A STUDY OF MODIFICATIONS IN SRI LANKAN APARTMENT HOUSING SCHEMES AND THEIR RELATIONSHIP FOR USER PERSONALIZATION

A DISSERTATION SUBMITTED TO THE UNIVERSITY OF MORATUWA AS A PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN ARCHITECTURE

J.A.A.W. JAYASINGHE

DEPARTMENT OF ARCHITECTURE

UNIVERSITY OF MORATUWA

SRI LANKA

MARCH 2002

78168

ABSTRACT

House is a medium through which a person gives an expression to himself. The house a person builds embodies certain features of the owners character, initially fashioned by the inherent views and attitudes of the community which he belongs to. The environment in which he is nurtured, the social group to which he belongs too, play a significant part in moulding his out look and ambition in life. According to **Fathy, Hassan**

> **A house is a visible symbol of families identity, the**
> **most important material possession a man can ever**
> **have the enduring witness to his existence.**

The past housing endeavours have mostly been recognized as concepts of actualizing the dwellers quantitative requirements. Thus may have been mere provision of tangible human comfort and lacked the perceptual stimulation of home. It could be said, therefore that many housing schemes have not provided the stipulation for dwellers psychological, physical social and cultural manifestation that are essential for their existence. The approach of providing apartment housings for urban middle income is one such strategy, which lacked in qualitative aspects and coherently has been a snatch in the recent past. They provided a different built environment where occupants were used to. Hence inevitable changes began to occur, when they moved into these housing schemes. The built environment provided, rapidly modified and personalized according to the needs and life style of occupants, to fulfill their psychological, physical social and cultural aspects and to create initimate perception of home beyond the parameters of mere housing

I

ACKNOWLEDGEMENT

I wish to express my heartfelt gratitude to the following persons, who assistance me during the study is greatly appreciated.

Prof. Nimal De Silva, Head of the Dept., Department of Architecture, University of Moratuwa for the valuable guidance.

Dr. Samitha Manawadu, My dissertation tutor for the support and inspiration extended to me, in imparting his enrich experiences on the subject and guiding me. I wish to extend my deep appreciation and gratitude to him for directing many aspects of this study, his patience and precious time expended in this respect. Dr. Rohinton Emmanual, Architect Wasana Wijesinghe for their initial guidance, invaluable comments and support.

Malinda, Nirosha, Subash, Gayani, Thanuja and Mrs Fernando for accompanied me.
Also Indika for being my source of strength and encouragement in numerous ways.

My beloved Father, Mother, Sister and Brother for all their rentless support, tolerance and above all for the love extended to me at all difficult time.

Finally I must express my heartfelt thanks to the staff of NHDA, and the persons who exhibits their housing units without any hesitation and expressing their ideas about modifying the given built form, provided valuable insights to me. Without their willingness to share their feelings about personalization of the given environment, this dissertation could not have happened.

CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

INTRODUCTION

TOPIC EXPLANATION

House is one of the fundamental needs of human beings. From ancient times it was one's private domain and it plays an important role in providing man a certain state in the society. Among other things house is also a media through which a person gives an expression to himself. That the house a person builds embodied certain features that are in effect out-lets of the owners' character.

> **To built a house is to create an area of peace, calm and security, a replica of our own mothers womb, where we can leave the world and listen to our own rhythm, it is to create a place of our very own, safe from danger. For once we have cross the threshold and shut the door behind us, we can be at once with our selves.**

Oliver, M. 1977;14

When it comes to the settlement of human being, the major attribute in creating its physical arrangement is the housing units. Arrangements of these components are govern by the life style and social behavior of the people. Here the living habits, value systems, rituals, various beliefs etc. influence the formation of house.

> **House cannot be seen in isolation from the settlement, but must be viewed as part of a total social and spatial system, which relates the house, way of life, settlement and even landscape.**

Rapoport, A. 1969 ; 69

When considering the process of home making the idea of home grows deep within you, and embodies long lived, often unconscious feeling towards shelter, family, community and self. When a house becomes a home the idea of comfort is born. Comfort in the context of domestic well being is not that of a materialistic one, but a psychological nature such as identity, privacy, territory etc. Where man feels comfortable in familiar surroundings, and develops a sense of belongings.

In the design of single family dwelling the identification of different interests and values may not be difficult, but in large scale housing projects a number of group of people with different and conflicting objectives and values do exist, people's spatial needs their values and self definitions change through time. The same design may have vastly different meanings to different people for instance the environment provided may not be the most appropriate one in order to achieve the qualitative requirements such as sociability, privacy, identity and territoriality. In mass housing under certain constraints people shaped and adopt the given environment to suit their personal needs. This problem is more acute in apartment complexes when vertical growth occurs.

PURPOSE OF THE STUDY

In the present day context the housing issue has been purely quantitative term and it has become a political issue rather than a humane one. Home serves both social and personal functions. Thus it should not only cater the physical needs, but should satisfy the psychological needs of the users, such as identity, territoriality and privacy etc.. It is considered here man as an active participant in the daily environment who dislikes to get typified. Thus they modify the given environment, rather than adopting themselves.

This study on examines the user modifications in housing schemes as it might evolve awareness on the real need of the users. It is necessary to emphasize on such realities of living when designing for **unknown users,** as the home is the place to which one

belongs, where one has ones roots. It is more than a typified model, whether it is a house in an apartment or an individual house, it is a personnel symbol.

SCOPE AND LIMITATION

For the purpose of the study the selected built environment would be apartment housing scheme. Considering the peculiarities among the social classes of the society, the study limits itself to analyze the aspects of middle class housing and does not engage in lengthy discussions of all social classes.

In Sri Lanka most of the modifications are clearly apparent in the apartment complexes built for middle class people. In order to generalization, the study deals with several large scale Apartment housing schemes in Colombo, less than four floors namely Keppetipola, soyzapura and manning town Apartments.

INTENTION OF THE STUDY

This dissertation seeks to establish that the particular aspect, which is **for personalization** has meaningful relationship with the modification done by user. Here the attempt has been made to analyze the modification as a way of communicating meanings, which are relevant to the users. Several areas of the housing units and the 3D form and layouts were analyzed to establish the idea of personalization.

METHODOLOGY

In this study adaptations were considered as a part of the physical environment. They are tangible and much of the adaptations could be observed as they are modified built form. Thus the method adopted for the study was mainly dependent on the detached observations, supplemented by unstructured interviews and photographic studies. Here the participant observation method will not be carried out due to time

constraints. The information was also gathered from user response surveys done previously.

In the first chapter establishes the idea of concept of home and main attributes related to it and the emergence of apartment concept due to changes in the socio-cultural context. The second chapter discussed in detail the selected examples related to Locational background, Layouts of the schemes, housing units, 3D composition and user modifications. In the third chapter comparisons were made between the layouts, dwelling units and 3D forms of the selected examples regarding the modifications done for personalization.

CHAPTER ONE

HOUSE AS AN IMAGE OF SOCIAL SYSTEM

CHAPTER ONE

1. HOUSE AS AN IMAGE OF SOCIAL SYSTEM

1.1. PROCESS OF HOME MAKING

House is one of the fundamental needs of man. It is a place where people entertain, bring up their families, relax, and express their feelings, individuality and a place where one can dream in peace. A house is a precise geometrical composition of inter-related spaces, defined by floors, walls, ceilings, doors and windows. People require their houses to be made into homes. A home is a place that is endowed with social and psychological meaning reflected through its decoration, personalization and use. Therefore house should not only be a shelter against the elements and the protection against the intruder, although they remain important functions .It should be a setting for a compact social unity, the family which should fulfill their psychological, physical and cultural needs.

1.1.1. PSYCHOLOGICAL VARIABLES

Psychologically man needs to attach himself to a place. The concept of home explains this attachment as a deep-rooted human feeling. People perceive the built environment through their particular needs, memories, feelings, past experiences and present concerns. Places are perceived with all their senses, not only with visual perception. Orientation, identity, territoriality and privacy are some of the psychological concepts, which are significant in bringing about a **sense of home**

a) Orientation

Man needs to orientate himself with the living environment. According to Norberg Scheltz **"to gain existential foothold, man has to be able to orientate himself. He has to know where he is"**. Orientation gives the basic identity to a living environment in helping to recognize one's place. Orientation of spaces within a home

enables to create activities more meaningfully. In past cultures orientation was a mythical concept rather than a perceptual or a logical requirement.
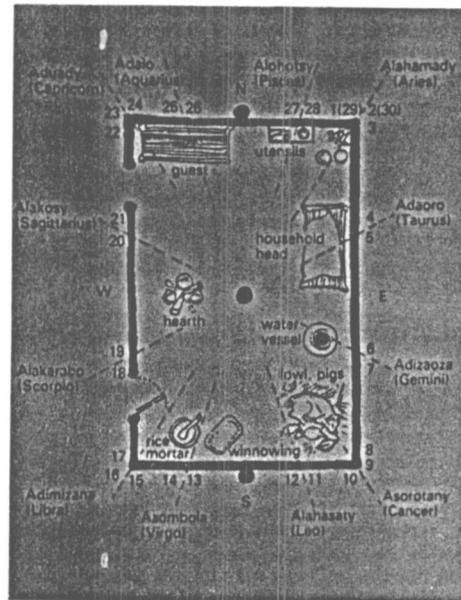
(Fig 1 - The dwelling as calendar and zodiac : Plan of Sakalava, Madagascar house with zones of activity, defined by their astrological associations)

b) Identity

Man needs to identify himself with the environment to know how he is in a particular place. It creates familiarity with the environment. Physical features can facilitate identity to built forms. House forms, interior decoration and personal possessions are mediums, which enable to express their identity. They are means of self-expressions. Also the identity within the society is one of the user needs and each and every dwelling unit has a significance of its own colours, textures, materials, landscaping etc.

Lack of identity in the living environment would bring about lack of **sense of place** and this lack of place in home would create anonymous environment resulting in **homelessness**. Identity would not only results from personal and individual self-expressions, but also a collective notion based on class, power and life styles.

When apartment complexes considered the individual housing units become the best means of expressing the individual identity of the occupants. In terms of identity the major advantage of the single detached house is that it can be moulded and shaped by

the users to express their identity. It can be personalize by adding, subtracting, changing and re-organizing.

> In owning a house therefore, people both provide a means for communicating their identity as contribution which represents the practice of the personal life

<div align="right">Duncan, J. S. 1981</div>

Describing the connection between the individuality and the home, Hassan Fathy states.

> Individuality is not an abstract and mysterious quality, but the sum of many tangible details, with whom he is masterful. There is a strong psychological connection between the individuality and the home, not anything else, that is his home, where he gets maximum psychological and physical satisfaction

<div align="right">Fathy, H. 1976.</div>

So that individual can express their identity through their root place the home. In the general sense their desire will be to express their social status, which is the position or recognition acquired by them in the society. The desire to do so varies according to different social groups.

c) Territoriality

Territoriality is one of the mans basic needs. The tendency to define territories is clearly seen in the animal world, which seems to indicate that territorial behavior is instinctive, not learned behavior. As human beings, man wants to develop a sense of

belongings with definite demarcations to develop his own identity, within a territory. They define spaces for specific uses by creating visible and invisible or even symbolic boundaries making it possible to defend the territory against unwanted intrusions. These demarcated territories bring about an emotional security to the inhabitants and provide a place to learn, play, feel free, secured and as their own.

> **Human territoriality emanates from the feeling of personal space, and show the sense of individual and group belongings. It is the act of organism to establish boundaries around there confuse to lay calm to and defend on area against outsiders**

Ekistics, 1972

The physical expression of territoriality may be through different forms and symbols. In the group sense, the traditional layout patterns of various settlements attempt to give a certain feeling of territoriality. In the individual sense, the need of territoriality would be to demarcate an area of one's own, around the individual housing units.

d) Privacy

Privacy is an essential characteristic feature in any apartment complex. Privacy does not mean merely being isolated or being alone. It can be defined as the need to control the unwanted external forces and interactions. The degree of privacy required may vary from person to another according to the nature of the community or the social class to which the person belongs The individuals in a neighbourhood settlement may require privacy for themselves as for their material belongings.

Privacy creates a sense of individuality to allow limited and selective interpersonal communications and to provide self-evaluation and self-identity. Thus privacy has both psychological and socio-cultural aspects, which are reflected in the organization of spaces. It is manifested differently in different cultures. Where different methods are establish to guard against invasion of privacy, such as norms and rituals to enforce

surveillance opportunities. Privacy can influence the people's lives in two ways aurally and visually. According to the **John Macsai,**

> **Privacy does not mean isolation. It is the ability to control when and where an individual will be faced with neighbours or their sounds or activities. Designers should provide both visual privacy and privacy from the sounds or neighbours**

The layout pattern of house units again, has a certain impact on privacy. For instance, the close knit arrangement of housing units can disturbed the privacy of individuals both aurally and visually. In some cases, the problem of this nature can effect the sociability as it can create a friction among the individuals in apartment complex.

1.1.2. PHYSICAL VARIABLES

Physical demarcation helps us to understand the private and public relationship and the activity pattern of the living environment. The physical constituents (walls, floors, ceilings etc) contribute to the understanding of the structure of the built form, which helps to define spaces and evoke activity patterns. Physical spaces have symbolic qualities, the meaning of which goes beyond the physical elements. The meanings are derived by the dwellers experience of the world. These experiences of spaces and built forms, physical features and the way they are located and organized, the behavior and ideas of people, contribute to a **sense of place.**

The management and organization of the elements of form and space determine how Architecture may communicate meaning. The relationship of these elements to one another and the nature of their organizations, communicate **sense of place,** movement, hierarchy and order. A good composition would affect the qualities of Enclosure, Center, Continuity which are the essential principals in the making of places, thus

9

enabling a sense of belonging. Thus the qualities of enclosure, center and continuity are essential qualities of home.

a) Center

The principle of center defines anchorage to a specific locality. The center is the place for action and interaction. The center unifies the social action of a place, according to E.Relph's can be understood as **centers of meaning** or focuses of attention and purpose. These means and functions vary from culture to culture.

In ancient times man symbolized a vertical axis by a tree or a pillar. His life existence was associated with this central point and it gave a sense of security and territoriality. Man in other worlds develops and emotional attachment to a central place. This is further explained when all human groups tend to regard their own home, homeland or region as the center of the world. Thus they developed and emotional attachment to that area, which they identify as a place that represents their social values.

In a physical sense the center of almost all the primitive houses had been the geometrical center of the physical structure. The center acts as the point of reference for their orientation within the house the center helps to organize the spatial structure of the dwelling in a hierarchical order, and has a community importance as well because; often it is allocated for an important activity or important persons in their life.
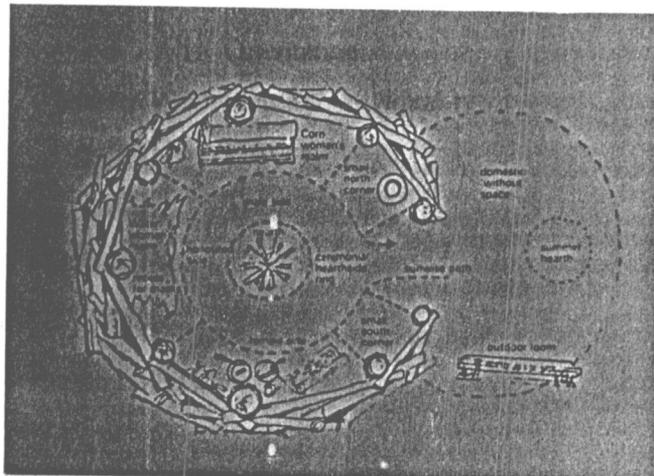
(Fig 2 – Typical layout of Navajo Hohans house (Mongolia) denoting the significance of center)

The radial plan of the Eskimo, which is the most characteristic feature of their dwelling, is closely related to the ceremonial and the hierarchical aspects of the dance. Hence private rooms open off a dance room.

