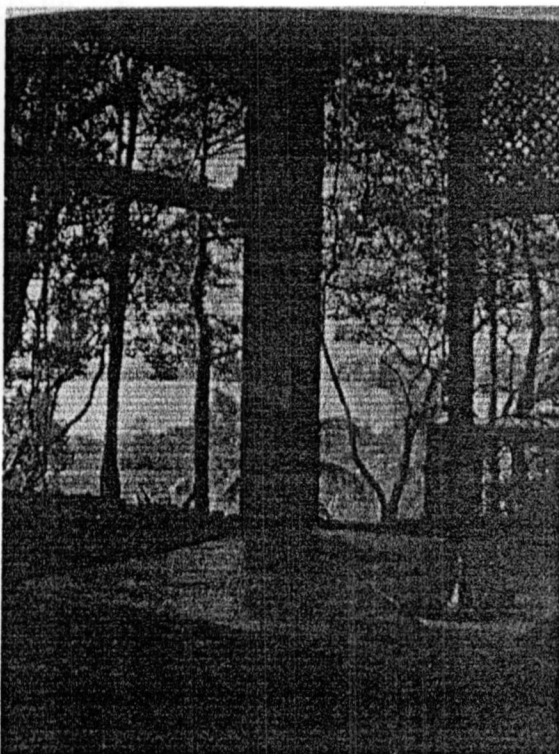
### 2:1:2 special articulations

The access to the house is through a gravel path flanking with trees on either side. The living area has been constructed in double height; the area is open in two sides, providing the view of the beauty of the environment.



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

This house is always extended to the landscape of the site. It gives the feeling to the dweller that he is dining with the nature. The terracotta tile on the floor and walls are rough plaster in a muted palette of white, burnt yellow ochre.



The dining space is also the same as the living space. The rough plastered built-in seat serves as the "pila" of a traditional house. The kitchen and the open study room merge with the garden.

Fig 22: Verandah Overlooking the Lake



Fig 23: View of the Bathroom

Two bedrooms are located in the east wing of the house. From these rooms, one can have a view of the lake dedduwa. A verandah leads to bedrooms. Each bedroom is attached with a bathroom. The bathrooms are sheer delight, being open to sky, and each with a tree, which provides dappled shade. The servant's quarter

is located away from the main house. There is very little buildup area: the other area is covered with trees.

## 2:1:3 Special characters

### Court yard

Each bathroom opens out to the small court. The exposed root of the trees in the bathroom provides a towel rail. The verandah of the main bedrooms and the study room were open out to the court yard which is located south end of the site. The natural lighting and ventilation of bathrooms is to provide protection from the germs.

### Verandah



Fig 24: Open Verandah with built in Seat

Verandah runs up to the bedrooms located at the east wing of the house. One side is covered by a wall of the bedroom and the other side is open out to the court yard. The terracotta tiles are used as the for floor covering.

## Rathna Vibushana's House

Design by Archt. Rathna Vibushana

### 2:2:0 Location

This site is located on the shores of lagoon Moratuwa; away from the Colombo-south Main road. The land is surrounded by the lagoon; with architecture glimpse of the ocean beyond.

### 2:2:1 Plan from

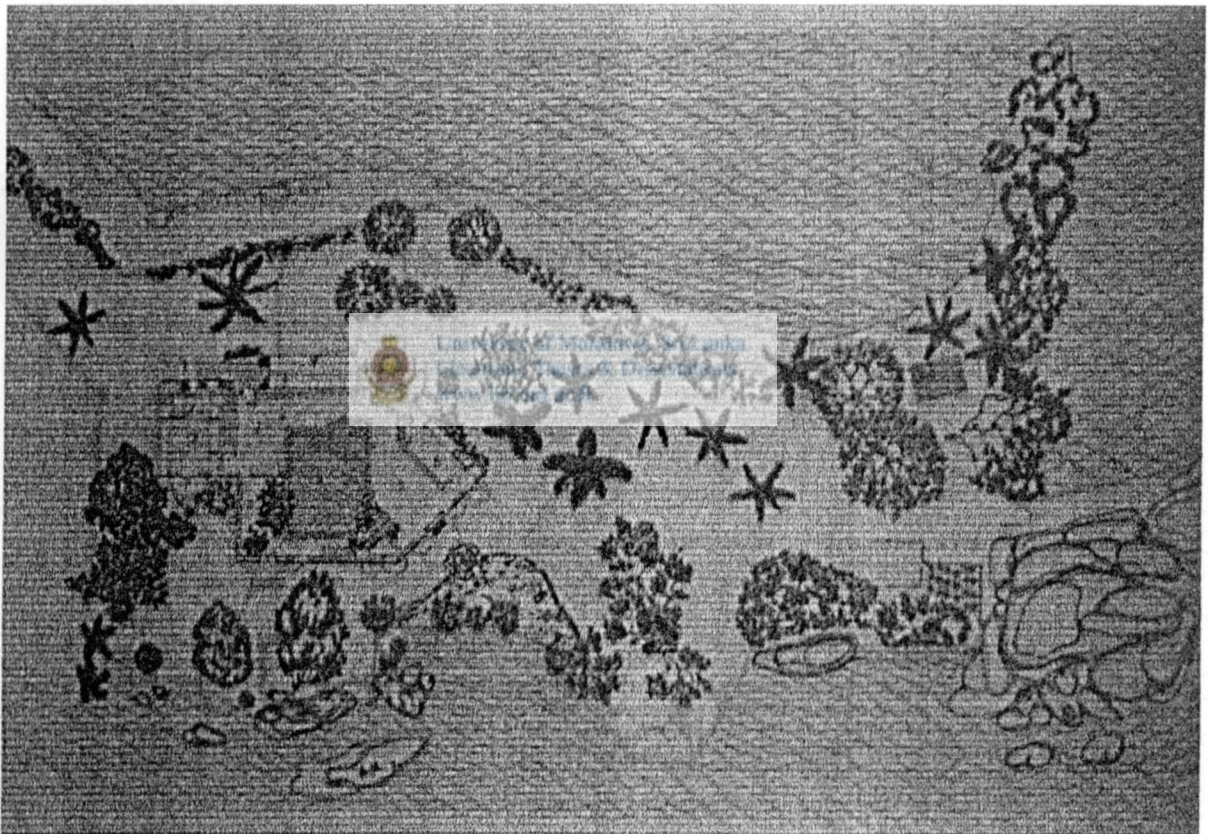


Fig 25: Layout Plan

The metaphor for the house could be that of small coastal fortress. The house revolves around and an open to sky courtyard surrounded by high protective walls. Open air lands to the "ramparts": architecture roof terrace which commands wonderful views across the bar of lagoon to the Indian Ocean beyond. Architecture metaphorical "tower" marks the seaward entrance.

(Powell Robrt – 1996.P.55.)

The plan is basically architecture square shaped one; the open-to-sky courtyard located in the center of the house. Sitting and dining areas are arranged on opposite sides of the courtyard. The house is two stories; upper floor consist of master bed room children's room and roof terrace.

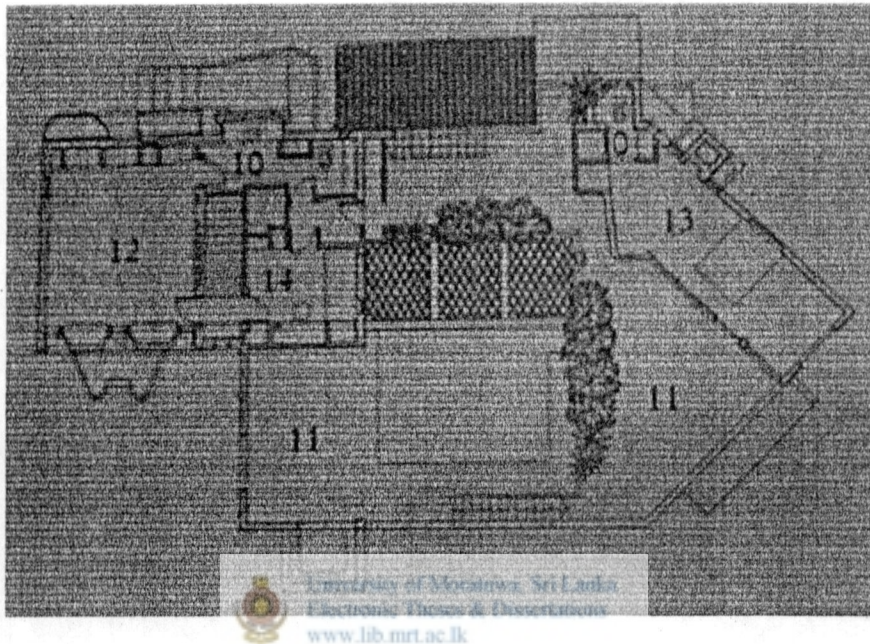


Fig 26: Upper floor plan

Trees and forms surrounded the pool. The effect is to merge the interior and the exterior, and the life of the house takes place at this interface. The central garden space is replaced with sheet of water, is a media for light reflection with effectively increase the interior coolness and entrance the living and comfort in architecture tropical climate.

Verandah being the transitional space in traditional Sri Lanka house, act as an intermediate zone from public remain outside, to inside in this contemporary house, require transition be obtained by leaving the hole ground floor as architecture public zoon, and locating the private areas at upper level.



## 2:2:2 spatial articulations

The house is architecture contemporary one, done by reinforced the main entrance has architecture decorative timber door. Central light pool will act as the main attraction for one who may enter the house. This central space and its surrounding are used as an entertaining area for visitors and gathering space for family members. It is the most live and interacting space in the house; and the liveliness if further enhanced by the natural flow of light and air.



The dining and sitting areas are located on opposite side of the courtyard. Living area is open out to courtyard; which come the cooling breeze from the lagoon. The kitchen and the pantry located next to the dining area facing garden and the lagoon.

Fig 27: View of the Reflecting Pool

The most private rooms are grouped in an enclosed core, in the north-east corner, from the main bedroom, there framed views of the lagoon and setting sun.

Open stairs lead to the upper level; architecture roof terrace which commands wonderful. View across the bar of the lagoon to the Indian Ocean beyond master bedroom, children's rooms' guest room all area located in the upper level of the house. Openness and close to be nature even could be experienced in upper levels of the house. The private spaces are located in combination with landscaped roof terraces, and also to create through views of the surrounding landscape, the build

forms in upper levels is expressed with cut outs main form of the house is a framed structure. Play of solids and voids of exterior wall will enhance the symbolic quality of build form-which the house is in harmony of balanced with the environment.

## 2:2:3 Special characters

### Courtyard

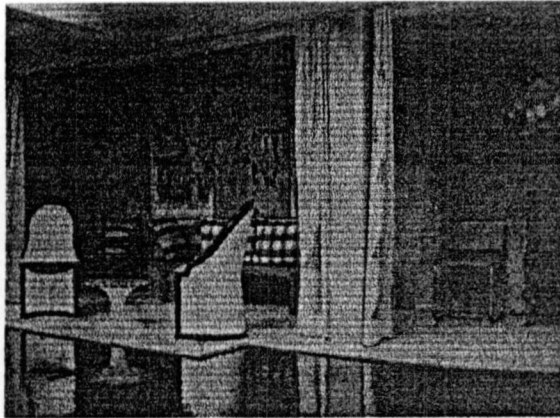


Fig 28: Open to sky Courtyard

Open-to-sky courtyard is covered by shimmering reflecting pool. That is heart of this house all the other main spaces located around it. It is used as an entreating area for visitors and the main gathering space for the family members also. This space gives comfort by natural flows of high and ventilation.

### Verandah



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

Verandah runs round on the two side of the courtyard. There are four 8"x8" concrete pillars to support the roof which is concrete slab. The verandah is covered with white painted cement floor.

### Roof



Roof became a major element of architecture any house. In this house some areas of the roof was designed in such a way with out long hanging eaves but the required functions of the roof mainly the protection from sun and rain is obtained through boxed type windows

Fig 29: Roof Terrace

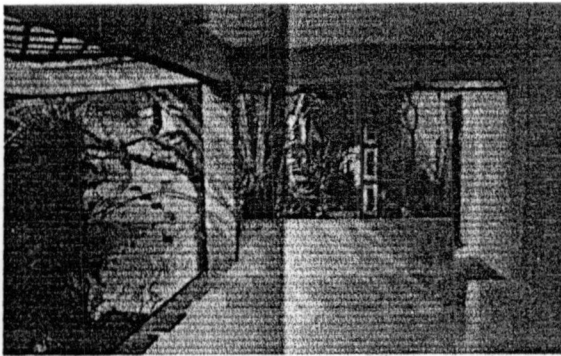


The pitch roof covered by the "sinhala tiles". The house has mainly rein forced concrete "flat" roofs; which acts as a roof terrace. Roof terrace is covered with grass.

In this as in later houses where he uses grass or gravel on the roofs, the architect departs from the traditional vernacular language of pitched roofs.

Powell Robert, 1996 R. 60.

### Pila



This house has a space; which is similar in concept to "pila" in traditional vernacular house architecture. It is located in the open space near by the pool. A built- in seat with a backing done in rough finishes cement, painted with white colour.

Fig 30: Built-in Seat



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## Case study 03

### Kolin Silva House

Designed by Archt. Vinod Jayasinghe

#### 2.3.1 Location

This site is located at Kalutara town, 300 meters away from the Colombo-Galle main road. It is an urban plot facing to by-road. There is a residence in either side of the site. The site is covered with a one and half meter height, white washed element wall and it spreads on about 35 perches. One third of the site is covered with vegetation.

#### 2.3.2 Plan configuration



Fig 31: Front View of the House

This plan is a simple form one. Three sides of the courtyard are covered by the house. Anyone who enters the site will step into the courtyard first and then to the house. The courtyard is covered with a dark water pond. The 'tampita' type podium is located on it. Trees and farms surround the pond and it gives coolness and comfort in the house. This is basically a two storied house. The living, dining, pantry and verandahs are located in the ground floor and the bedrooms, family rooms and terrace are in the upper floor. There is a rear garden space which gives a comfortable environment, even though it is in urban context. The roof is covered with steel tiles.



### 2.3.3 Space Articulation

The main door gives access to an open-to-sky courtyard which is enclosed with walls built right around the land. This courtyard, which is about one third of the whole land space, is a comfortable area. It is covered with trees, bushes and in the middle of it is a water pond of which the water has been made black.



Fig 32: Central Courtyard

There is a cement tiled pathway leading to an entrance podium which is a 'tampita' type one located on the water pond. The main verandah is also a 'tampita' type one, which leads to main living area. It is a single height storey and opened to the rear verandah which is located in the back garden area. This is an entertaining area for visitors and a gathering and living space for family members.

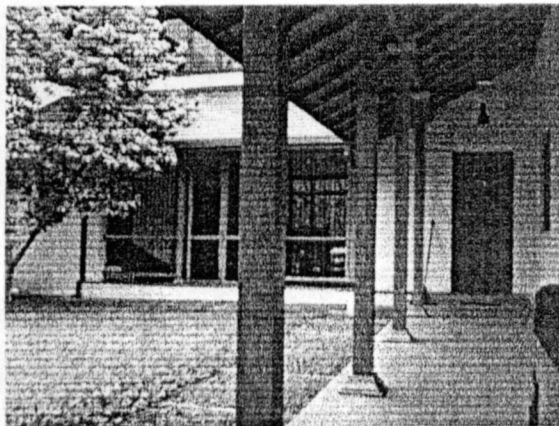


Fig 33: Open Verandah running towards the dining area

The dining area is located near the courtyard, which has a beautiful view. The liveliness of that space is enhanced by the natural lighting and ventilation. Kitchen and the pantry are located next to the dining area facing the courtyard. The servant's quarter is located adjacent to pantry.

Visitor's bedrooms are also located in the ground level next to the dining area. Both living and dining areas open to long verandah which is facing to rear garden. It provides a comfortable feeling with natural lighting and ventilation. Ground floor is fully covered with mat granite tiles. Timber staircase leads to T.V. room at the upper floor level. This space gives a magnificent view of the courtyard at the center and roof terrace.

Master bedroom and children's rooms are at the upper level. An attic space is provided upon the children's room. Master bedroom is opened out to a roof terrace which is tiled with terracotta. All the rooms are painted with white color. The roof is covered with brown colored steel tile to give a light weight quality.

### 2.3.4 Special Characters

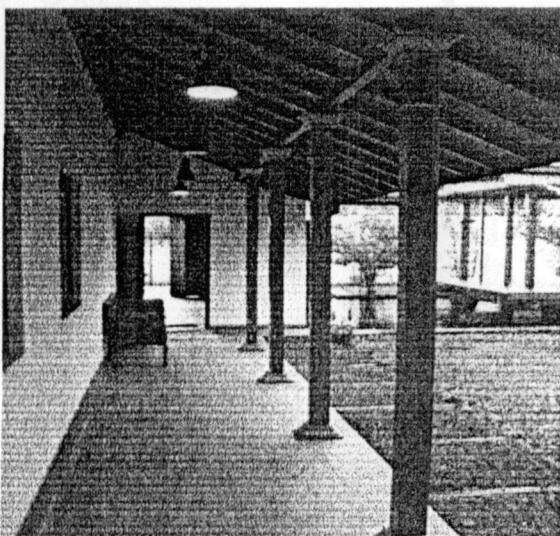
#### Courtyard



Fig 34: View of the Courtyard from the upper floor

The open-to-sky courtyard is located in front of the house. Trees and grass are planted to get a cool breeze and to reduce the glare from the tropical sun. In the middle of the courtyard, there is a black colored water pond and a 'tampita' type timber podium.