Rapoport, A . 1969;55

Here the dance room creates the center. In most cultures setting of a house is done in accordance with their myths and believes. Any displacement of setting they believed, caused misfortunate for the occupants. In sri Lanka the site in which the house is built has been divided in to nine **padas** and the central place of the house is placed in the central square, the **Brahma pada**

b) Enclosure

Enclosure is a particularly significant attribute is creating a sense of place. Therefore spaces should be conscious design to evoke specific feelings within the user. The qualities of enclosed space, whether large, small, high, low, wide or narrow has certain characteristics related to human reactions and feelings. Enclosure defines the contrast between interior and the exterior of the buildings. The degree of enclosure can vary depending on the feeling that needs to be communicated.

A strong enclosure can create a strong sense of location and privacy, but enclosure are needed to evoke different feelings, therefore varying the degree of enclosure from space to space is important to achieve contrast and variety. It is said that an external enclosure is most comfortable when its walls are one half or one third as high as the width of the space enclosed, while if the ratio falls below one forth, the space feel to be enclosed. People are emotionally more comfortable in limited spaces enclosed from immensity and also human scale volumes make people feel at home.

Aborigines have enclosed their region in which they move in a system unique to them. Rather than in normal way of physical barriers. They have enclosed their territory by emotional and spiritual links with the land. Even their dwellings, have been less important than most other cultures

Oliver, M . 1975;41

They have succeeded in achieving enclosure independent of any building, which is very cohesive with the environment. It is still in practice in Sri Lanka that pots or blessed stones are buried in the four corners of the garden to enclose their territory from all sprits.

c) Continuity

Activities taking place within a house are placed in an order according to their importance. That is all the spaces in a house are linked or inter-related in a systematic order. They are linked by sub centers, which are ultimately link to the main center. This harmonious link of spaces help the user to perceive it conveniently that is continuity is always provided with legibility.

In Mongolian house it is enter from the east through symbolized transitional space. All the spaces inside are arrange around the central hearth, starting from south corner to north. And these spaces are linked by the movements around central hearth, which is in accordance with their symbolism. Further the smoke hole in the roof, which they regard as the eye of the heaven, is continuity in vertical axis.

In mousagen house, dwellings are arranged around the square hut of the chieftain, which symbolizes the villager's link with the earth, of which the chief is the temporal ruler.

Oliver, M. 1977; 54

Even within this house itself there is a continuation from one space to another.

1.1.3. SOCIOLOGICAL VARIABLES

Human beings are social creatures and cannot live in isolation. Interaction is necessary among individual not only within a home, but among the neighbours, as well. Thus sociability is an important aspect to consider in home environments. Further a home place an important role in providing man a place in society. Social identity affects what people see, and the ways they interpret the features of the built environment are conditioned by whom they are. Home serves both functional and symbolic purpose. For instance a home at a good address is more than a shelter, it is a symbol of the residents status. Therefore in addition to sociability it is necessary to have qualitative attributes, which would reflects one's class, status and power. Thus in formulating a design, careful analysis should be done from a social, cultural and temporal perspective.

a) Sociability

The social relationship among occupants of homes is achieved by the components of the physical structure such as layout, form and accessibility. These characteristics can be present in a single unit as well as when considering the entire neighbourhood. As much as privacy is an important attribute, interpersonal relationships are important for peoples well being. Therefore the possibility to interact with persons of the same household as well as with the neighbouring occupants is necessary. In a neighbouirhood the infrastructure facilities are important in terms of social interaction. The internal street network, sports clubs, churches, temples and shops become places to meet each other as well as surrounding communities.

b) Social Class, Status and Power

Numerous studies by social anthropologist and sociologists illustrate how social variables regulate design and behavior patterns and how the quest for status governs the design and layout of houses. Occupation is one of the factors that influence social

status. For instance professionals have higher status than labourers do. In addition to occupation, factors such as education, income level and life styles contribute to this.

Thus class may be defined socially to describe how people stand in the socio-economic hierarchy with respect to occupation, education, income and resources but it may be defined culturally in terms of their way of life. People of the same social status could have similar habits, values and beliefs, which forms a lifestyle and their behavior shape a settlement.

> **To the lower class people home is a retreat from the world they live in, the crime, vandalism and health hazards. By contrast to upper class, high status groups, home also symbolizes their social position. It has been noted that striving young people of the lower and middle classes choose mock-colonial homes that display their stability and wealth, where as more established professionals tend to choose less showy, better designed homes.**

<p align="right">Phillips, B.E. 1996; 466</p>

Visual symbols are useful in deciding a person's social status and class. The furniture that people buy, the way they arrange them and even the pictures they hung all convey their values and attitudes. Therefore it could be said that homes reflect the personality of the owner and is fact a symbol of self.

1.1.4. CULTURAL VARIABLES

A culture of a community can be defined as the way of life of the people. Thus the community can be identified by its culture. It may change due to influences like impart of foreign cultures, political, administrative and occupational factors etc.

The design and use of houses reflect certain cultural and social values and ideas. People perceive reality-what is there, into experience reality within the conceptual framework of their own culture. Language, customs and other elements of culture, provide the context in which people perceive the built environment. Within that broad cultural context, there are often sub-cultural meanings. It was established that there were association between forms of shelter and the cultural habits of people, and that there are spatial and activity patterns which are universal to culture.

1.2. HOUSE AS A SOCIAL ENTITY

1.2.1. CONCEPT OF DWELLING HOUSE

> **To built a house is to create an area of peace, calm and security, a replica of our own mothers womb, where we can leave the world and listen to our own rhythm, it is to create a place of our very own, safe from danger. For instance we have crossed the threshold and shut the door behind us we can be at one with our selves**

> **Oliver, M. 1977;14**

Therefore home has a deep-rooted attachment to man. Hence home can mean different things to different people. It is the most emotional bond between us and the physical world, likewise we tend to express in most situations like **I feel at home** it gives an idea of the emotional bond between home and man.

Home is one of the fundamental needs of man. It is a place where people entertain, bring up their families and express their feelings. When house become a home the idea of **comfort** is born. Comfort in the context of domestic well being is not that of a materialistic one but of a psychological nature where man feels comfortable in familiar surroundings and develops a sense of belonging.

Each ethnic group has its own type of dwelling, which indicates the nature of their living pattern, believes, cultural aspects, climatic etc. There is tremendous variability in the house form of each country and ethnic groups. We would expect Architecture as one of the more visible aspects of material culture directly to reflect these influences.

Most significant tribal domestic buildings were totally neglected by Architects but they are considered valuable artifacts to the country. According to the available literature tribal dwellings can be divided in to three major categories, such as African, American, and Eurasian.

a) African tribal dwellings

The African nomads much prefer living in tents. They have a belief that they will contract and illness if they stay too long in a house. They are either mat-covered tents or the more wide spread skin tents. The skin tents are often uncomfortable because of the low capacity of reflecting heat. Other desert dwellers use tents made from woven strips of black goat- hair or camel hair wool.
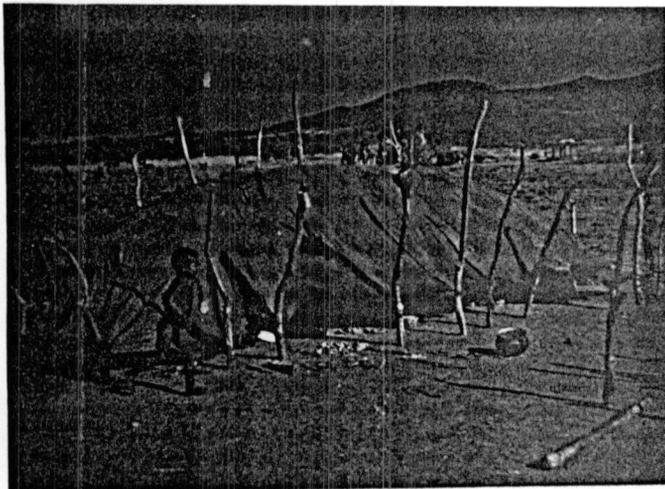
(Fig 3 – A Goat skin Tent – In Africa)

b) American tribal dwelling

The Igloo dome encloses the greatest volume for the smallest surface area of any wide-based structure. So heat losses through wind chill are minimized. The Igloo is made from a single material snow, which has not become too dense through setting cut into rectangular blocks and laid in spiral courses. This mean that the structure is self-supporting throughout the blocks being trimmed to slope inwards until the key block is added from outside. The builder then makes an exit, adding tunnel of snow blocks, which is below the level of the living quarters in order to drain cold air away by convection.

(Fig 4 – Igloo dome entirely out of snow)

The structure of the conical tent varied little over the whole of the area. It was comprised of twenty or so soft buffalo hides stretched over a frame, four main poles of pine, precious because they were carried are at distance from the eastern woodlands. Where lashed together at the top to form the frame

b) Eurasian tribal dwelling

The people of south Siberia are hearding sheep, cattle or camels and common to them is the use of distinctive and very wide spread tent usually known as **Yurt**. The floor area of the tent is thoughts of as divided into four sectors. The southern portion from the door to the hearth was the junior or law status half; from behind the hearth to the

back of the tent was the high status section. This division was complemented by a separation into male and female halves on the West and east respectively.
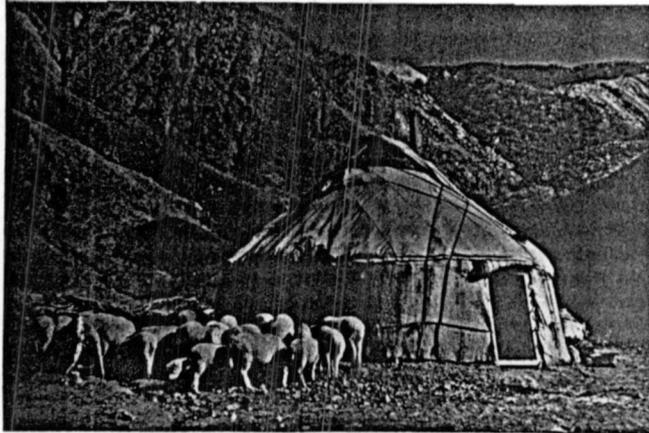
(Fig 5 – Mongolian Yurt with extra layers of felt for insulation against winter)

Much further east is the richly diverse cultures of Indonesia and South East Asia. The houses was raised on piles, entry being gained by a trap-door in end and a common Indonesian feature which it has been suggested, derives its shape from a ship's bow and stern.
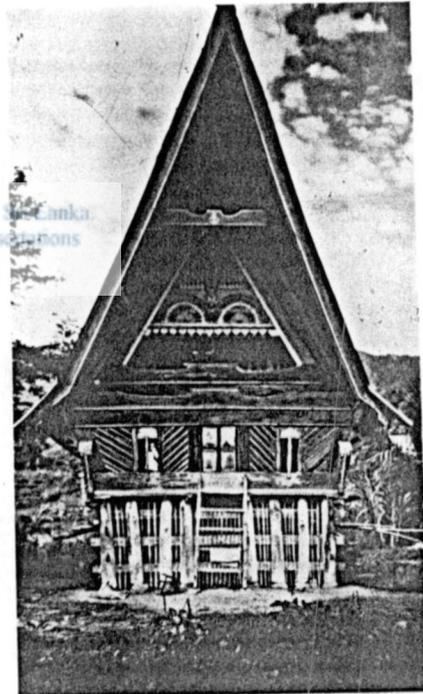
(Fig 6 – Indonesian dwelling with a shape of ship bow and stern)

c) Sri Lankans traditional dwellings

House or a shelter is not only an item in a settlement system. Sri Lankan house has its major role to play, that the cultural needs of people. The Sri Lankan house that has existed in here for more than two thousand years was an outcome of strong philosophy of Buddhist vision like the simplicity and the impermanent nature of life.

The house was part and parcel of nature; the materials were borrowed from nature and return 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 regular maintenance and it was continuously embodied in customs

De Silva, N. 1991
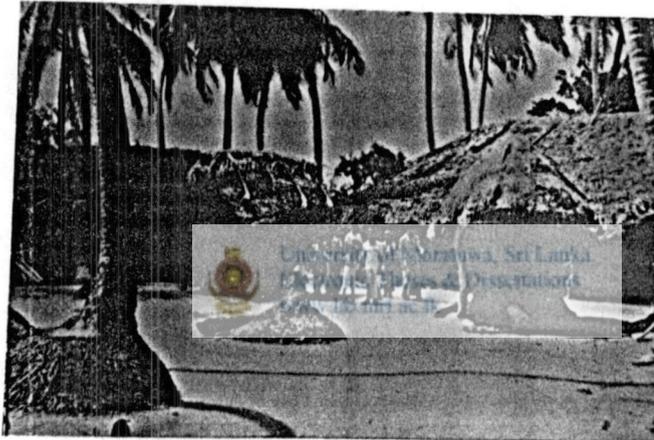
(Fig 7 - Traditional house – Sri Lanka)

Finally all these examples draw important lessons for us, the home or the dwelling place of living is a problem of utility that do not apply same to the others.

1.2.2. HOUSE AND SOCIAL NEEDS

In reality society is a large group, which formed by organizing core groups and sub groups. A core group is formed by nature. A collection of core groups form sub groups and they are ordered by their sub-culture.

A large group is formed by a collection of sub-groups and governs by common social needs like language livelihood and social status. They are ordered by their culture and

which influences behaviors through their names, values, expectation and sanction. Therefore as a whole, values play a big role in the formation of society. The values are not quantifiable elements, it describe the relationship between things, people and nature. Which is just where their experience and quality lies.

In housing individual and group needs are to be satisfied along with their social values and their aspirations. When satisfying all together a commonly accepted system according to their needs, and aspirations are to be adopted.

> **House form is not simply the result of physical forces**
> **or any single casual factor, but is the consequence of**
> **a whole range of socio-cultural factors seen in their**
> **broadest terms**
>
> **Rapoport, A. 1969;47**

According to numerous studies by social anthropologists by analyzing how social variables regulate design and behavior pattern, house is a result of an interaction between man and his social needs. Man being representing his social needs such as his life aspirations, attitudes, way of life, personality values, family, social status and so on.

1.2.3. HOUSING AS A SOCIAL PROBLEM

Migration of people towards cities becomes one of the most significant phenomenons in terms of the population distribution pattern all over the world. As a result of this an in balance of the population between urban and rural areas had occurred. Therefore this affects greatly on the physical structure of the urban context.

During the period of industrial revolution there were significant powers that make people attract towards the city centers. The rapid growth that took place in the city centers and also great expansion of employment opportunities were some of them. The industrial revolution change the characteristics of the medieval cities in the whole

and changed this into centers for manufacturing and mass production with the emergence of various industries, and the workers concentrated to the cities from rural areas.