#### Verandah



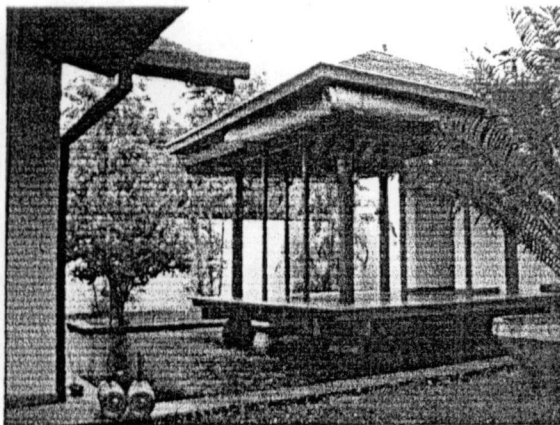
There are three verandahs in this house. Two of them run around either side of the courtyard. Square shaped timber pillars of which the roof is supported are lined along the verandah. Each of them is on top of a stone stump which is in the water. Floor is covered

Fig 35: Verandah around the Courtyard

with mat finished granite tiles and cane mats are being used as shading devices from the sun and the rain.

The other verandah is located at the rear garden space, which has a very pleasing environment. It is also used as a family gathering space. In here also the roof is supported by the square shaped timber pillars and the floor is covered with mat finished granite tiles. This space is furnished with armchairs and a coffee table.

### Entrance Podium



One of the interesting novel characters of this house is the podium which is located at the middle of the pond on four stone stumps. It is a new interpretation of the concept of double-platform monastery in early Sinhalese architecture.

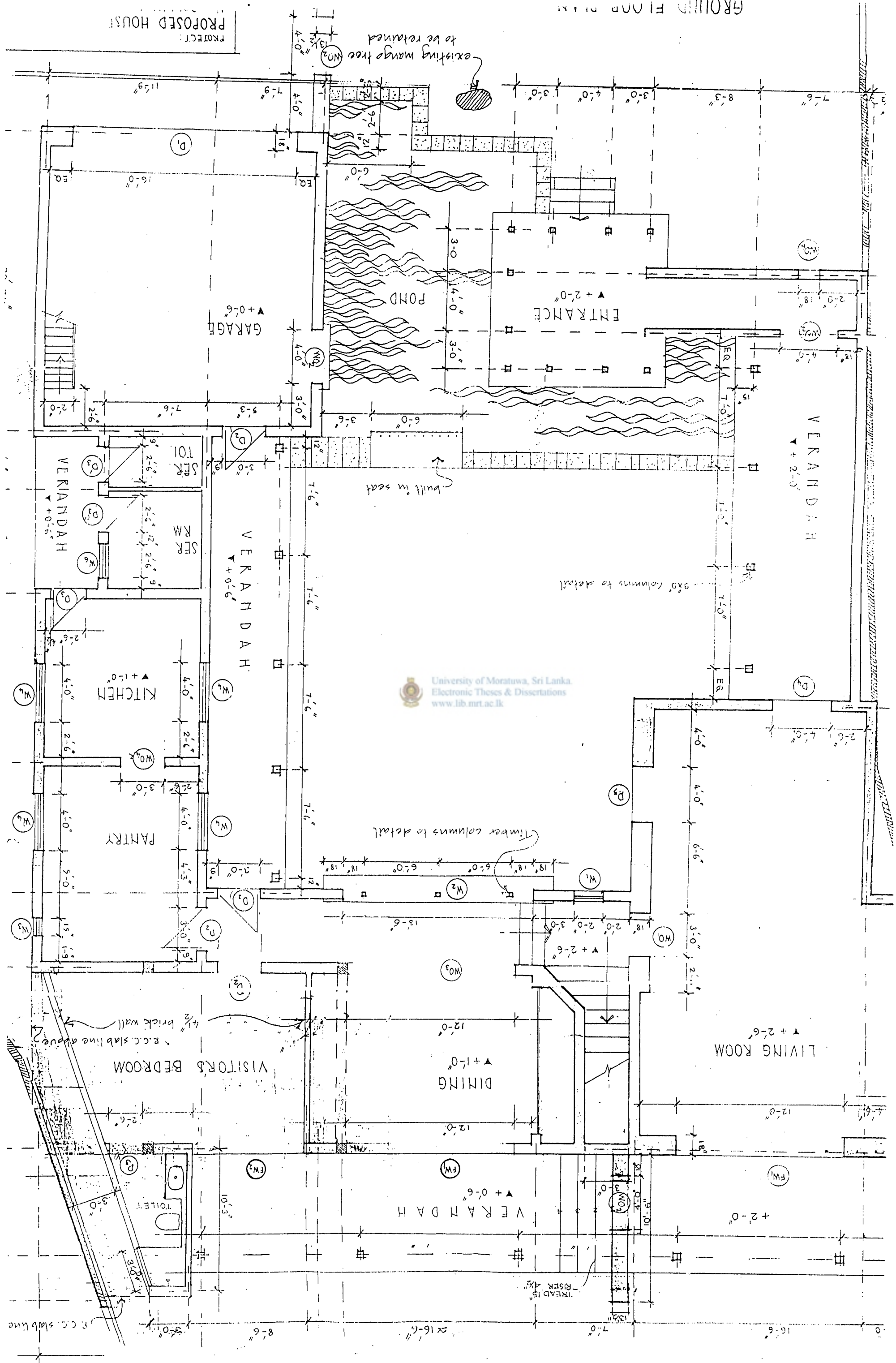
Fig 36: Entrance Podium on the pond



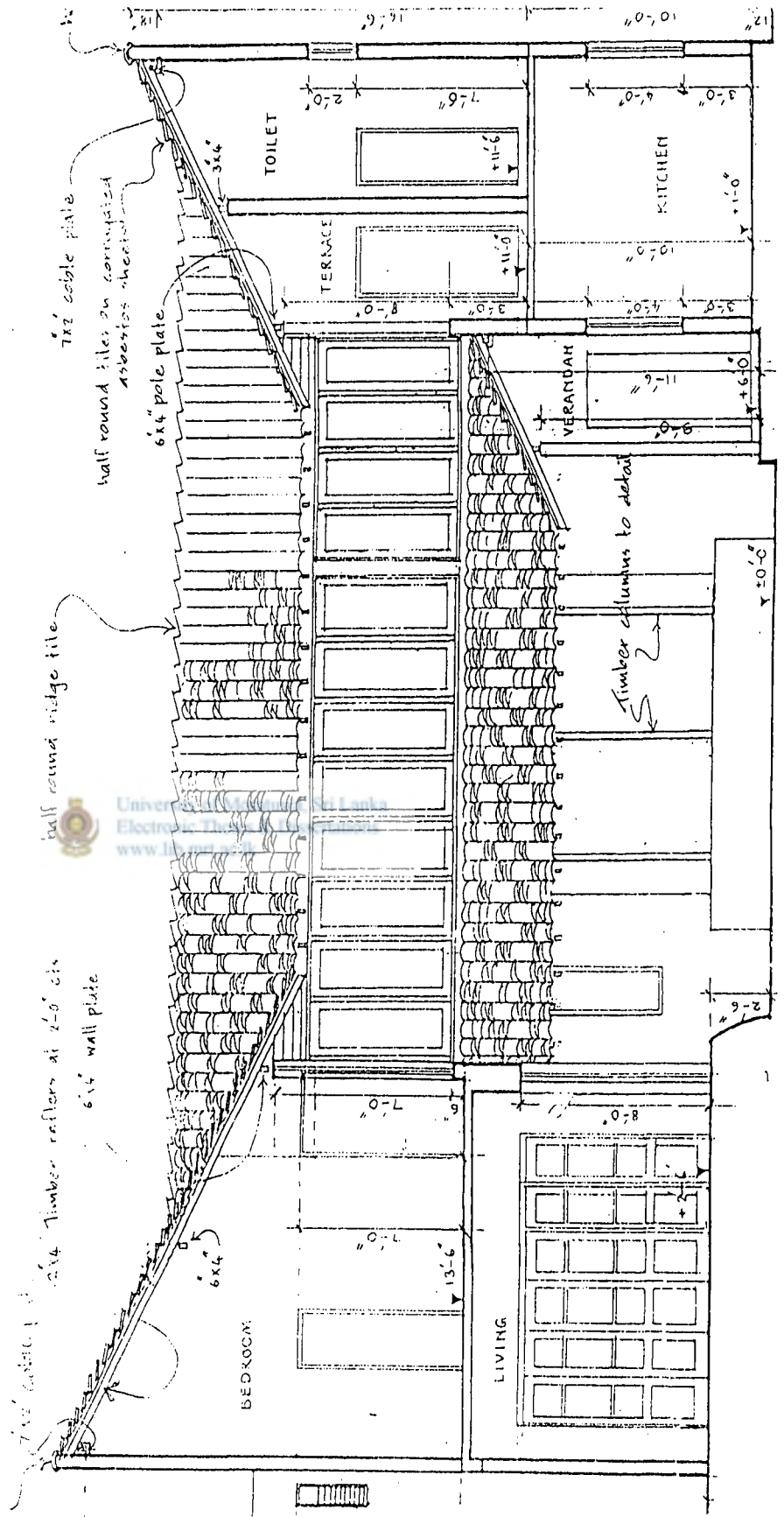
University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

It is a 3mx3m square shaped podium and shaded with steel tiled pitch roof. The floor is covered with timber deck.