> **In the early ages of the industrial revolution the urban magnet attracted country people into towns with the promise of jobs variety and excitement creating an inward flow**
>
> **Alexender. 1965;37**

This happen after the industrial revolution throughout the world, between 1970 and the year 2000 the urban population of the developing regions is expected to multiply by three and it will represent 60% of the worlds total population. The people who migrated towards the cities demand shelter and other civic amenities. Most of them belong to middle income and low-income categories. Majority of the low-income people who migrated to cities aimed at finding jobs in the industrial sector and also in the harbours. A large number of middle class people who came towards cities expecting white-collar employments and this resulted in a great expansion in the middle class population. These middle and low-income migrant created high population density within the city centers.

When considering the Sri Lankan situation the main traditing activities passed over to the Portuguese, Dutch and British from the beginning of 6th century. According to topography of this island Colombo is situated in an ideal place to distribute and make connections with other countries. When analyze the history of Colombo it reveals that it has developed as a harbour based city and it had happened to increase the migration of people towards the city. Therefore this could be considered as the principal distribution center of this part of the world. That was the main reason, which made the world powers invade Sri Lanka and have some control over Colombo.

During the period of British occupation the government introduced various buildings to facilitate their rule of this country. This trend marked a vital change in terms of migration to city centers. It usually increased the number of white-collar office

workers and the office administration and this helped in the growth of middle class community.

Therefore masses of people migrated to the city, seeking employment and in addition to this, some of them expected to have a better educational background to their children. Transportation facilities, easy availability of day today needs and the glamour of city life were other attributes. As a result of all these things a new trend emerged to bring masses of middle and lower middle-income people towards the city of Colombo.

1.2.4. EMERGENCE OF APARTMENT CONCEPT

As a consequence of the concentration of masses of people in the city centers, the house in the city centers were becoming less and as a result the land-housing problem became acute. The concept of vertical growth came into Sri Lanka during the colonial occupation especially during the time of British influence in addition the ideology of utilizing the land area of cities as a means of expressing the power and strength of them come into being. During this era the western countries had accept the concept of multistorey apartment as a efficient means of utilizing the limited land area in the city center, thus fulfilling the quantitative requirements of housing specially for the middle and low income groups who migrated from the rural sector.

The particular ideology was included to Sri Lanka in the latter part of the British occupation. During this era the British companies had been developing all over the city of Colombo. So that there was a great increase of the white-collar migrants to the city and most of them were middle-income groups.

This situation created a problem of providing residential accommodation for the migrant communities. The concept of multistorey apartments was first introduced to Sri Lanka by British. As the ideology had been accepted as a successful solution to the problem of housing in global context. Some of the British companies put up multistorey apartments for the people, who migrated expecting white-collar

22

employment in their companies. Apartments put up by the Bour Co Ltd; the Colombo commercial company in Hunupitiya Lake road is examples of this policy.

In addition to these the Regent flats at Sir Chittampalam A. Gardiner Mawatha, Galle face courts, Manning Mansion in Slave Island and Bogala flats at Dicmons roads are some of the apartments which sprung up during this era. Having realized the concept of Apartment block as an effective solution to the housing problem in the urban sector also introduced several apartment complexes in the city of Colombo, Bambalapitiya and Maligawatta flats in 1960's, Anderson and Keppetipola flats in 1970's were some of them.

The problems faced in Sri Lankan apartments seem to be varying from time to time. At the very beginning the problem was that the people did not have any facilities in this apartments. Later they suffered with the rigid nature of the factory products. Further the lack of identity, variety etc. were the problems. Later the supply to meet the demand was very poor and people who wanted these housing had to suffer. As a result the existing schemes were re-designed with more flats, which causes over crowed situations and changes in certain existing patterns. Therefore both the occupants and the people who settled there had to face difficulties. Poor maintenance and the poor considerations on the wants and needs of the user requirements were the major problems, which could experience in this type of housing.

CHAPTER TWO

EXAMINATION OF CHANGING ARCHITECTURAL CHARACTERISTICS
OF APARTMENT HOUSING

CHAPTER TWO

2.1 KEPPETIPOLA HOUSING SCHEME

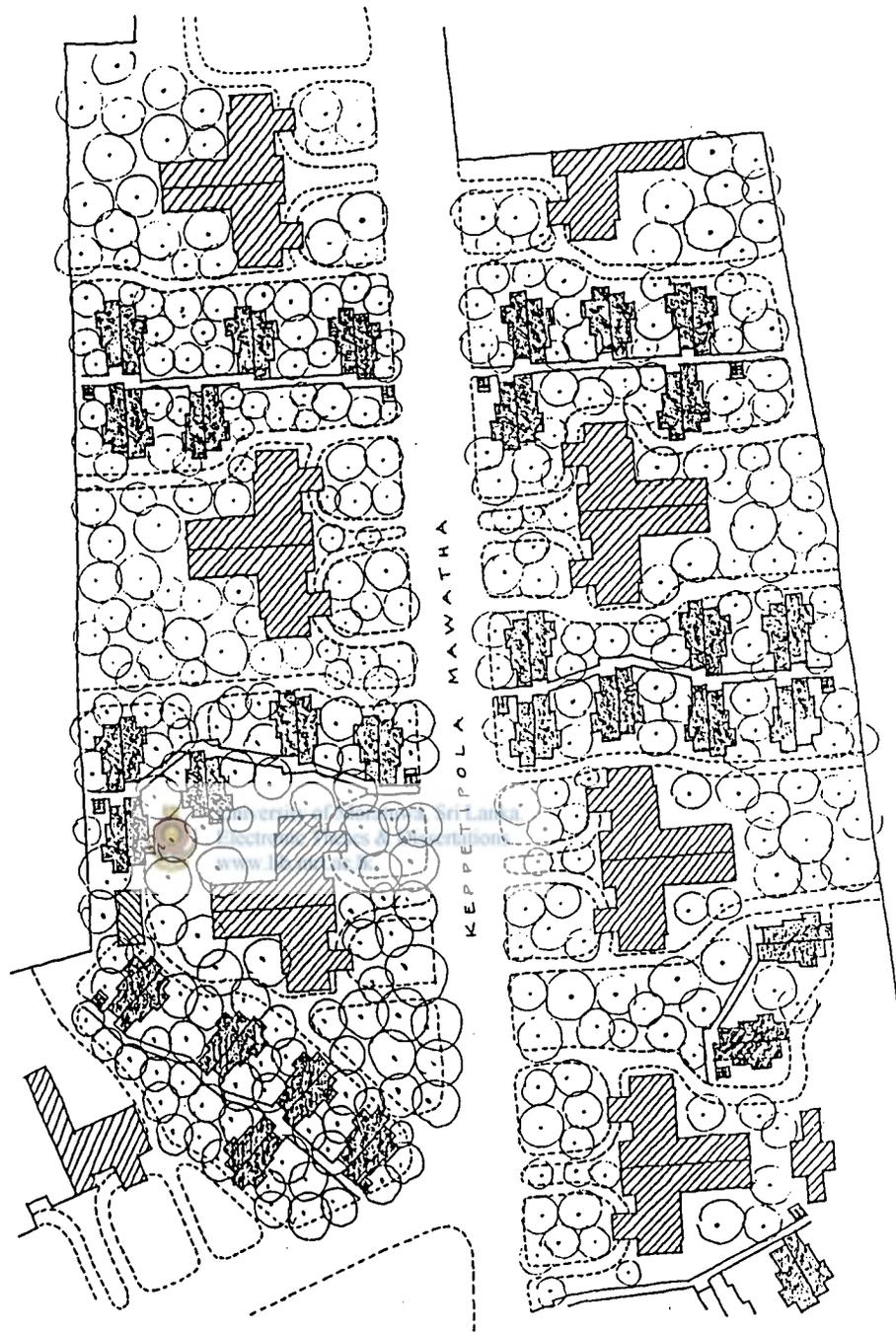### 2.1.1 LOCATIONAL BACKGROUND

Keppetipola housing scheme, normally known as Sammit flats were located within the most exclusive area Keppetipola Mawatha in Colombo 7, which originally was an area having colonial type Bungalows with large gardens. The summit flat was constructed in 1976 for non aligned summit conference and was intended to house the contingent of visiting international journalists. How ever the project was conceived much earlier to fulfil the needs for high density low rise housing for middle income government servants, with all the amenities such as shops and recreation. The nature of the site with its magnificent trees and old colonial bungalows required the use of labour intensive methods in order to cause the least amount of damage to the existing environment.

Layout

The location of the scheme was originally an exclusive residential area, green foliage with well laid out British colonial bungalows which were used by high ranking government officials. Some of the existing bungalows were also divided into individual units. Existing character of the place, the pattern of roads, lanes and open spaces had given special identity to this scheme.

This neighbourhood is designed in such a way to fulfil most of the requirements of the middle class occupants and rationalising the environmental problems and breaking it down into its smallest elements and confirm the traditional concepts by design (Table 01).

(Fig 8 – Layout of Keppettipola Housing scheme)

| TRADITIONAL SOLUTION	WORKED AT KEPPETIPOLA
Traditionally each dwelling is set within its own garden	Pathways off the **street** leading to an open terrace in front of each unit
Even in rural areas, the social status of each communal-unit is modestly maintained by showing a few items of **contemporary** furniture	The public areas of each unit is visual to a degree from the street, while maintaining maximum security
Each dwelling unit has a verandah, which serves as a space for greeting outsiders. The **Sala** or living room is a more private space for the family	A verandah is provided by the open terrace in front of each unit
A rear verandah serves as a work space and the kitchen is separate from the house. The toilet is in an out – house	Kitchen and service terrace at the rear of units. Toilets are stacked separately at the rear of the house
Men and women had separate private sleeping rooms	The sleeping areas are in the most private part of the unit on the upper floor and can be divided into two or three separate sleeping room
Separate service access to the rear of the house not seem from the front	High wall with a window for ventilation separates the living areas from the kitchen and service terraces at the rear
Cars are not left in the open	Lockable garages to be provided on rent and parking space in front of each block to be within vision of each basic unit
Formation of clustered units interspersed and hidden by thick foliage	Clustered units with common meeting spaces formed by open terraces and walkways preserving existing foliage
New roads are normally a development from existing footpaths	The existing road layout is maintained with new in-roads or branch roads to various blocks
A town or village contains dwelling of different periods	Existing bungalows to be conserved and converted to smaller units
Floor finishes are of coloured cement or terracotta tile, windows are placed across from each other, walls are plastered and painted white or samara	Coloured cement and terracotta floors, window openings are kept within economic dimensions with timber louvers in lieu of glass, walls are plastered or samara, kitchen have a workable pre-cast slab, brick parapets in lieu of steel balustrades, load bearing brick walls and pre-cast elements for economy of structure

Table – 01

The whole scheme consists of about forty four flats. These flats were located as clusters of four, five or seven. Each apartment consists of only four houses. One cluster a small single community the way they want to live.
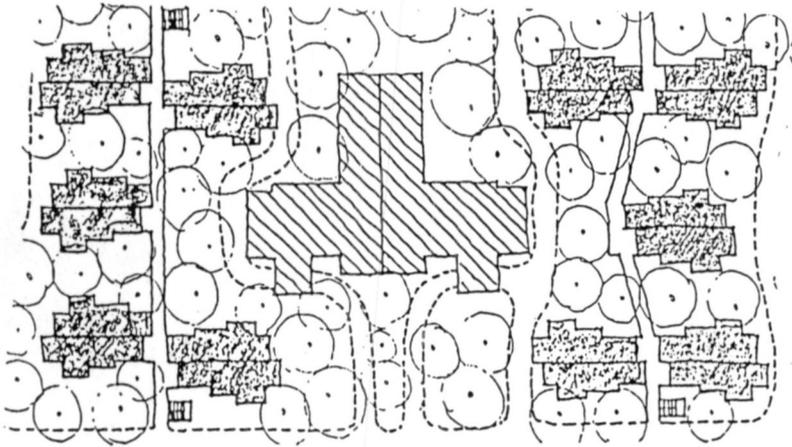
(Fig 9 - Forming a small community by a cluster)

The distinctive major entrance to the complex cannot be identified, but there is a major road Keppetipola Mawatha, which is running through the housing scheme thus dividing the scheme into two segments. The most significant factor is the high accessibility throughout a cluster. The arrangement of the layout exhibits the individuality of the occupants. Defined entrance for group of five or six apartments had created a territorial feeling among dwellers. In some clusters territoriality had been demarcated by solid boundary walls. Fair amount of large open spaces between apartments had created places for interaction among dwellers.
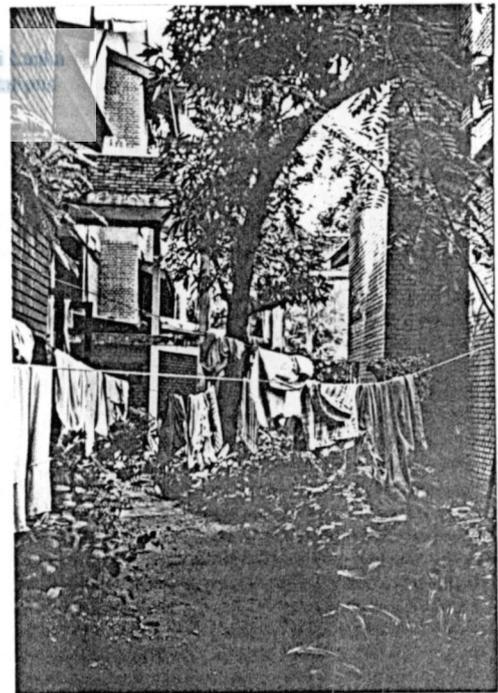
(Fig 10- Interaction through spaces between buildings)

2.1.2 HOUSING UNITS

When locating blocks in the scheme certain sensitivity had been given to the occupants' individuality. In cluster level, privacy had given from traffic. From the beginning houses were strongly separated from their common space and clustering around a semi-public space. Set back one unit from the other and the separation of units on the upper floor with an extension of the slab ensure a high degree of privacy.
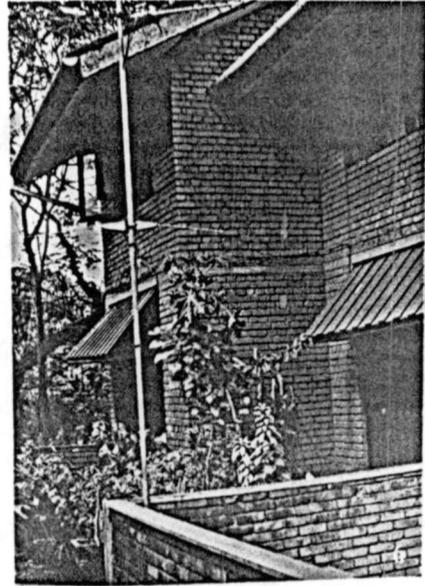
(Fig 11 – Maintaining privacy by set backing the housing units)

In Keppetipola scheme each basic unit is entered from an access balcony or street from which an opening leads to a small open private terrace. The series of spaces leads to a private space such as public transition area, entrance court together act as a series of separation from the main road. Having solid walls that are used to demarcate family territory further strengthens minimising social interaction. Distance between apartments, series of transitional spaces segregate occupant from one apartment to another and provide visual privacy.
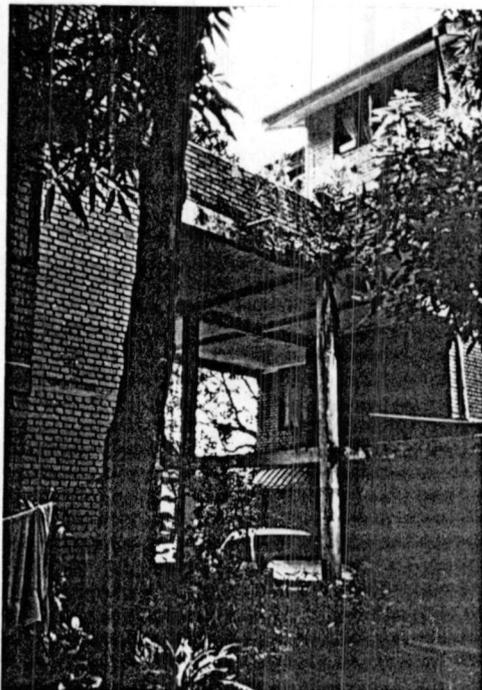
(Fig 12 – Transition through streets at upper level)

Each housing unit consists of two levels with utilising the given small space with maximum potential. Space has been well defined as public, semi-public and private. Ground floor consists of a entrance court, living room, dining, toilets, kitchen and servants toilets. The upper floor consists of two bedrooms and toilets. This creates personalization within the unit. Ground floor mainly acts as a public space and servicing areas and the upper level functions only as a private arèa.