University of Moratuwa, Sri Lanka  
 Electronic Theses & Dissertations  
 www.lib.mrt.ac.lk



S E C T I O N V

## Case Study 04

### Sarinda Unambuwa House

Designed by Archt. Bernard Gomez

#### 2.4.0 Location

The site is situated in an urban area in Kotte about 300m away from the parliament road. Though it is in an urban area, it is covered by a high wall from all four sides.

#### 2.4.1 Plan Form

Plan is basically a rectangular shaped one with a two storied house. Ground floor consists living area, dining, kitchen pantry and visitor's bedroom. Master bedroom, children's bedroom and lounge are located in the upper level. Open-to-sky courtyard is located in the center of the house. In the front area there is a still water pool and a back garden is located in the rear side of the site and it is covered with trees and grass. Rear verandah is merged with the garden space.

#### 2.4.2 Space Articulation

Main door is stepped up from the road level to give access to the verandah which is about 4 feet above from the entrance pool. By the side of the walkway, there is a bedroom, facing the pool, for the visitors. Gravel spread courtyard is located in

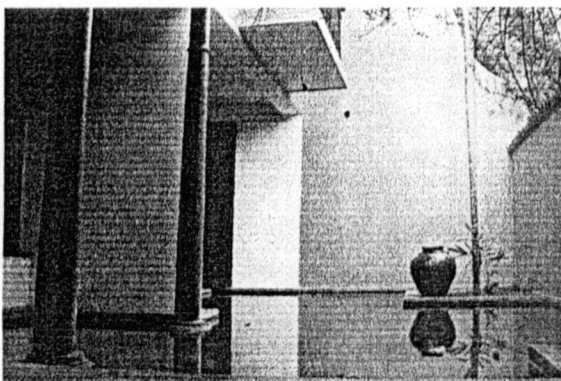


Fig 37: Pool at the Entrance

the middle of the house. Roof is supported by timber pillars which are lined around the courtyard. It gives the natural lighting and ventilation to the house. Living, dining and pantry are located around the courtyard. Dining area is open to rear verandah which is facing towards the garden. It gives a beautiful view of the landscaping.



Family living area is separated from the main living area. It is the get-together place of the family members. Kitchen and pantry are located in the center, next to dining area facing to the courtyard. Dining and pantry are opened out to verandah which is facing to rear garden and this allows natural lighting and ventilation in them.

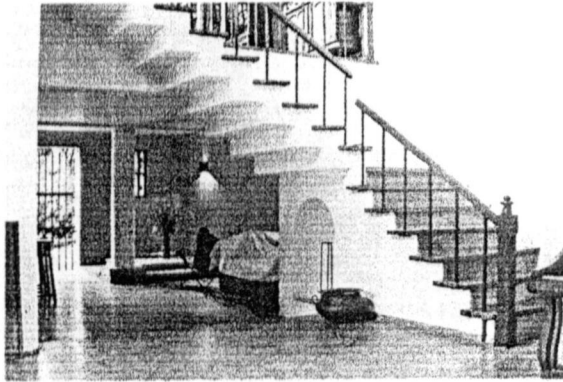


Fig 37: Stair Case leads to upper floor

Staircase leads to a lounge at the upper level. It gives the framed view of the garden at the ground level. A corridor leads to children's room and from there one can catch the clear view of the courtyard. Master bedroom which is at the other side of the house is opened out to balcony at rear side of the house. The roof is covered with half round tiles and it gives the traditional look to the house.



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

### 2.4.3 Special Characters

#### Courtyard

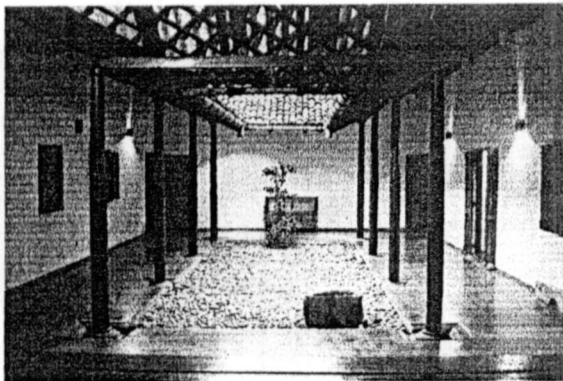


Fig 38: Central Courtyard

The open-to-sky courtyard is located in the center of the house and a passage around it. Courtyard is covered only with gravel and no plants. This gives the cleanliness and spiritual quality. The timber pillars are located around the courtyard supporting the roof. Large decorative pots and a grinding stone are at the courtyard as elements of the house.

## Verandah

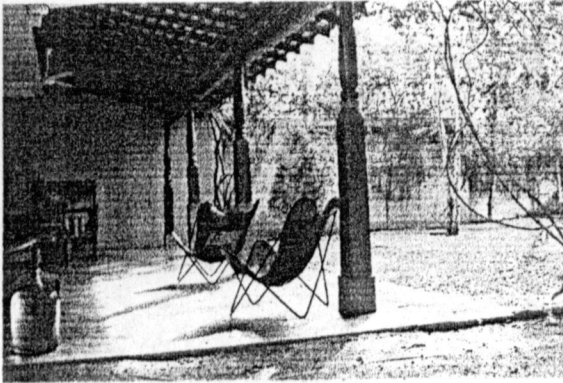
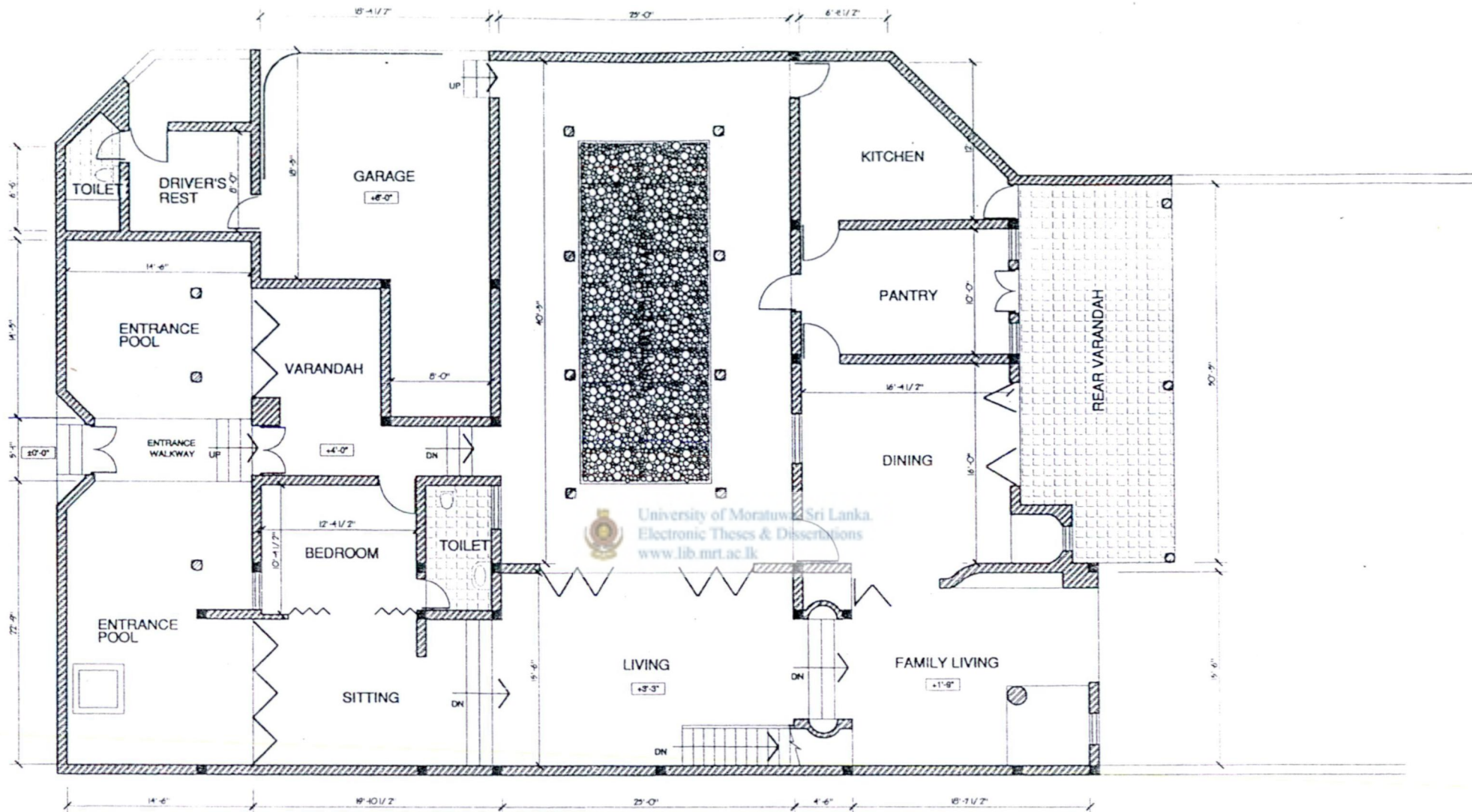


Fig 39: Rear Verandah facing to the Garden

There are two verandahs in this house. One is facing the entrance pool and the other one is facing towards the rear garden. Floor of the verandah is covered with terracotta tiles. Round timber pillars in the water are supporting the roof in front.