1. Entrance Court
2. Verandah
3. Living
4. Dining
5. Kitchen
6. Bed room
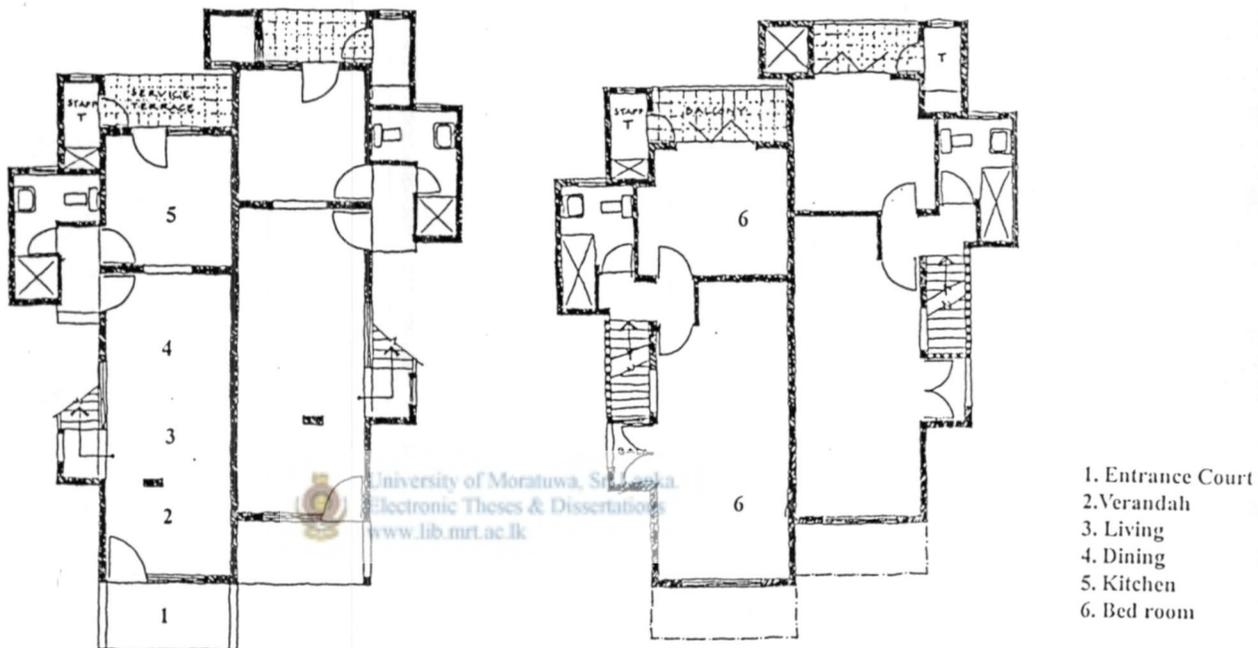
(Fig 13 – Sketch plan of Ground floor and Upper Floor)

Some of the units do not have front verandah as initially planned and the entire space was the living and dining area without any separation. For that purpose open terraces in front of the walkways are used.

(Fig 14 – Apartment unit without a front verandah)

29
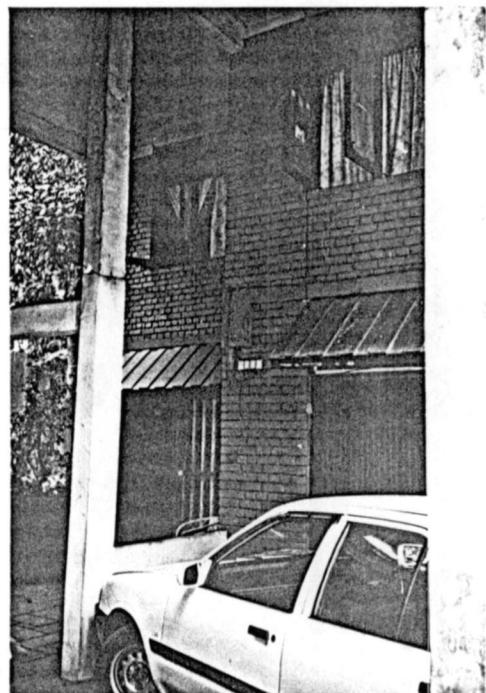
All the houses were enclosed with elaborate solid boundary wall strongly separating the outside world from the private domain. This ensures a high degree of privacy within the family territory. Doors and windows were positioned to ensure privacy for the occupants. In some instances privacy of the doors or windows were obtained by other devices such as projecting out walls.Different identities to the housing units were given by using exposed brick work, terra cotta decorative grills, honey comb brick work, concrete louvers etc.
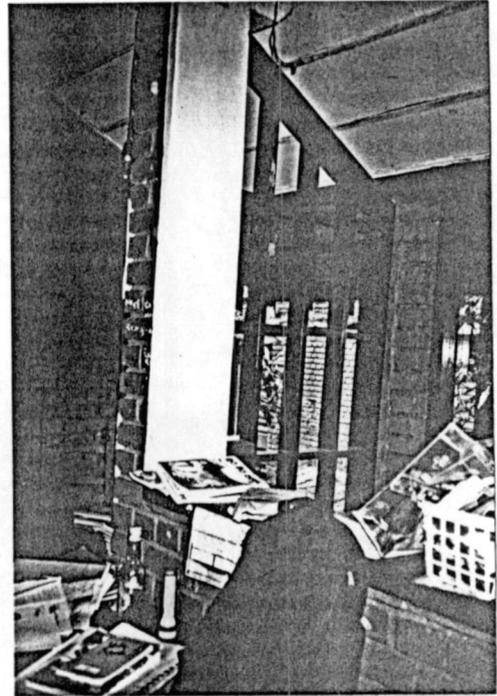
(Fig 15 – Interior of a upper floor bedroom with timber louvered windows)

The interior finishes are of plaster and exposed brickwork. Timber louvered windows have been used for light and ventilation. With these architectural detailing and the existing thick foliage demarcate territoriality and at the same time provide a atmosphere of homeliness even in the given small space. The entrance, internal links and the individual access to housing units are major elements to enhance the occupants a sense of belonging to the place. It gives an identity to each unit. Most of the occupants personalised the provided separate verandah and the front terrace area by planting and keeping pots, at the same time this reflects clear identity to each unit.

2.1.3 THREE DIMENSIONAL COMPOSITION

The main intention of this scheme is to **Plant more trees in the midst of existing trees**. Thus the slender tall form of the block almost blends into trees from a distance. Upper level circulation paths were open air bridges with walkways twisting between trees and widening in front of the entrance to each units. These widened areas on the

walkway act as open air meeting places and also it will create interaction among dwellers at the upper level. On the ground the walkway structures act as overhang protecting the lobby areas below. These spaces are used as parking areas for individuals.

The uncovered walkways at upper level are wonderful as they are intended to allow the upper level residents to feel as they were living on the ground. In fact it might even be said that it is nicer than living at ground level.
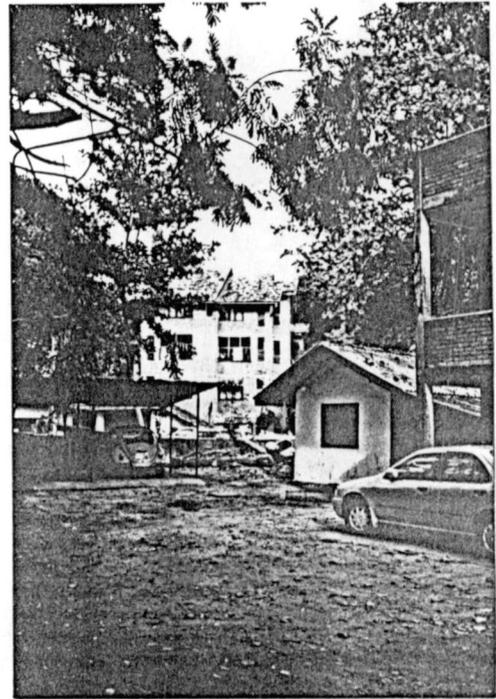
(Fig 16 – Slender form of the buildings merge with the existing trees)
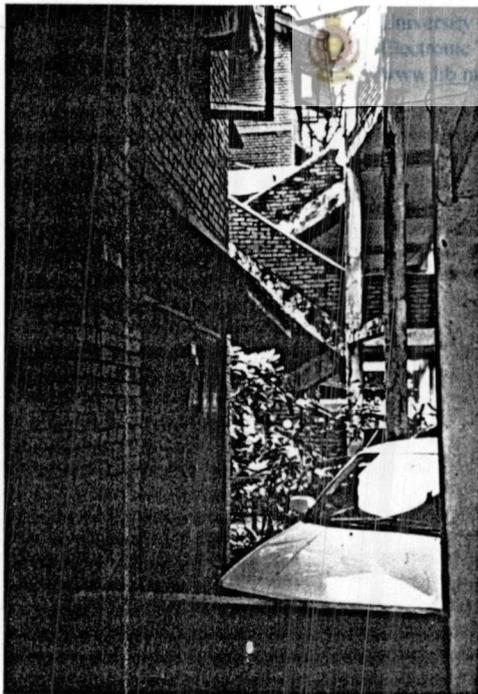
(Fig 17 – Exposed stairways leading to the upper level.)

Apart from the ground floor at the third floor level every cluster has interconnected bridges, which act as internal street with varying width. The entrance to the second floor units are from these structures carried throughout the ground floor as well under the bridges, there are open walkways to connect the cluster. Setting back one unit from the other and breaking the roof into small segments create individuality among units and also it gave separate identity and a dynamic quality to the apartment complex.

2.1.3   USER MODIFICATIONS

When it comes to the mass housing it ignored the individuality and their own aspirations, in dictating a uniform life style. So they modify the given environment to satisfy their requirements. In this scheme lesser modification can be visible. Interior modifications such as replacement of doors and windows, change in the paving pattern is a common phenomena. Partitioning had been done to get the maximum usage of space. Duct spaces were utilised as stores.

(Fig 18 – Duct space as a store)

In some apartment unit dwellers had changed their colours and arranged flower pots to express a different identity to that unit. Ground level occupants expanded their boundaries and encroached lands to their units. In some units this space is used as a kitchen and in some houses it is used as garages.
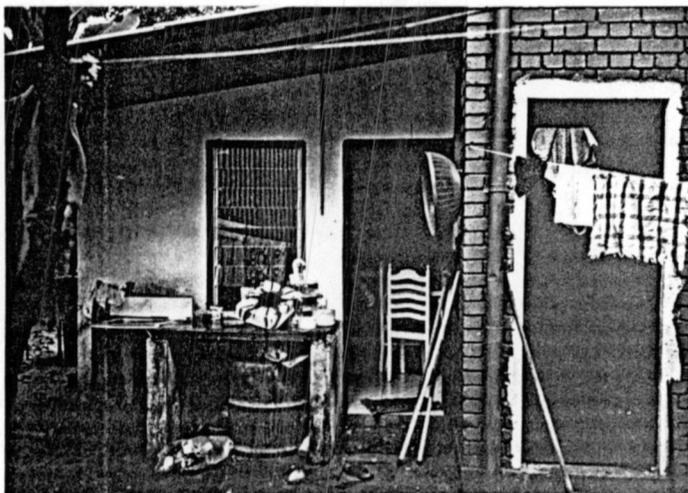
(Fig   19   –   Latest attachment   –   Kitchen area)

Less damage had been done to the built facades of the blocks because this scheme was more concerned about users' individuality.

(Fig 20 – Interior of the extended kitchen)
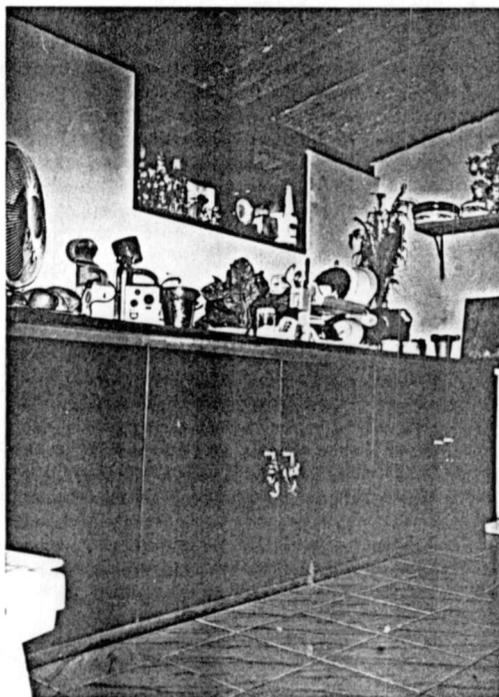
2.2. SOYZAPURA HOUSING SCHEME

2.2.1 LOCATIONAL BACKGROUND

Soyzapura or the Rathmalana housing complex was located in Angulana area a small junction between Rathmalana Airport and Moratuwa town. This scheme is very close to the Galle road and is just separated by a commercial strip running along the main road. This scheme was constructed by the government in the second half of the 1970's to fulfil the housing accommodation needs of the government servants. Basically this scheme provided accommodation facilities to high ranking officers as well as the other staff officers in the government service who are from that particular region.

This has an enormous impact over the relationships of the inhabitants with their surroundings have been proof that this scheme has the maximum demand for housing in the country from its inception. Though the occupants have been restricted by certain bye – laws, they have already sold some of the apartments to the private users. This is being continued up to now. As a result, at present this scheme is not exclusively meant for the government servants.

Layout

Layout of the scheme is a mix of different cluster types. Entrance to the scheme from Galle road is by Soyzapura road, which had then sub divided into by lanes and housing blocks were located on both side of the road. In some places these lanes were sub divided forming clusters around a central courtyard and other blocks were located parallels to the Soyzapura road mixing with the commercial activities.

(Fig 21 – Layout Plan – Soyzapura Housing Scheme)

From the beginning of this scheme two different types of houses were constructed. They were four storied walk up apartments and two storied detached houses. Due to the Socio – Economic changes during the past it has resulted in linear development along the Galle road. With various activities such as commercial industrial and residential etc in an uncontrolled manner. This has created highly crowded situation and tolerable densities of buildings at various locations where space was available.

In this regard the authorities have worked out new layout plans to develop the scheme. This has resulted in the change of buildings, their appearance and the pattern of open space. Due to stage construction large variety can be identified among the housing blocks.

1. The first plan was prepared in 1970 with more open spaces and A, B, C, D, E, F, G blocks of large concentrated and intiovated flats within it. A commercial zone is just located closer to the Galle road. A community centre, a play ground and other amenities are located within the site in 1997.

2. Existing situation is further improved with the commercial section and the construction of the block of apartments in the spaces in between.

3. The proposed situation seem to be very congested with more housing and further expansion of the commercial zone.

2.2.2. HOUSING UNITS

In Soyzapura housing scheme there were four types of apartments, which can be categorised into two broad areas by considering the age of their construction. That is early construction and late construction. The earlier constructed apartments have three different types by considering the age of their construction.
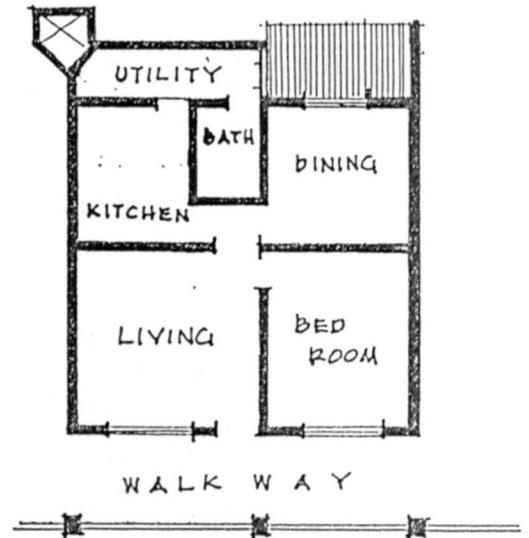
a) Apartment Type – A

This is a block of four storey apartment which faces to an internal courtyard through a common balcony. This is served with two common stairs at each end. These units consist of a single Bedroom, Living room Dining room, Kitchen and Toilet.
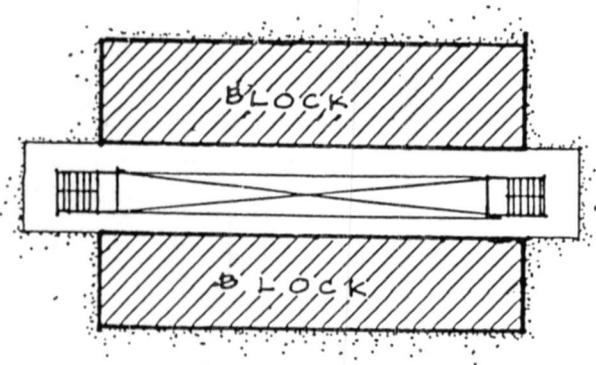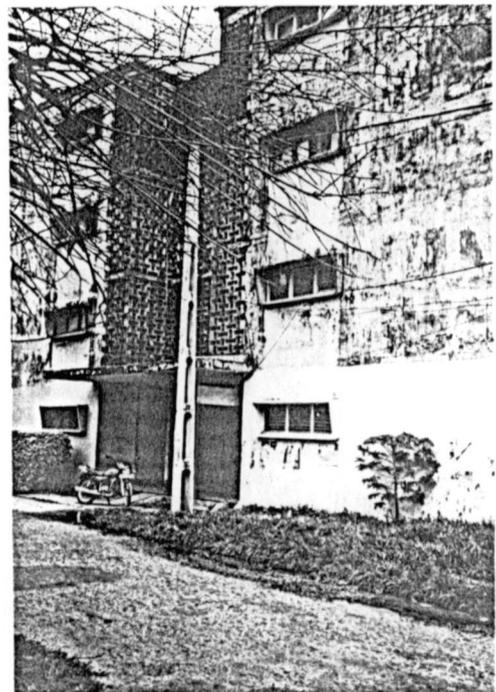
(Fig 22 – Sketch Layout Plan of the apartment Type A)

(Fig 23 – Sketch Plan – Apartment Type A)

This type of apartment seems to be very tight and the most effective apartment in the scheme. The Living and Dining rooms in this apartment in the exactly a square room. Where the circulation is shifted aside to form an alcove.

(Fig 24 – Exterior view of the apartment Type A)

37

The only bedroom, which is provided in this unit, seems to be adequate for a family and the Kitchen is too small. Even though toilet of this type seems to be somewhat inconvenient. The layout of the unit has generated a very sensitive interfamily relationship among the dwellers. The housing unit has the flexibility of function as preferred by the occupants at different times.

(Fig 25 – Common access balcony in Type A)

The easy accessibility in ground levels the occupants get the maximum usage of the particular courtyard in the middle. Most of the dwellers tend to grow some plants in the courtyard or to use it for the purpose of drying clothes or parking vehicles. In the upper level dwellers of these apartments feel very inconvenient as they do not have certain essential requirements in their dwellings. The upper level houses were located as rows along a corridor, lack of privacy can be identified in this scheme. Even though they don't have a garden to grow plants they had utilized their front balcony to grow plants and get a homely appearance to their units.

b) Apartment Type – B

These apartments are overlooking the road in front. Eight numbers of dwelling units are served by a single stairway, because of this the dwellers enjoy more privacy than type **A** block. The dwelling unit consists of a Living area, a Bedroom, a Dining room, a Kitchen and a Toilet.

This is the smallest type of apartment in this complex. In these units a common Living and dining area has been provided, which has rectangular shape. The only given bedroom is too small. The Kitchen is larger than expected.
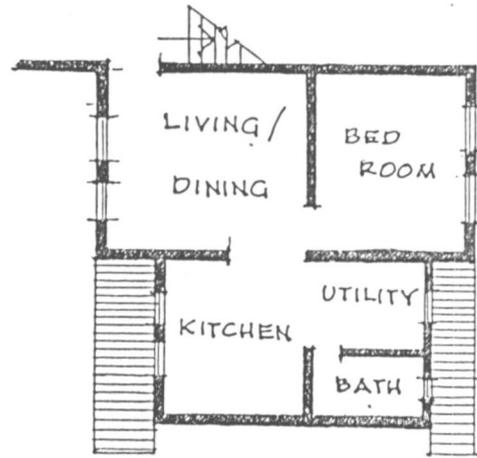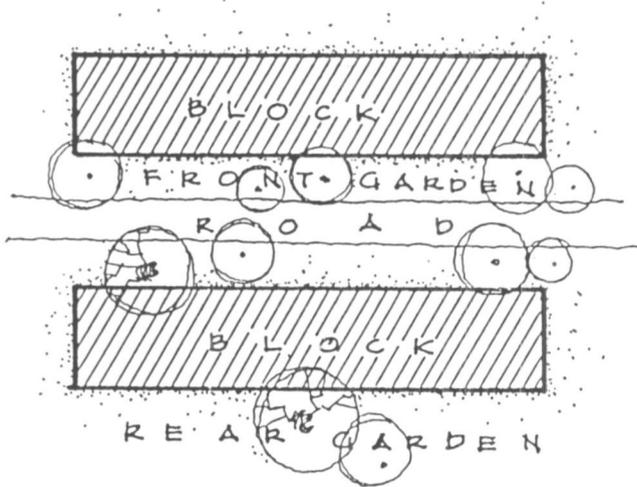
(Fig 26 – Sketch Layout Plan of the apartment Type B)

(Fig 27 – Sketch Plan – Apartment Type B)

The layout of the apartment blocks create lack of privacy which is in line with the other make some what inconvenient because inside of the houses can be visible from apartment at the other side of the road.
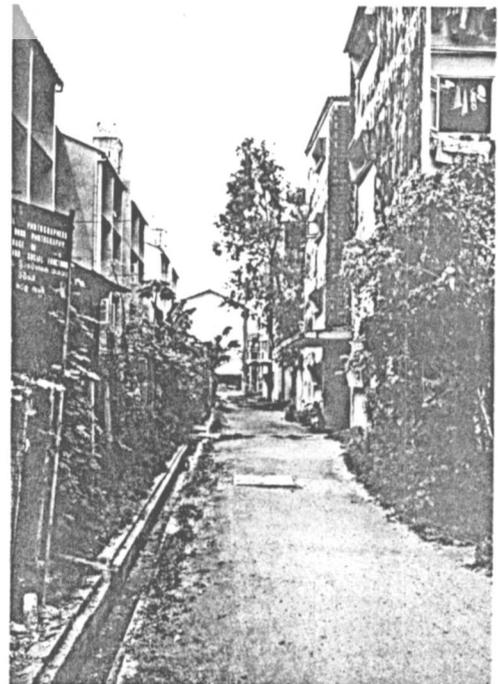
(Fig 28 – Exterior view – Apartment Type B)

c) Apartment Type – C

In this type eight dwellings were served by a single stairway. But these units are comparatively larger and have two bedrooms, a common Living Dining area, a Kitchen, Utility and the Toilets. This type is the largest unit in this complex.

The given two bedrooms seem to be very comfortable to the lifestyle of most of them. Kitchen is too large where some of occupants use this as a Dining. Occupants in the upper floors levels face similar issues as in the other type of units.
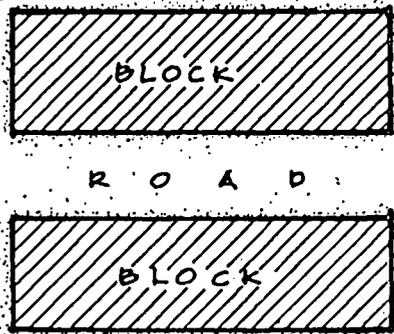
(Fig 29 – Sketch Layout Plan of the apartment Type C)
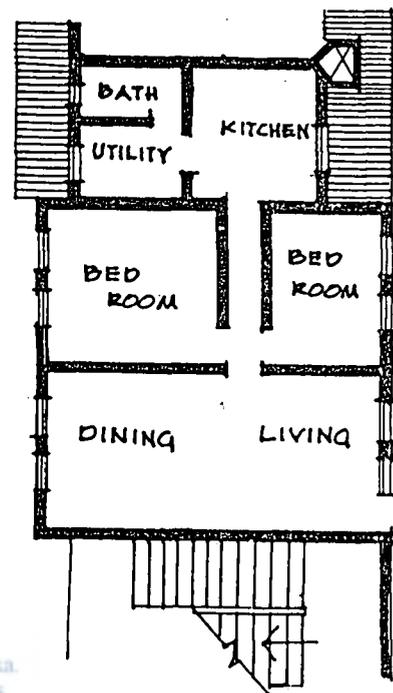
(Fig 30 – Sketch Plan – Apartment Type C)

d) Apartment Type – D

These apartments were very recently constructed and facing the road near by. Eight units were served by a single stairway.
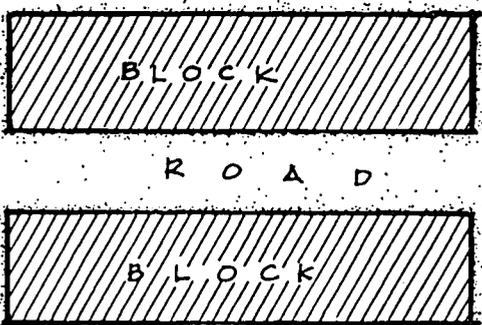
(Fig 31 – Sketch Layout Plan of the apartment Type D)
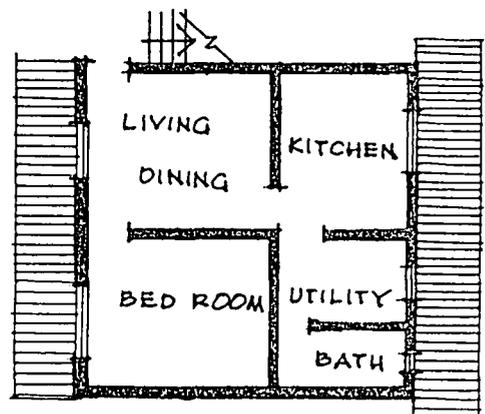
(Fig 32 – Sketch Plan – Apartment Type D)

One unit comprises of two bedrooms, common Living and Dining area, a large Kitchen, Utility and a bathroom. In ground floor apartments there was no space in between the roads and the front door of the houses. When door is open everything is visible to the road. Bedrooms are equal in site, which resulted in less hierarchy of spaces within the housing units. Kitchen is too large and in some houses this was converted to a bedroom.

(Fig 33 – Exterior view – Apartment Type D)

2.2.3. THREE DIMENTIONAL COMPOSITION

When considering the 3D composition most of the blocks stand individually. There aren't any inter-links between blocks. In the layout of the apartment blocks which is in line with others make some what inconvenient, because the inside of the houses can be seen from the apartments at the other side of the road. Some of the well maintained courtyards in between the parallel blocks act as visual barriers among blocks.
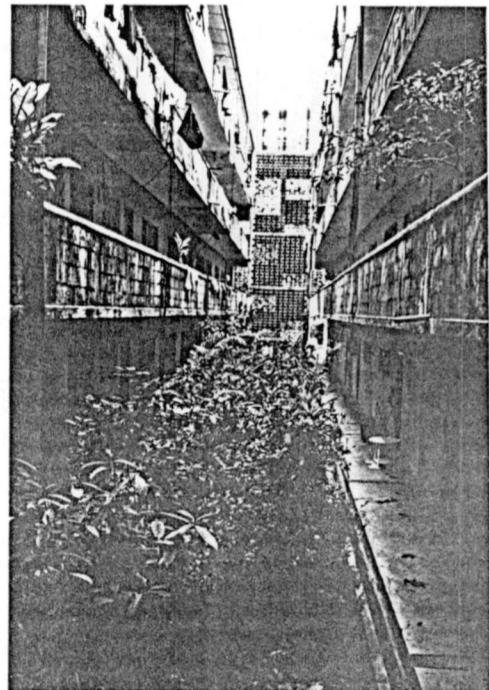
(Fig 34 – A well maintain courtyard act as a visual barrier)

41

There may be a great difference between the old blocks and new blocks, built in facade of the old apartments with honey comb block work and small openings gave a bulkness to the building. Later additions were in contrast to the old ones with more openings and shadings by vertical devices express a very light weight quality. Trees grown up between blocks reduce the rigidity of the blocks and the spaces in between blocks develop an interaction among neighbours.
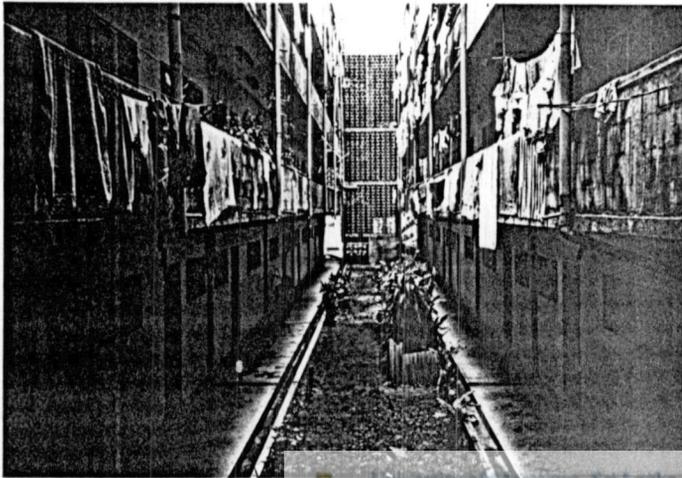
(Fig 35 —A neglected courtyard - violate visual privacy)

2.2.4 USER MODIFICATIONS

In this scheme great amount of interior and exterior modifications can be visible. Most of the housing units were identical, to personalized their units and to create a contrast among other units dwellers had modified their given environment in numerous ways. Such as paint in different colours, keeping flowerpots or troughs change the position and the design of doors and windows etc. can be identified as exterior modifications.