The other verandah which is in the rear garden is used as a communal space of the family members. The floor area is covered with rough tiles. This space is merged with the natural landscape. Round timber pillars support the roof.





**GROUND FLOOR PLAN**

SCALE : 1" = 8'

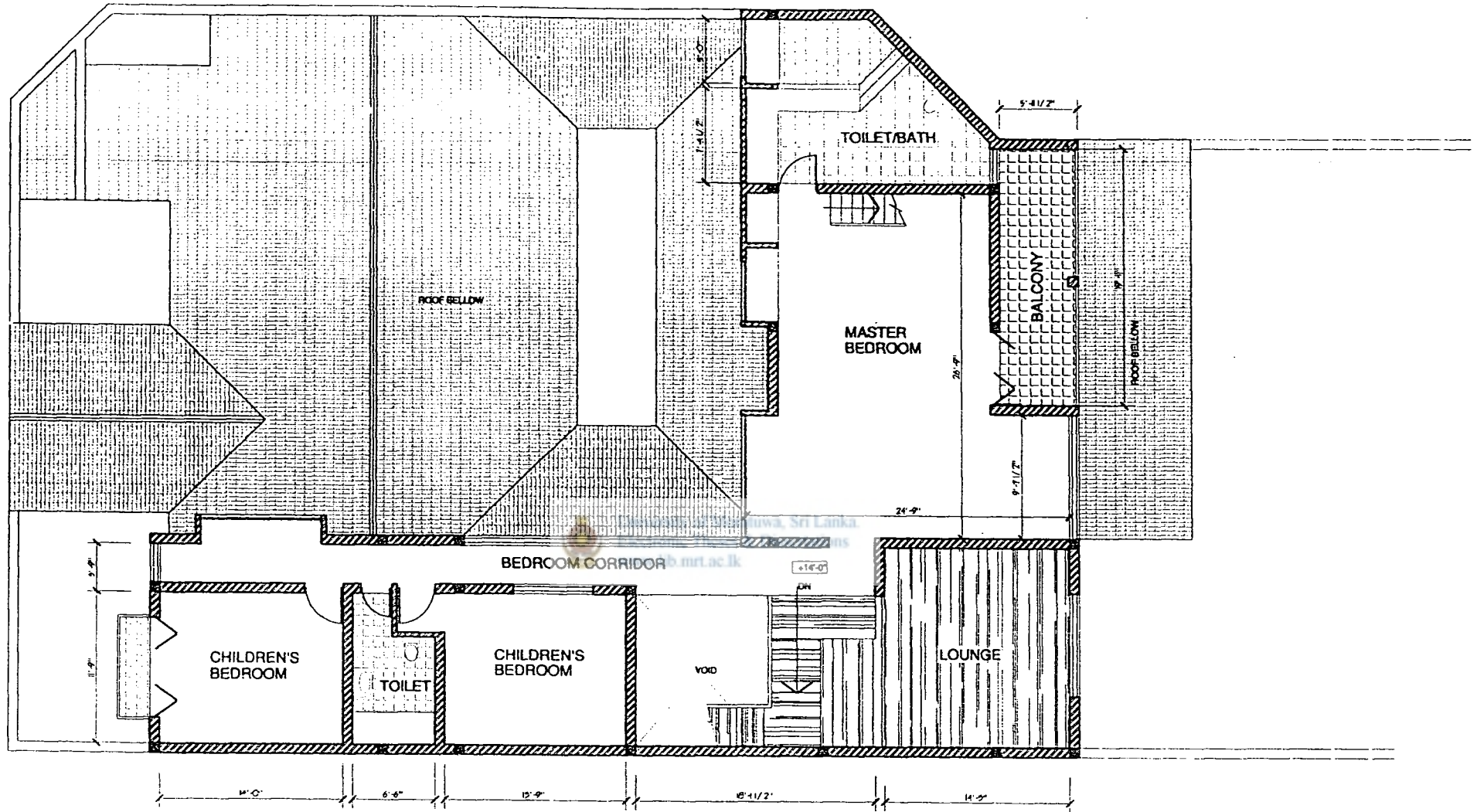
HOUSE FOR MR. SARINDA UNAMBUWA  
PAHALAWELA ROAD,  
KOTTE.

**BERNARD GOMEZ, JAYALAL FERNANDO**  
**CONSULTANCY SERVICES (PVT) LTD.**

Chartered Architects, Engineers, Quantity Surveyors and Interior Designers

NO.33/6, 2ND LANE, KOSWATTA, NAWALA.  
Tel, Fax : 074-403880. E-mail : bgjfo@eureka.lk





UPPER FLOOR PLAN

SCALE : 1" = 8'

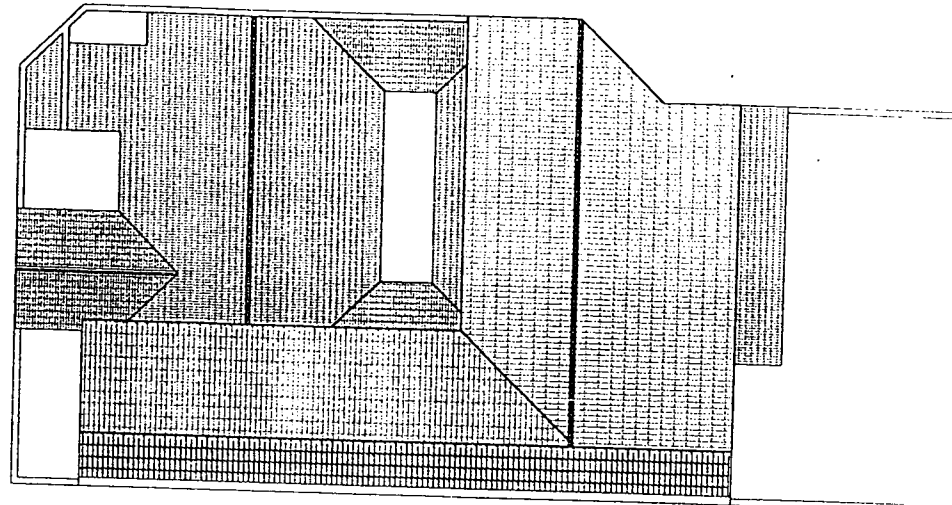
HOUSE FOR MR. SARINDA UNAMBUWA  
PAHALAWELA ROAD,  
KOTTE.

**BERNARD GOMEZ, JAYALAL FERNANDO**  
**CONSULTANCY SERVICES (PVT) LTD.**

Chartered Architects, Engineers, Quantity Surveyors and Interior Designers

NO.33/6, 2ND LANE, KOSWATTA, NAWALA.

Tel, Fax : 074-403880. E-mail : bgjfoo@eureka.lk

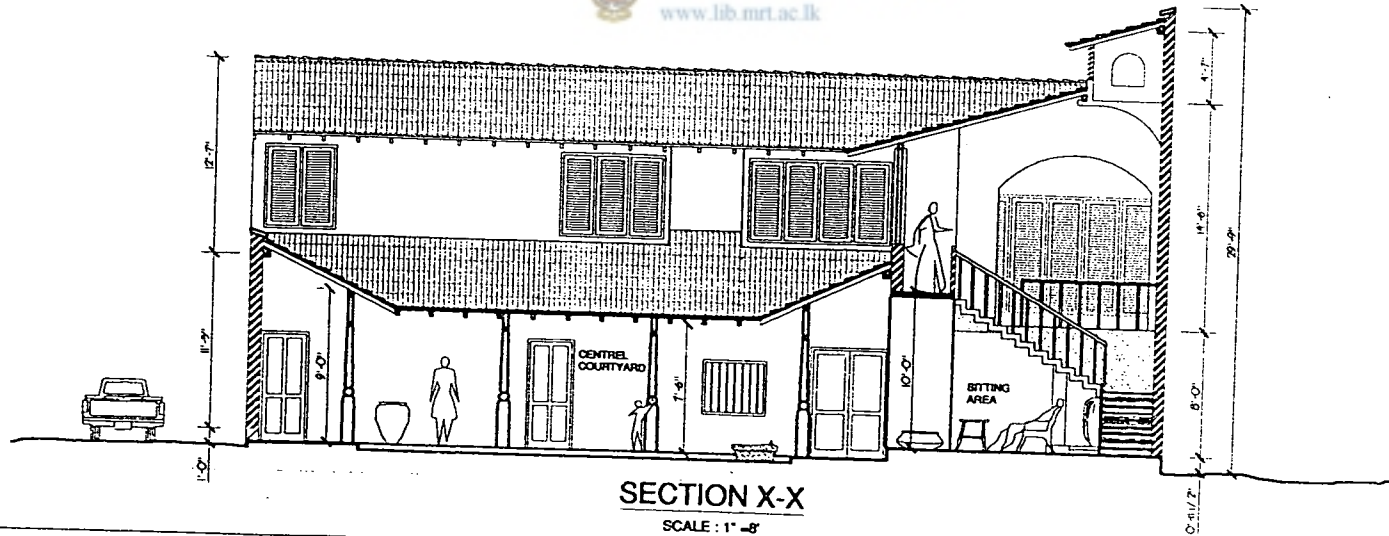


**ROOF PLAN**

SCALE : 1" = 16'



University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk



**SECTION X-X**

SCALE : 1" = 8'

**HOUSE FOR MR. SARINDA UNAMBUWA**  
PAHALAWELA ROAD,  
KOTTE.

**BERNARD GOMEZ, JAYALAL FERNANDO**  
**CONSULTANCY SERVICES (PVT) LTD.**

Chartered Architects, Engineers, Quantity Surveyors and Interior Designers

NO.33/6, 2ND LANE, KOSWATTA, NAWALA.

Tel, Fax : 074-403380. E-mail : bgjfoo@eureka.lk

## CHAPTER THREE

It is interesting to observe that many aspects of traditional domestic arch articulation, climatic responses, usage of raw materials etc; have made a grate impact on the modern urban dwelling. In this study it was notice that there are a few basic elements have inspired modern architects very much.

### 3:1 space Articulation

Space articulation is a key factor of any type of architecture. It is common to a large scale under taking an Air port and a mere hut in humble villager.

Main concerns of domestic architecture are the extreme use of available space, easy movement, use of lighting and ventilation as far possible and making the living comfortable.



Fig 44: Entrance to the House

It is observed that the modern architects have been guided by the traditional architecture in these matters. Bawa's cinnamon Hill house, described in the case study No.1 has largely drawn experiences from local traditional architecture, especially in respect of designing the spaces. The first significant point that we can observe is

the manner Bawa has used the existing natural environment in his land to enhance the comfort and artistic value and in his living areas. He has mixed the build structure with feature of nature in a practical and tasteful manner.

We can focus our attention to a smallest element like bathroom in a house. Here, he has used root of a living tree as a towel rail. It is important to note that, this is innovative design while practically saves a great amount of money, which should

have spent expensive, modern fittings, perhaps in many small units and also has done away with the tiresome excise of selecting, purchasing, transporting.

Esthetically this has enhanced the beauty of the bathrooms. Any body that uses this bathroom will get a feeling in his subconscious mind that he is bathing in a natural setting. In this regard the living trees of several sizes, green grass on the ground, stones of many sizes scattered here and there on the ground should be taken in to consideration.

Starting from a minor feature of the bathroom, we can see the same element of has been grown into a rather great scale to developed a highly innovative design in the living area. Here we can believe that his thought has been stimulated not only by courtyard of traditional houses but also by "gammadda" of more ancient cluster house villages.

The space articulation of traditional house where verandah and open to courtyard some times with planted trees merge together from a comfortable and beautiful living space. It also gives much freedom to the inhabitance to move around to the house. Like wise the gammadda of cluster house villages provides practical, natural and comfortable a traditional space in that setup. These elements can be clearly observed in the living area of Bawa's house.

It is a large plot of land which can be seen as similar to a "gammadda" in concept it with verandahs facing the open area can be seen as similar to a interior courtyard of a traditional house.

The way the space is used in sense of beauty it can be seen when we examine the layout of the servant quarters which is located at a considerable distance and connected to the main building by gravel foot path laid on the open ground.

Plot of land allocated for the house is considerably large. In the design of the house Bawa has made this plot of land entirely as a living environment. In this respect the land ground the built structure not a land devoted for any other purpose. Other than living, such as cultivation, industry, trade point etc. Here the land space and with the built space merge in to one entity to turn the house to a living hermitage, where he can spiritually march it to deep meditation.

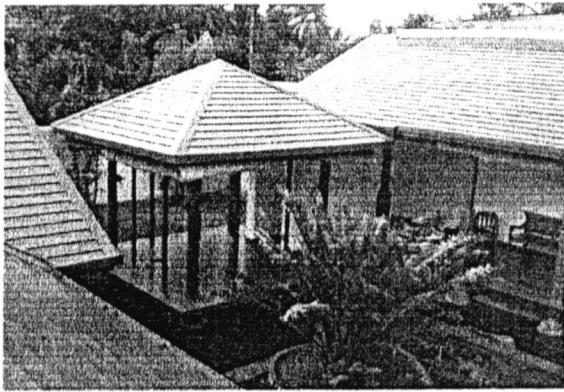


Fig 45: Central Courtyard

This innovative practice of merging the land with the build structures has served in another way in Kolin Silva house described in case study 3. This house is located in more congested area than where Bawa's house located. This house is built in a plot of limited scale, on busy public road. The challenge that the architect confronted with was the making a comfortable house for peaceful living. Obviously he should have find a way get him self away from the congested ness of the area made by the busy road. He realized this aim by erecting a large wall right round this plot of land. This situation could have been more uncongenial place for living, if architecture did not design this land covered by the walls on four sides.

The main entrance to the land is provided by a vehicular path lead in to the land through and entrance made in the wall facing the road. Immediately after entering the main door of the house is provided to the left side through which one directly get access to an open courtyard. Open courtyard is up to the other end of the land which is covered the wall on that site. The open space spread forming a central courtyard where the building in raised on the other three sides.

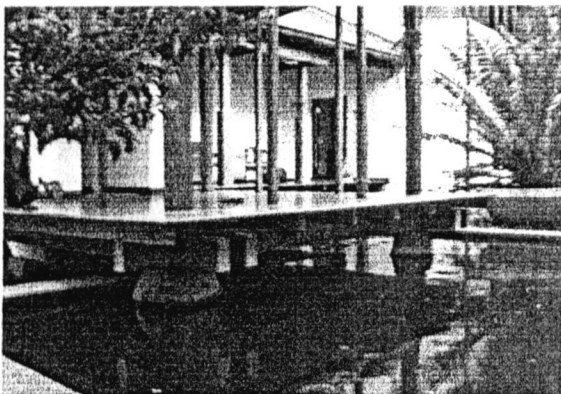


Fig 46: Entrance Podium

As there is a large space allocated for courtyard in front and the center, this plot of land becomes a comfortable space for living It is the same concept which Bawa has used in his house, that has inspired the architect who design this house. The merging of the built structure together with the open space has been the same principle. Here to enhance the naturalness the architect has added element of water by constructing a pond in the middle of the front area of courtyard. The entrance podium erected on



timber pillars remind traditional architecture as it is very much similar in the manner of building structure on stone stumps for "tampita" pilimages and Atuwas it also display a closed similarity to the double flat from monastic architecture in which of the twin building unit is surrounded by freezes of water.

The allocation of large space of land for the front and central courtyard and also another for a rear verandah design also as living area has been the main feature of the design concept of this house. This again is an idea taken from the traditional architecture of Sri Lanka.

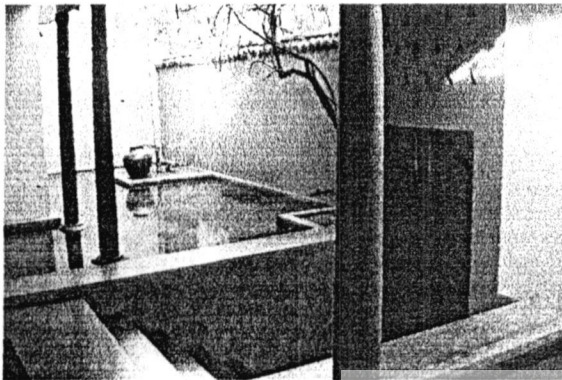


Fig 47: Entrance Pool

Case study number 4 it seems that he has considered the element of water is useful alluring an esthetic appeal. Hence it is the immediate mass of space with the entrance is that he has used for constructing a pool. Entrance to the living area is provided through a walkway flanked by the pool on either side of it. There is open Verandah to

the left side beyond the pool. Here again there is a central courtyard with Verandahs around it; with 8 columns support the roof.