(Fig 36 – Change colour of units to express identity)
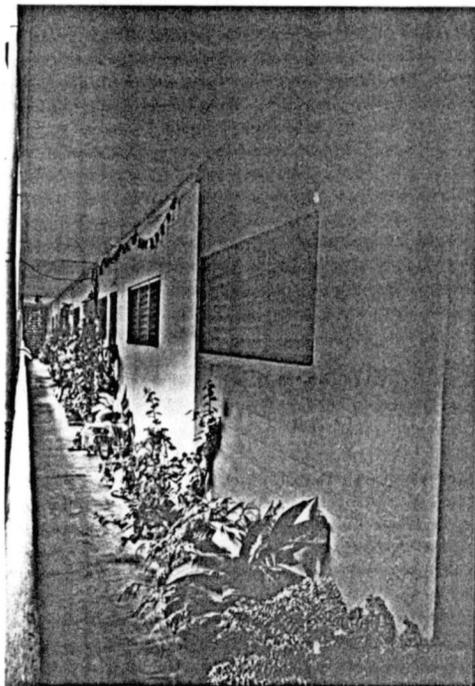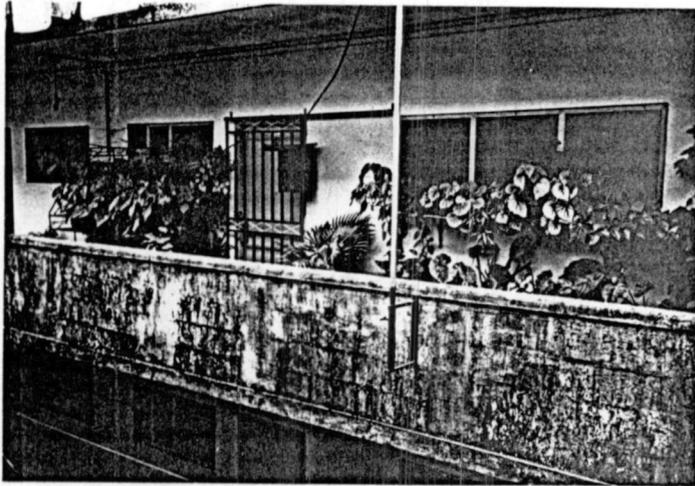
(Fig 37 – Privacy and identity in different manners)

When considering the modification at the upper level less modifications can be seen. Most of the housing units at the block **A** dwellers have changed the position of doors and windows to ensure the privacy in some units decorative grill work were added to the front door for security purposes.

Then Dining space converted to a bedroom and changes in the toilets can be visible. Windows at the rear side of the units were used as frying grills to drying their ingredients.

(Fig 38 – Projected out windows to drying the objects)
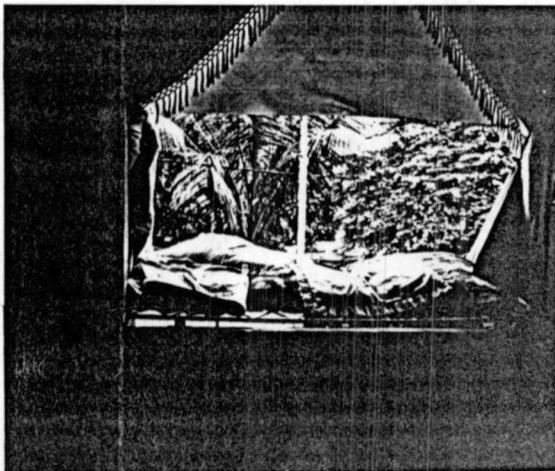
(Fig 39 – Privacy in a haphazard way)

Openings in the utility spaces were covered with bricks for maintain privacy, in some instances small openings were kept to get the lightening to the interior. Interior partitions were done to get the maximum usage of space.

(Fig 40 – By interior partition utilizing the maximum space)
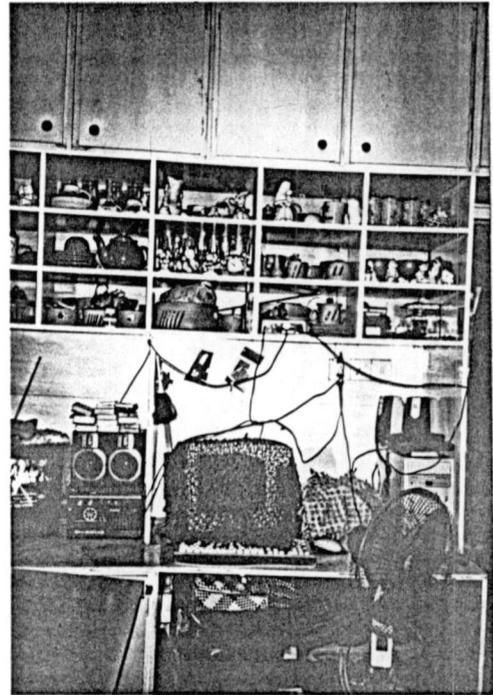
The ground level dwellers have encroached the lands near by and used as garages, front verandahs or spaces for commercial activities. To demarcate the territory at ground level some of the occupants had constructed boundary walls, entrance porches and even foliage has been used.

(Fig 41 – Entrance porches – Way of expressing identity)

In Type **B** block dwellers had demarcated territory to their blocks by having steel gates at the stair case front. So the outsiders will not permit to enter into their blocks.

(Fig 42- Territoriality by entrance gate)

Identity to the housing units was given
by changing the materials, textures at the
houses. In the upper level the projected
slab space was taken into the unit by a
steel grillwork or galvanized iron (G.I)
sheets with a small opening in it. In the
interiors the utility space which was
provided with the toilet had been
converted into a kitchen. In upper most
level the volume beneath the roof pitch
has modified into a attic space over
dining area which is used as a space for
sleeping or store purposes.
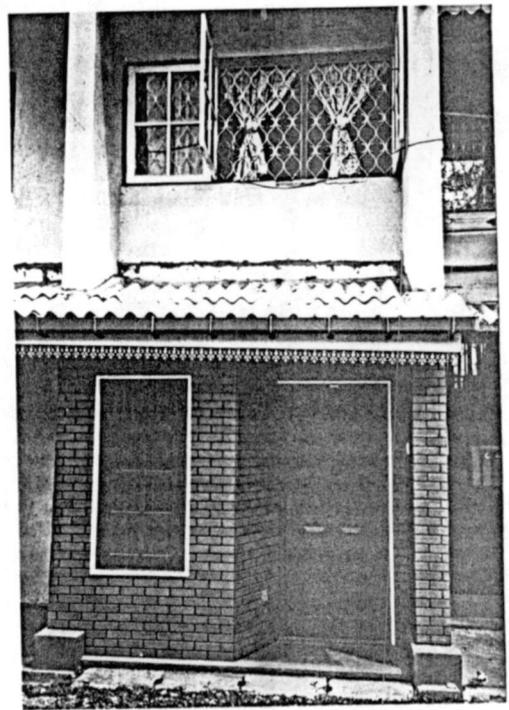
(Fig 43 – identity by changing wall
materials)

(Fig 44 – extended spaces in upper level
–Type B apartment)

Another way of expressing identity is parking vehicle in front of the housing unit. This is common at ground level. For this purpose permanent or temporary structures has been constructed.
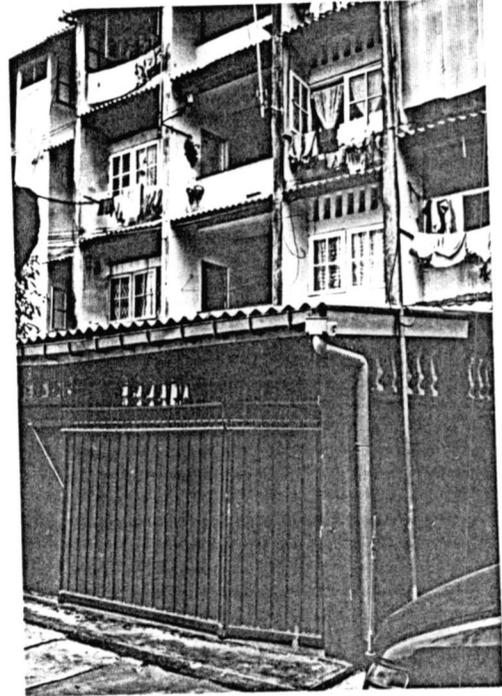
(Fig 45 – permanent structures for garages)

(Fig 46 – Temporary structures for garages)

2.3 MANNING TOWN HOUSING SCHEME

2.3.1 LOCATIONAL BACKGROUND

Manning town apartment complex was located in Elvitigala Mawatha in close proximity to the Registration of Motor Vehicle Department. Thus scheme was spread on both sides of the Elvitigala Mawatha, in a busy environment with less greener spaces. This scheme was constructed by the government in 1990 to fulfil the housing needs of government servants. Introvert character of the scheme had created less impact on the life styles of the occupants from the highly congested environment of this area.

Layout

When considering the layout of this scheme from Elvitigala Mawatha by roads created through the scheme namely, Gajaba road, Mangala road and Matha road to create accessibility through the scheme.

Forty blocks of four type different types can be identified here. Those blocks were located in a different manner which will create were flexibility to the scheme. When locating blocks individuality of the dwellers were concerned between 15 – 20 blocks were clustered around a courtyard. Front façade of the blocks faced the road and rear façade facing the courtyard with projected balconies.

Special character of this layout is the spatial relationship between blocks, courtyard of different clusters were linked through linear pathways so that it would create a serial vision through the whole apartment complex.
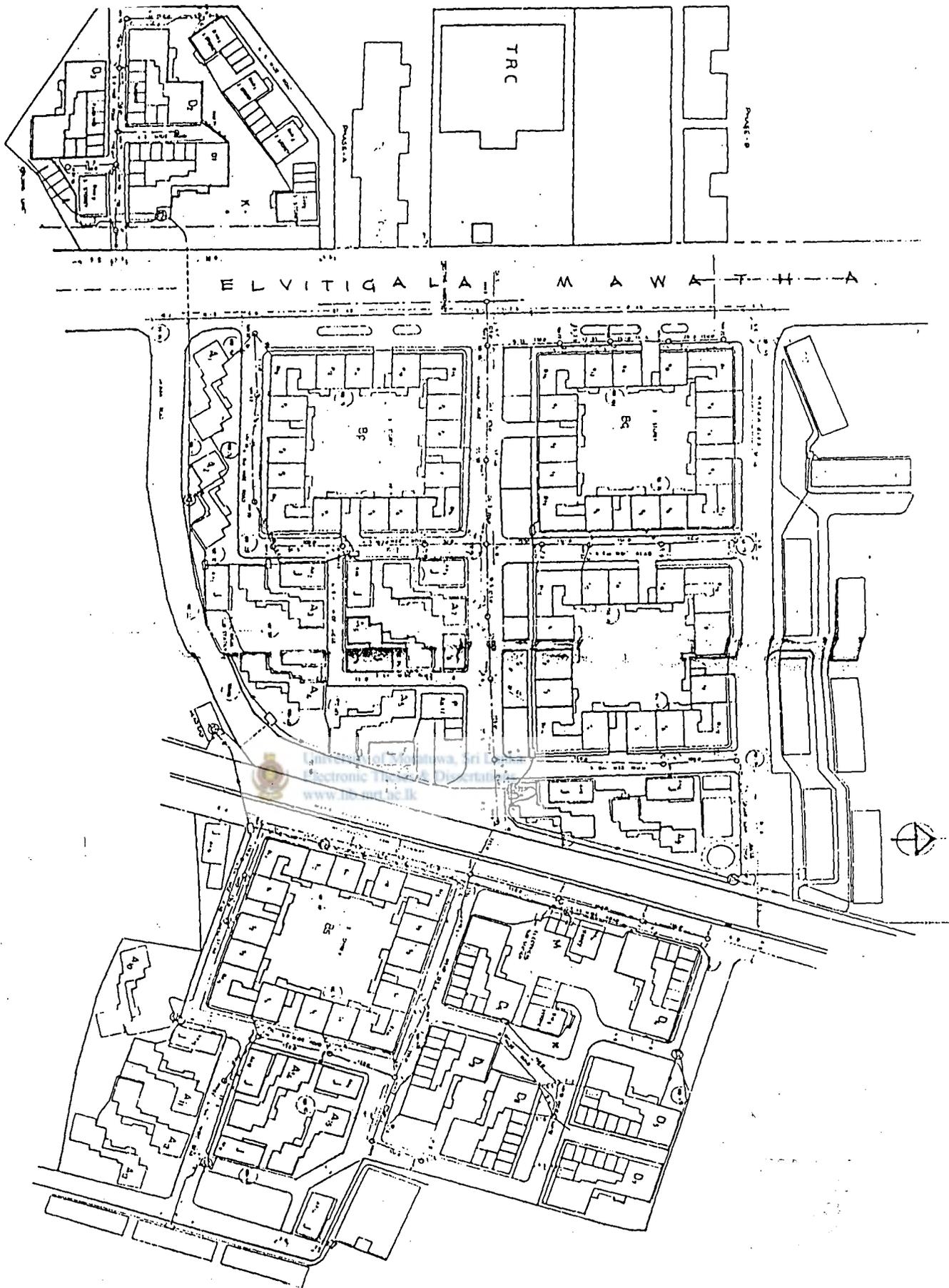
(Fig 47 – Layout Plan – Manning Town Housing Scheme)

48

Enclosed spaces created by clusters were used as children's play areas, which is visible to all the blocks in that cluster and at the same time this space is utilised for drying clothes and as a formal gathering space of the dwellers
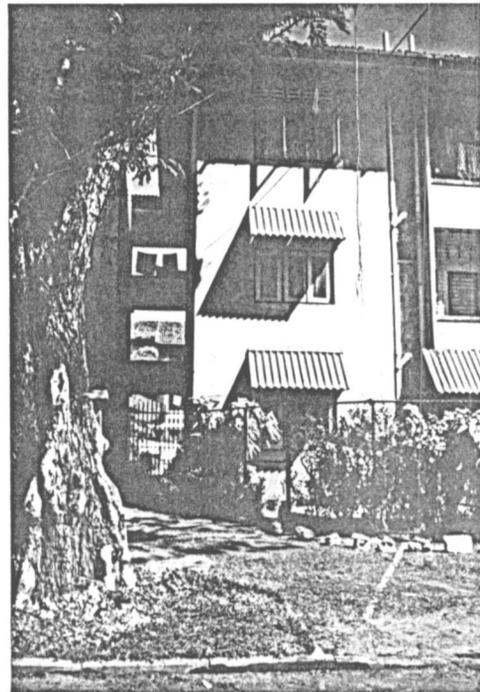
(Fig 48 – Visions through blocks)

2.3.2. HOUSING UNITS

When considering the housing units there were four different types which can be identified. They are type A, AX, B and BX. These are catagorized according to the changes in square feet area which range from 800 sqft – 1000 sqft. Front verandah, Living Dining area two Bedrooms, Pantry and a Bathroom can be identified as interior space of a typical house. In these units more balcony spaces were provided for visual interaction between units. In some apartment blocks single stairway at one level serves only for one housing unit. It will provide more privacy for dwellers and a homely appearance for the unit. In some apartment types stairway serve two blocks at the same landing level.
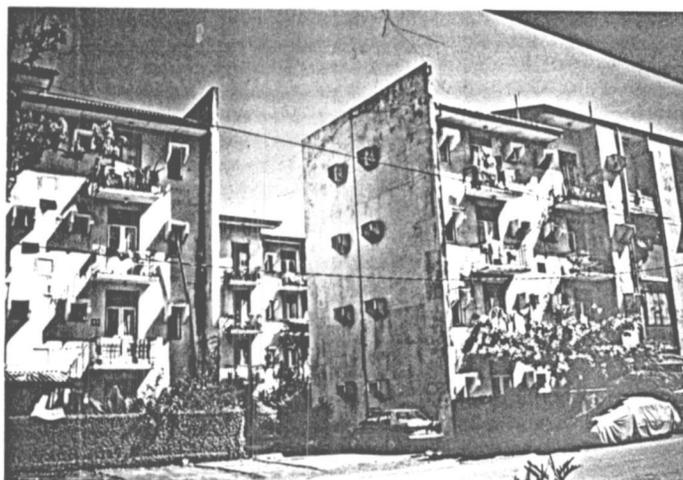
(Fig 49 – Private Balcony for visual interaction)

In some blocks stairways direct to the housing units were personalised by keeping flower pots though it reduces the width of the access way, but express their identify at the entrance level.