### 3:2 Climatic control

Climatic control is also a main problem that the architect coming confront with all the houses examined in this study located in the urban areas with tick population and hence congestion. Temperature becomes a hazard in such situation. While forecasting there attention to design the building beautifully they also will have find ways and means to air condition the dwelling. The most satisfactory method of climate control is of course air conditioning or using A/C machines. How ever it is very expensive and maintaining difficult. To solve this problem architecturally designers have tried to develop their plan form to obtained extreme use of natural ventilation.

Bawa successfully do this with the help of innovation gain from the traditional Sri Lanka architecture. Already as has been discussed already the traditional house had advantage of locating in a vast natural environment which is rarely met with present day urbanized area. But we can't go by this assumption in regard to the land mass where the bawa's building located.

Space articulation in Rathna Vibushan's residence which him self has designed being an architect, is located in the urban area of Moratuwa. How ever the land he has selected in compare to Kolin Silva's land is in a better condition in respect of the location. The area is situate is not much congested. He has arrange all the areas in of his house around a large pool constructed in the centre of the house, it is again court yard of the traditional houses that the idea has been taken. How ever the fill of court yard with water is a new idea that modern architect has developed. The feature was already seen in case studies discussed above.



Fig 48: Built in Seat at the Courtyard

All areas of the ground floor are opened to the focal point, the pool. The outer appearance of the verandah area differs from that of the houses discussed above, because here we have an upper floor all area right around the pool. It is a little deviation from the arrangement of space in the traditional house.

In the ground floor we have used the concept of 'pila' of the traditional houses in a new form which add to more artistic quality. His 'pila' is more comfortable than the traditional ones as it is provided with a back. But in the traditional society it couldn't be seen in domestic houses of people, both humble and elite, because it was not allowed by anybody other than the king.

Unlike in all the other houses already discussed, here, he has conquered an additional space of same size of the ground floor by constructing an upper floor, but

the feeling of the structural strength has lessened by making it a terrace with vegetation; including plants, ferns and flowers.

In the space articulation, it is those most important two elements, namely the courtyard and water pool that have been considered by architect Bernard Gomez also in designing the house for Mr. Sarinda Unambuwa at Pahalawela road, Kotte which is studied under what he has done here is to integrate the natural setting of his land into his build environment. Like important role in promoting the life style of the people here Bawa uses the environment to promote comfort in his residence by cooling the air by means of having large space open to the environment of the land shaded by greenery growth. The breezes developed by moment the branches and leaves of trees, and the ability of trees and plants to absorb carbon dioxide component from air and supplying oxygen to the environment helped making the space congenial for living. Bawa has used this advantage to the fullest extent in his design. He makes this by merging the greenery environment with the constructed area of the building.

Bawa has laid out building in a single room-width in to an 'L' shape plan, furthering the possibility of cross ventilation through open Verandahs and large doors and windows.

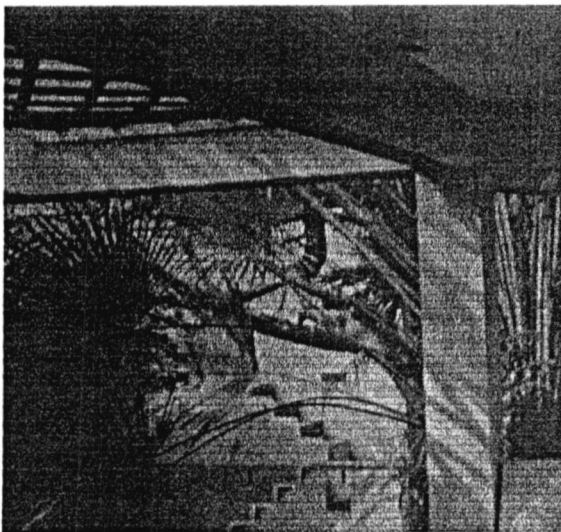


Fig 49: Central pool

Rathna Vibushan's house although has been conceived on the same concept. It differs to some extent as the build environment becoming same what prominent. But he is also successful in providing ventilation and light into the house by means of open verandah and courtyard although merging a large garden with the building is not to be seen here to extent of the Bawa's house, he has used the pool constructed in place of the central courtyard, for climate controlling.

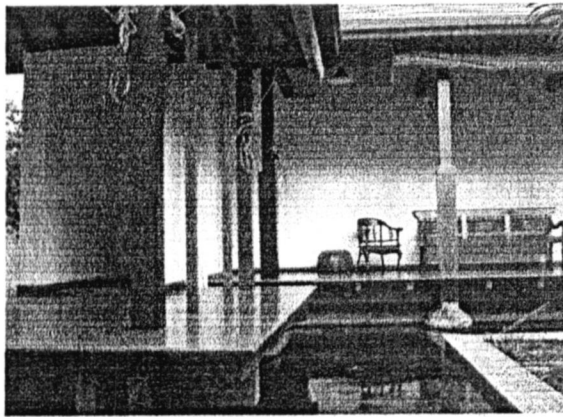


Fig 50: Central Courtyard and Pond

Vinod Jayasinghe the architect of the Kolin Silva's house can be said as having improved this concept in his design. He uses the pool and a large open air space, one as central courtyard and the other a well design rear garden to provide coolness and light. Using the natural trees and plants is in the same principle as in Bawa's house, but in a lesser degree. It should

be noted here had this architect has used the pond, by locating it at the entrance of the house to promote esthetical appearance also.

The above mention artistic quality of the pond has been used even in a more prominent way by the architect who designed Unambuwa house. He located a large rectangular poll in the front part of the building in front of a sitting area bed room, verandah, driver's room and also the garage. In between this area consisting of; sitting area, bed room, verandah, driver's room and garage and rear part of hose with a family living, dining, pantry and kitchen; there is a open courtyard and living space with merge in to one entity with folder-able doors as all the built structures of this house only of one room width; the ventilation and lighting has become easier.

### 3:3 Materials

Having after dealt with the major aspects of designing, such as space articulation, and climate control we should now pass into the consideration used of materials in these building. At the outset it is appropriate to state that row materials for building purposes depend on their availability. In early societies some people used caves and some others masses of ice. Because they were the easy available materials for them, likewise in the traditional architecture the villages have used timber in grate extent. However the modern architects have invented different types of building materials. Use of these materials is not always desirable. The good results of about discussed important features of domestic architecture could only be realized of only the appropriate materials were used.

In most respects use of organic materials is desirable than the use of factory built materials use of timber was one of the remarkable feature in Bawa's house. He uses to a high extent timber for ridge plates, wall plates, rafters of the roof and for pillars, door and window frames. He has used rough finish cement tiles on the floor large stretches on ground simply kept as grass lands. Perhaps with purposely added plants of various types, emphasizing the healthy effect of greenish materials. The walls of his house are finish with rough cement plaster. It's creates a feeling of which was found in the traditional architecture even for the towel rail of the bathroom he preferred to used root of a living tree it was the custom of the villages to spread wet cloths for dining on tree branches or over bushes, in the compound.



Fig 51: Timber Use for the floor



Fig 52: Granite floor

In Kolin Silva's house this feature of using organic material has become more prominent. He has used granite tiles to cover the ground floor which could have been of course highly expensive. He has used timber extremely the whole structure of the roof is constructed with timber a special characteristic is using four timber wall plate; where only one is usually used. The columns for supporting the roof area made of timber which again reminding pillars of the traditional houses.

The entrance podium erected over the pool is made entirely of timber.

It is only Rathna Vibushana's house that we find the emphasis on use of modern materials. But still impact of traditional is obvious. He also has used timber for roof, pillars in the courtyard.

The floor of that house is made of cement tiles with a rough finish.

### 3:4 Special Characters

Other than the above discussed features, there are some special characters which are showing the impact of the traditional domestic architecture it is intended to examine these characters briefly.

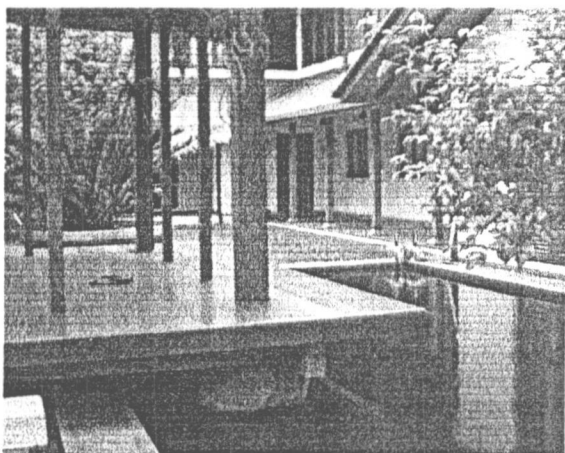


Fig 53: Open sky Bathroom

The space with trees of several types and the grass floor make it like natural environment around a well in village setting.

He has used only the furniture made of organic materials namely cane chairs, wooden tables and chairs in some places. He has kept type of large chest, Known as 'pettagama'. This has helped to create a feeling of a traditional setup in the modern dwelling instated of using sophisticated lighting fittings he has preferred globe-lamps introduce into the country by Dutch and become popular among the elites.

In his house there is a built-in seat made of brick and plastered with cement to give rough finish. This in fact reminds as of the built in 'pila' of the traditional rural houses.



The entrance podium of Kolin Silva's house built in timber on four stone, stumps definitely a feature inspired in format by the 'tampita' shrines and also by 'atuwa' of traditional architecture.

Fig 54: Podium on stone stumps

He has created a more comfortable living place by introducing a scheme of multi sitting areas in the house. All these sitting areas are open spaces like the open verandahs of the traditional architecture.

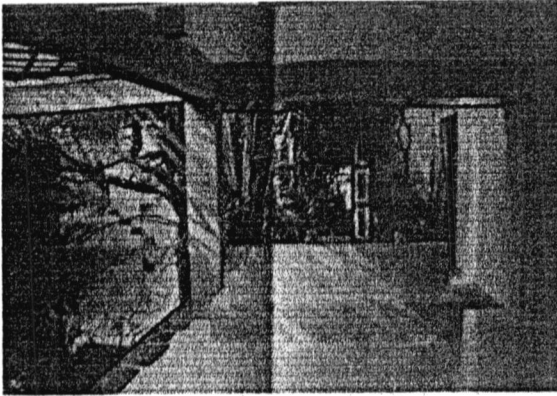


Fig 55: Built-in seat

Rathna Vibushana also follows the traditional architecture in using built-in seat like similar to the 'pila'.



Fig 56: Grinding stone at courtyard

Gomaze architect of the house of Mr. Unambuwa was also inspired by many objects used in traditional house-hold. He has used several of these objects used in traditional houses as design elements in this residence. Grinding stones of various types of '*mirisgala*', '*kurakkan gala*' etc have been placed in the courtyard.

He also has provided his client the comfort living by designing the house with several open sitting areas.

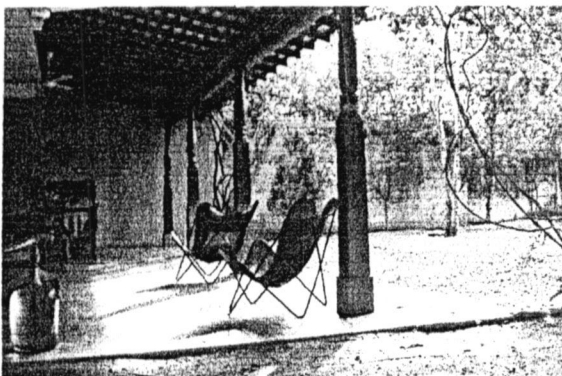


Fig 57: Open verandah facing rear Garden

It is proper to surmise; that all these innovative design elements of the modern architecture are derived or inspired by the concepts of traditional Sri Lankan architecture.

## CONCLUSION

Architecture is space articulation. Man has been continuously experimenting this, through the ages from his beginning. This study dealt with a current experiment in this respects, namely adaptation of concepts of traditional spaces on modern architecture. Leading architects of Sri Lanka have successfully involved themselves in the task. This study shows that this has now become a trend popular among modern architects.

This study indicates that the using the concepts of traditional spaces in architecture for present day need is a meaningful exercise. This adoption improves the quality of the designs of modern domestic architecture.

There are several features of the traditional domestic architecture which can be successfully used in modern architecture. Some of these are the verandah, the courtyard, the pila and the atuwa. All thee features were developed by people of the early days, who were fortunate enough to experience the wealth of natural setting. It is the accessibility to the nature that the modern man has lost. Adaptation of the traditional concepts of space articulation in the modern Architecture is a way to regain that lost heritage.

It was found by this study that the most popular concept of domestic architecture among modern architects is the concept of courtyard. This has become a way to bring the nature back to the urban context. The courtyard helps to realize this goal with spaces, which are without walls and roofs. The minor feature regarding this concept is the filling the courtyard entirely or partly with water and the scattering the courtyard with stones, plants and creepers, which help creates a naturalness in the heart of the dwelling. This can be adopted very well in modern architecture, has been done by Bawa and some others to the fullest extant.

This element integrating the built environment with natural setting is again promoted through the abundant use of verandah in modern architecture. In traditional architecture verandah was usually facing outside of the house, providing enough



ventilation and lighting. Now this has become a popular feature in houses, sometimes merging with rear garden. Again, Bawa's residence is the best example where this method has been very practically used to serve the intended purpose.

The concept of space articulation is more consolidated by taking other experiences also for the traditional architecture. The of using the nature in place of artificial creation, such as converting a root of a living tree for a towel- rail is a small, but far reaching, adaptation in this regard. The use of built-in seats instead of furniture is another such example.


The bedrooms were arranged in the rear ends of the traditional houses, perhaps, for reasons of security and privacy. It is the same concept that has inspired modern architects to located bedrooms of their houses in the upper floor of multi-storied houses.

This study strongly prove my hypothesis that the architects should used concept of traditional spaces to develop more appropriate architectural design for the people in the modern areas.



---

## Bibliography

- Abayavardena, H.A.P (1977), "Traditional Rural Organizational Patterns with special reference to North Central Province", *proceedings of the national symposium traditional rural culture of Sri Lanka* pp8-16.
- Ariyapala ,M.B. (1956), *Society in medieval Ceylon*, Colombo
- Bandaranayake .s. (1976), "Sri Lanka and monsoon Asian pattern of local and regional architectural development and the problems of traditional Sri Lankan roof", *Senarath Paranavithana commemorative volume, Sri Lanka* pp22-44.
- Bandaranayake .s (1977), "Forms and techniques in traditional rural housing in Sri Lanka", *proceedings of the national symposium traditional rural culture of Sri Lanka* pp63-71
- Brnouw V. (1979), "Anthropology. A General Introduction" , The Dorsey press, hmbudde, Illinois.  University of Moratuwa, Sri Lanka  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)
- Brohier, R.L (1969), "Furniture of the Dutch Period in Ceylon", Department of Government Printing Ceylon.
- Coomaraswamy, A.K. (1956), "Mediaeval Sinhalese Art", Third Edition, State Printing Corporation, Sri Lanka.
- De Silva. M. (1995), "A House in Kandy, Ceylon"  *marg.* Mumby, India.
- De Silva Minette (1950-1960), "Experiments in Modern Regional Architecture in Ceylon" *Journal of the Ceylon Institute of Architects*, pp13-17.
- De silva, M. (1998), "The Life and Work of an Asian Woman Architect", Smart Media productions (pvt) Ltd, Independence Avenue, Colombo 7, Sri Lanka



- 
- De Silva, N. ( ), "The Sri Lankan Tradition for Shelter" *Sri Lanka Institute of Architects Journal*
  - De Vos. A. (1977),"Sum aspects of traditional rural housing domestic technology", *proceedings of the national symposium traditional rural culture of Sri Lanka* pp39-61
  - E. Relph (1976),"Place and Placelessness" Pion Ltd., 207,Brondesbury Parck, London
  - Giger, W. (1960), "Culture of Ceylon in Mediaeval Times", Wiesbaden.
  - Henry .W. Cave (1912),"The Book of Ceylon", Kandian Architecture pp324-377.
  - MacDougalle, Robert Dancan (1971),"Domestic Architecture among the Kandian Sinhalese" *Ph.D Thesis, Cornell University, Unpublished typescript*
  - MacDougalle, Robert Dancan (1977), "Sinhalese Domestic Life in Space and Time" South Asia occasional papers and thesis, cornell University.
  - Oliver ,P. (1987),"Dwelling ,The House across the World"Phaidon Press Limited, Littlegate House,St Ebb's Street,Oxford.
  - Parker, H. (1909), "Ancient Ceylon", London.
  - Powell, R. (1998),"Urban Asian House" Thames and Hudson Ltd., London.
  - Powell, R. (1999) "The New Asian House", Select Publishing architecture Subsidiary of Select Books (Pvt) Ltd, Singapore.
  - Ray, H.C. & Paranavithana, S. (1959,1960) "History of Ceylon, Vol 1, 2 Parts", Colombo.



- 
- Robson, D. (2002), "Geoffrey Bawa the complete works" Thames and Hudson Ltd., London
  - Ronald Lewcock, Babara Sansoni, Laki Senanayake, (1998), "The Architecture of an Island, The Living Legacy of Sri Lanka" Barefoot (pvt) Ltd, 44, Ananda Coomaraswamy Mawatha, Colombo 7, Sri Lanka.
  - Wijesekara, N.D. (1951), "People of Ceylon", M.D.Gunasena, Colombo.