(Fig 50- Personalizing the stairs leading to the upper level)

a) Type – A

These units consist of two bedroom, pantry and kitchen, living, dining, toilets, balconies and servants toilets. These units include in blocks with four floors. Located in a scattered manner, one staircase serve for two units.
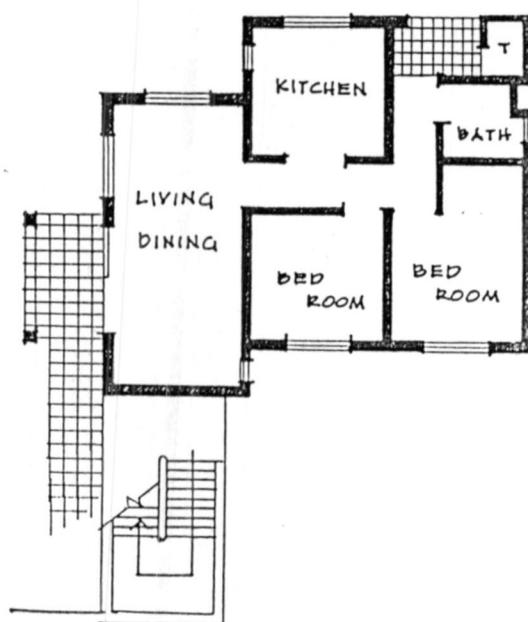
(Fig 51 – Sketch Plan Type A)

b) Type – AX

These were also located in a dispersed manner in between type A blocks. Two storied blocks consist with two housing units. Staircase serves one unit at a landing level. This unit also consists with living dining, two bedrooms, pantry, bathroom and a servant toilet.
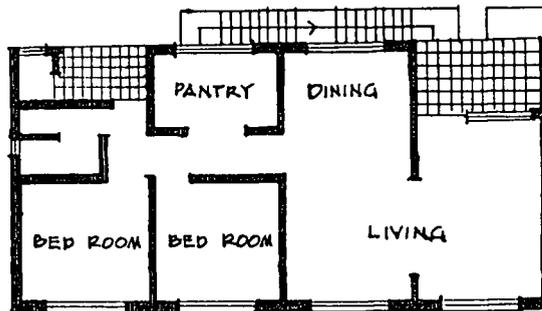
(Fig 52 – Sketch Plan Type AX)

c) Type – B

Blocks were clustered around a common ground and vertically group up to four stories and some are up to three stories. This type consists with the space requirements above and designed as twin units.
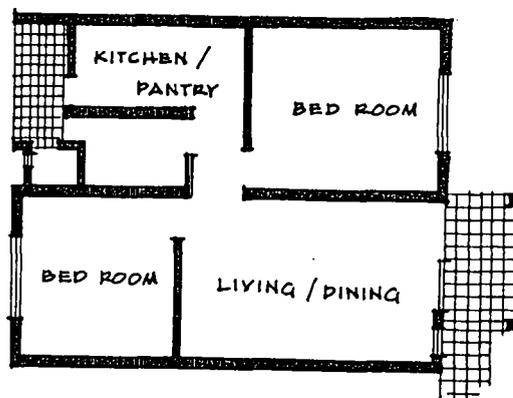
(Fig 53 – Sketch Plan Type B)

d) Type - BX

These blocks define the edges of the cluster compare to other types larger in floor area. Stairway serves a one unit at a landing level.
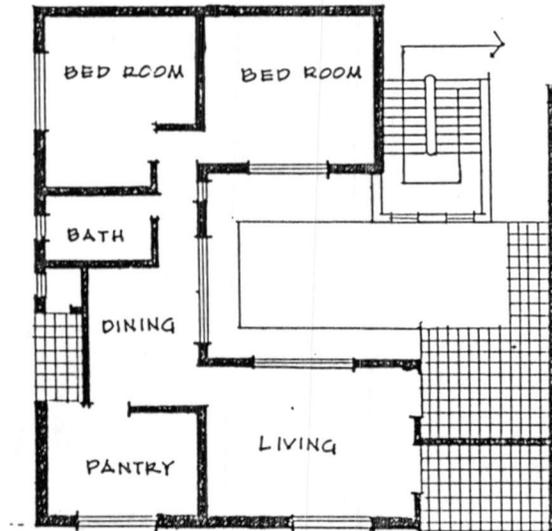
(Fig 54 – Sketch Plan Type BX)

There is no variety of housing type in a one block, it caters only for one type plan. Interactions among the dwellers in a block is minimised due to the arrangement of housing units. The only place, which would promote interaction is the stairway. In landing levels the housing units were fully open to the outside.
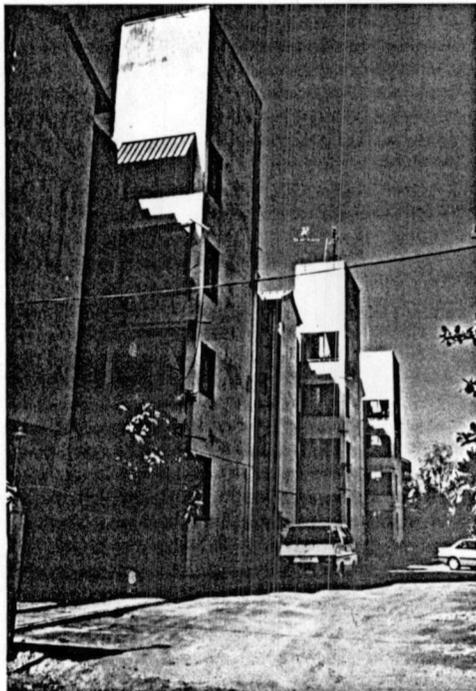
(Fig 55 – Visual Links through Landings)

2.3.3. THREE DIMENTIONAL COMPOSITION

Blocks were stands vertically like towers linked by bridges. So the block in a cluster act as a single unit. Different identities to the blocks were given by adding concrete grid works to the front facade and changes in colours. Different shading devices create contrast among different blocks.

(Fig 56 – Identity to the blocks through grid works and positioning in a different manner)

When considering the location of block, they were located in different manner, so the positioning of block given a dynamic appearance to the complex. The most significant character of the 3D form is the entry to the blocks was well defined by an entrance lobby area, which will promote sociability among dwellers.
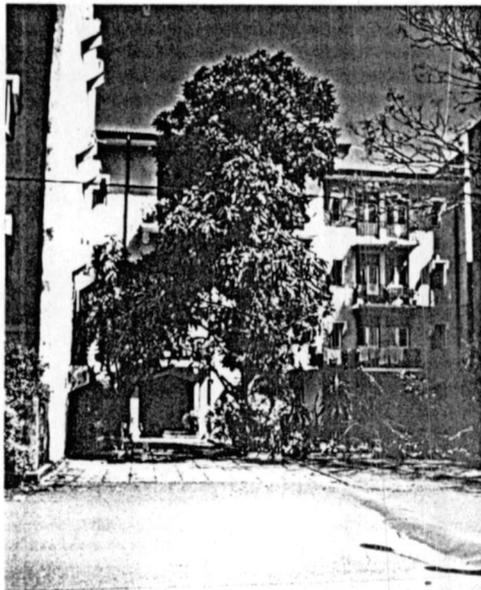
(Fig 57 – Entrance Lobby to promote Sociability)

2.3.4.   USER MODIFICATIONS

In this apartment complex many adaptations were done to individual housing units for personalization. In many housing units front verandahs were enclosed by grill works and define the entry to the housing unit and at the same time demarcate territory.

(Fig 58 – Enclosed front verandahas – Way of defining territoriality)

Balconies, which projected out from the Living rooms and bedrooms, were taken into the housing units in order to get the maximum usage of the space. In some houses these spaces were utilised as shrine rooms, stores and cupboards.
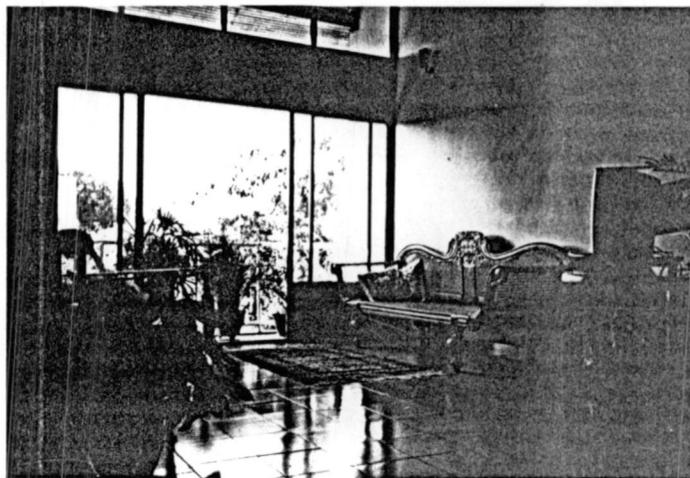
(Fig 59 – Extended Living areas by encroaching the Balcony areas)
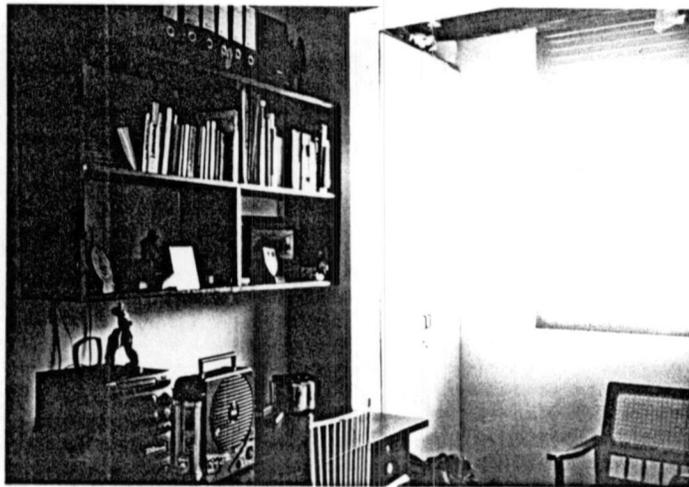
(Fig 60 – Covered Balcony areas utilized as cupboards)

In some housing units dwellers had added decorative front door, changes in flooring materials, colours of the interior as well as the exterior of the units to gain a different identity. Some houses, wire cur brick works were added to the front façade. In some block dwellers got separate parking lots for their unit and some blocks do not get such places. As a remedial measure dwellers had built temporary structures for the parking vehicles. At the ground level dwellers had encroached their front yard and constructed temporary huts for garages.
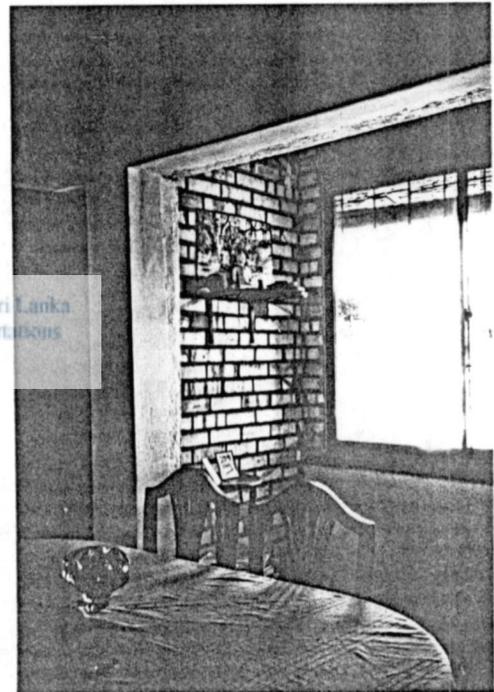
(Fig 61 – Shrine room function in the part of the covered front verandah)

Most of the modifications are visible at levels one to lack of ground space they try to create greener areas at upper level, for that purpose balcony spaces were used to grow foliages. In some apartments these balcony spaces were covered and used as utility spaces or cloth drying areas.

In the ground level dwellers encroached near by lands and demarcated territories using wire mesh partitions. Some places well defined entrances were created by constructing arches at ground level to express their individually and identity in different ways.
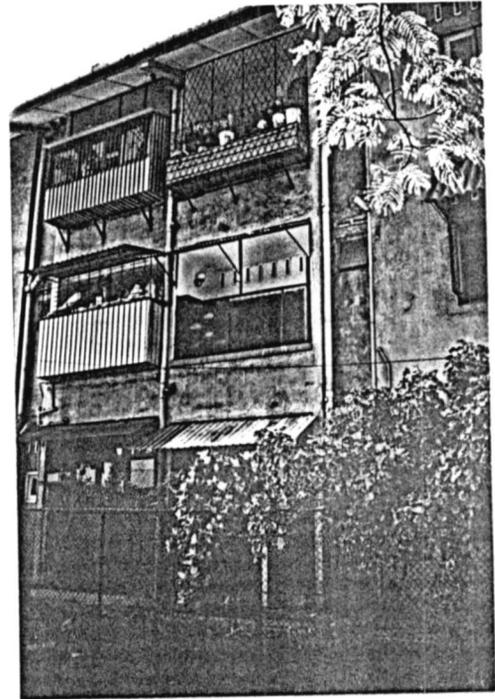
(Fig 62 – Jut out areas for utility spaces)

(Fig 63 – Modification in rear side of the ground level housing units to express privacy identity and territoriality)

CHAPTER THREE

COMPARATIVE ANALYSIS OF MODIFICATIONS IN APARTMENTS FOR USER PERSONALIZATION

CHAPTER THREE

COMPARATIVE ANALYSIS OF MODIFICATION IN APARTMENTS FOR USER PERSONALIZATION

In the case studies discussed in detail about the locational background, layouts, apartment units, 3D form and the modifications done by the users in the selected housing schemes. In this chapter, comparisons are made in between the selected examples and analysis is done on how dwellers had modified their given environments, for personalization. Here the modifications were discussed in relating to the impact of location, layouts, housing units and 3D compositions, in the context of achieving privacy, territoriality, locality and identity.

3.1 IMPACT OF LOCATION

Soyzapura, Keppetipola and Manning Town housing schemes were occupied by significant primary residential localities with varying characteristics. Due to the locational background these schemes depict distinctive contrast to each other. For user personalization the layout has a great impact on the apartment complex. From the busy environment certain friction has been created to the occupants in the Soyzapura and Manning Town housing scheme. Due to the industrialization of Rathmalana area the commercial activities had crept into the housing scheme, which is prominent than other two schemes. The high accessibility and commercial activities encouraged more outsiders enter into the scheme for day today needs, therefore it will violates the privacy of occupants. Due to industrialization and to cater the growing population, this scheme was developed in many stages, and this has resulted disorder within the scheme.

The Manning Town housing scheme is mingled with the existing community, which is either middle income or upper middle income group. So there is a harmony with the neighbouring community. Hence it will reduce impact from the surrounding. Social problem of this nature is minimized in Keppetipola scheme, as it occupies rich

residential setting in the vicinity. The location mostly consists of colonial houses occupied by upper middle income group, which is much similar to the social class in the scheme. This homogeneity has minimized the problems between neighbours compared to other two schemes. So that demarcation of territories from the surrounding seems less important here, and it is personalized within the given environment.

3.2 HOUSING LAYOUT AND UNITS

a) Layout

The layout pattern of the apartment blocks has certain contribution for user personalization. The design of layout attempt to maintain the privacy, identity and territoriality of the occupants and personalize it among other schemes. In privacy layout pattern of the blocks, their orientation distance between blocks and accessibility becomes significant attributes.

When considering Soyzapura housing scheme, blocks were rigid, parallel and located at close proximity to each other. So it disturbs the visual privacy. In most cases courtyards were created in between blocks to maintain visual privacy. In Manning Town housing scheme, blocks were clustered in a formal manner around a central courtyard. So this will protect the privacy of neighbours, informality and the reasonable distance between blocks in the Keppetipola scheme protect the visual privacy of the occupants. This has been strengthened to a considerable extent through landscaping.

Layout pattern also has a certain effect on providing an overall identity to the scheme. It is difficult to give an identity to the Soyzapura housing scheme due to monotonous character of the layout pattern. Informality of the blocks locating in between existing bungalows gives a different identity to the layout of the Keppetipola scheme. Formal clustering system of the blocks and linkages in courtyards through access ways in Manning Town layout express the identity in a different manner.

Accessibility is also contributes to express identity. Here the character and nature of the public, semi-public and private areas become significant aspects. In Soyzapura apartment one may find it very difficult to identify one block from the other. In this scheme there is no proper demarcation between public, semi-public and private areas. Keppetipola apartments the public street, semi-public garden spaces have a variety in their character, as different occupants had modified these areas throught various means, specially the garden spaces of different clusters of blocks are contrast to each other. In most cases the occupants have given various identities through different methods of landscaping. In Manning Town housing scheme clusters had created an enclosure and the open void are linked by access paths.

When considering the territoriality in layout of Keppetipola scheme, the entrance which leads to the clusters were demarcated by solid boundary walls, to demarcate territory for a particular cluster. In Soyzapura apartment territory is demarcated by a commercial belt surrounding the scheme.

b) Housing Units

Most of the modification for personalization can be visible in apartment units for achieving the psychological needs of the occupants, such as privacy, territoriality and identity. The location of stairways, common access balconies, positioning of housing units has a certain impact on privacy.

The poor location of housing units in Soyzapura housing scheme disregard the privacy of the occupants. Here the private areas such as bed rooms were facing towards the public corridor. So the by passers can see the interior of the houses. It will create certain friction among dwellers. As a remedial measure occupants have modified the positions of windows to achieve the certain amount of privacy they needed. Most of the occupants had modified their windows by adding steel grills and lockable windows instead of glazed louvers. Similar kind of situation exists in Keppetipola scheme, openings in apartment units of a one block face directly towards the opening of the unit in the next block. Dwellers have not modify the windows here,

but only have added thick curtains to protect privacy. In Manning Town scheme this is also a common phenomena, but the larger distance between blocks had preserved certain amount of privacy.

Common stairways directly affect the visual privacy of the occupants. In Soyzapura housing scheme the common stairway, which leads to a large number of housing units facing towards the common courtyard was enclosed by brick works to protect privacy. In some blocks of this scheme entrance to the common stairways were covered by decorative entrance gates to protect the privacy of the dwellers in the unit. In Keppetipola housing scheme stairways leading to the upper level were exposed. Though it violateas the privacy of dwellers, but they did not modify due to environmental friendly situation (Fig 17). In Manning Town housing scheme stairways were open to the out side, but protected from the walls from the both sides. Stairway in a one block parallel to the stairway of the other block. To avoid this situation occupants have kept flower pots, hanging shading devices etc..(Fig 55).

Common access balconies also disturb the visual privacy of occupants. In Soyzapura housing scheme common access balconies open towards the central courtyard. Any activity in any of the corridor in any floor will be exposed to the view of the all houses in the opposite wing. To avoid this situation occupants in some units have covered their front facades using **Palali** to protect the privacy as well as get rid of sun and rain. This situation is not very apparent in the other two schemes.

Expressing the identity through the housing unit is more prominent in ground floor occupants. Garden spaces surrounding the ground floor apartments have been treated with different methods of landscaping, painting and paving etc. The motor vehicles also become an attribute in expressing the social status, specially among the middle income community. Although this particular expression is difficult in the case of the occupants of upper floors. The ground level occupants of Soyzapura and Manning town apartment complexes had expanded their front space for garages by constructing temporary or permanent structures for personalization. (Fig 45, 46). This type of

modifications is not apparent in Keppetipola scheme. They park their vehicles in front of the houses covered by the upper level walkways.

Balconies are one of the most prominent elements that exposed to the surrounding in apartments. The occupants had treated balconies in various ways to express their identity. This is a common observation regarding most of the apartment complexes out of the schemes considered. Private balconies of the front facade of the housing units were decorated with flower pots and foliages by the occupants of the Manning Town housing scheme as a way of establishing identity. Most of the housing units in Manning town apartments, occupants have expanded the unit by encroaching the balcony areas and also the rear side balconies were covered with steel grills and utilized as a store or cloth drying area. (Fig 62). In Soyzapura housing scheme dwellers had personalized their common access balconies by placing flowerpots in front of their housing units. In Keppetipola scheme occupants also individualized their housing units by the same methods mentioned above.

As individual needs and personal choices vary from one to another, the original typical design of housing units becomes a constraint for the occupants. So the modifications in the internal arrangement of the housing units is an obvious factor to express identity, in apartment housing scheme with typical housing units.

Displaying various goods in a living room is common to middle income people. The living area of the Soyzapura apartment is small comparing to the other scheme, some of the occupants have expanded this area by modifying the interior spaces. This is obvious in all the selected schemes. In some apartments in the Manning Town housing scheme, interior partitions have been erected in the living area for a shrine room to express that they are Buddhists (Fig 61). When expressing identity through individual housing units, change in the position and design of doors and windows occupied a significant position. This is a distinctive observation especially in Soyzapura and Manning Town housing scheme. In Keppetipola such as observation is not apparent, one of the reasons for this may be that the opening reflects an Architecturally rich out look which is unconventional. Here the duct spaces were also

utilized as stores (Fig 18). Change in the colour of interior and exterior of the housing units, alteration of materials such as paving, finishes of the front facades are common phenomena for personalization (Fig 36).

The feeling of territoriality is apparent in all three schemes. The desire for territoriality is quite apparent among the ground floor occupants in these schemes as they have an opportunity to express it. This is a common observation in most apartment complexes. In this case dwellers have defined territoriality utilizing the spaces around their units by means of landscaping features such as planting trees, placing flower pots, constructing boundary walls and wire mesh partitions etc.(Fig 49). This particular situation embarrassed the occupants living in upper levels.

In Soyzapura apartments keeping flowerpots and troughs in common access balconies in front of the units is an attempt to give an expression to their feeling of territoriality. This situation is same in Keppetipola scheme, where occupants place flower pots in lobby spaces in front of their units and open air walkways to denote their territorial feeling indirectly. In Manning town housing scheme front verandahs were covered with steel grill works and the stairs leading to the upper level were demarcated by keeping flower pots to express territoriality(Fig 50).

3.3 THREE DIMENTIONAL COMPOSITION

Built forms are considered as means of self expression in apartment housing situation. It is essential to communicate the residential character of the building by its form, while protecting the identity, privacy territoriality of the occupants.

When considering the selected examples, the Keppetipola and Manning town housing scheme, apartment blocks were vertically sprung up and linked by upper level walkways and Soyzapura blocks were horizontally spreaded. Express the residential identity and protect the individuality of the families living there, Keppetipola and Manning town scheme added different techniques to the build form. In Keppetipola

scheme breaking the total form into individual units, set back one unit from the other, breaking the roof into small segments and different treatment system of the front terraces, disregard the uniformity of the build form and reduce the pressure of the units occupied by different families, by the design it self. Due to that less modifications had done to the build façade by the occupants. In Manning town housing scheme identity to the build form had obtained by creating private balconies, different types of shading devices and the colour washing. Encroachment of front verandahs into the units by adding steel grill works created a dynamic quality to the build form. In Soyzapura though the layout reflects monotonous appearance, certain blocks types express different identities in the build form. Block A, B, C, D were contrast to each other by the form itself.

Privacy of the total form is dependent upon the nature of the enclosure and the enclosing elements, for instance a form which is enclosed by a transparent medium could not create a sense of privacy within, even though the spaces were organized to do so. Therefore the overall form of the complex should have an enclosure within a certain solid void relationship. Orientation of the blocks should be done carefully to maintain the visual privacy. For instance the spaces would not be visually penetrate one unit from the other.

In Manning Town housing scheme clustering system of the blocks around a central courtyard had create a enclosure, but the rear balconies opens toward the courtyard and it will violate certain amount of privacy of the individual units. By enclosing these balconies in various ways dwellers had modified the built form. In Keppetipola scheme certain amount of privacy is achieved by applying different methods of landscaping. So the modification to the 3D form is not very apparent. In Soyzapura housing scheme achieving the level of privacy is at a minimum. Most of the blocks were parallel to each other. Courtyards created in between some blocks contribute to certain amount of privacy, by modifying the front facades by various devices dwellers preserve the privacy of the built form to a certain extent.

Considering the 3D form a certain degree of defining the territoriality is necessary to evoke a feeling of security among the occupants. Having physical territorial boundaries would bring about a sense of security and belonging allowing them to defend their place of unwanted intrusions. In Manning Town housing scheme territory for the clusters had defined by the road network systems within the scheme. In other two schemes establishing territoriality is not very apparent in the 3D form.

According to the comparisons made between the selected apartment units, it is clearly apparent instead of adopting their lives to the given environment, dwellers want to personalize the given environment to express their desired level of identity, privacy territoriality etc. Though it is difficult to achieve those desires in a compact unit given by a apartment, dwellers some how modify their given environment to achieve their target, at least to a certain extent, that is to convert the given rigid form to a flexible home of their own.

CONCLUSION

CONCLUSION

A home is a place where the institution of family is nurtured and, defines a sense of belonging. It is a place where man longs to be, a place which reflects his values, aspiration, future expectation, social, cultural identity and individuality. Therefore maintaining a harmonious environment with all the key attributes of a home is necessary for the psychological well being of man.

Each human being is unique in personality, he is recognized as a separate individual by his expressions and his active response to the environment. This irrepressible uniqueness of human confounds, those that would measure, quantify and standardized their action and fit them into building types. In the design of single family dwelling, the identification of different interest and values may not be difficult, but in large scale housing projects a number of group of people with different and conflicting objectives and values do exist. Peoples spatial needs, their values and self definitions change through time. The same design may have vastly different meanings to different people. So they modify their given environment to suit their personal requirements. Thus it is important to study the modifications people do to what is given to them, as it might unfold an awareness of the real needs of the users.

> **Everyone needs an incitement, a helping hand, to motivate and stimulate him to fitting his environment to himself and making it his own. And we have to confront him with something which will investigate interpretation and use in such a way that it works for him, the way he wants**
>
> Herzberg, H. 1977

When considering the housing today, most of the housing schemes are dull and lifeless. It seems reasonable to establish variety and flexibility as important goals in building programmes, because these qualities inherently increase the range of individual choice. Thus it is important to have the greatest possible variety in designs, which would have meant that ideally two houses would not be exactly the same. Flexibility could be expressed in terms such as multipurpose, multiuse and convertible spaces with rapidly changing technology, its importance seems obvious it is closely tied with personalization, since it permits a man to modify the settings to his unique needs. So it is necessary to emphasize the symbolic image of house as well as mythic quality of attachment to place, hence apart from the spatial dimensions other cultural, social and psychological factors ought to be considered.

In the first chapter it was established house as an image of social system. Here detailed about the process of home making and variables related to it, such as psychological, physical, social and cultural. Then explained about the concepts of home, problems related to it, due to development of society and the emergence of apartment as a result of socio – cultural changes.

In the case studies observations were made regarding personalization in the selected housing scheme, due to Location, Layout, housing units, 3D form and user modifications. It was cited that modification done to the built form by occupants mostly contributes to the personalization in apartment units. After analysing the selected apartment schemes, it is obvious that some schemes got personalized due to locality such as the Keppetipola Housing scheme. The Landscaping methods, positioning of housing blocks mingling with the existing surrounding added contrast to this scheme by its locality. Also it is proved that the manner of locating blocks in the layout preserve the dwellers required level of identity, privacy territoriality to a certain extent. As an example enclosure created

by the positioning of blocks in the Manning Town housing scheme preserve certain amount of privacy of the dwellers within a cluster.

It is a common phenomenon in the selected apartment schemes that the personalization mainly happens due to modifications done to the built form by the users. It is basically categorized into two namely exterior and interior. Exterior modifications were clearly visible in all the selected apartment schemes, because it will create **sense of individuality** while preserving psychological needs of the occupants. By modifying front boundaries, varandahs, entrance porches, balconies, canopies and exterior finishes; residents have also imposed personal marks to the monotonous facade of the building. Changing the positioning of doors, windows, additional partitioning and colour variation can be identified as interior modifications which will also contribute to certain level of personalization.

According to the process of home making theories, case studies and comparative analysis were made and it was clearly apparent that people make changes and personalize the given environment to them of their own. No matter how well designed, it may never completely suit the family. In apartment housing, it is evident that the above mentioned facts and the issues are different in each floor level. So the user requirements are varying at different levels and the modifications are varying according to it. So it is necessary to look at these changes positively. Thus in the apartment housing the user should have the freedom to personalize his or her own house in a meaningful way. The task of the architect would be to provide a form, which is additive, changeable and modifiable according to the needs of the different users. Hence the nature of the design of different apartment houses should be flexible, which should fulfill dwellers psychological, physical, social and cultural variables rather than assuming the global needs of housing.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Abrams, C.

   Housing in the Modern world, mans struggle for shelter in an unlinking world : Faber and Faber Ltd.

2. Bell, A. Tyrwhitt J

   (1972), **Human identity in the Urban Environment,** London : Butler and Tanner Ltd.

3. Canter, D.V.

   (1971), **Psychology and the built environment,** London: Architectural Press.

4. Ching, F.D.K

   (1979), **Architecture Form Space and Order,** New York :Van Nostrand Reinhold Company

5. Colmina, B

   (1994), **Privacy and Publicity – Modern architecture as mass media:** Massachusetts, the MIT press

6. Cooper, C.

   (1979), **Houses as a Symbol of self Design for human behavior :** Stongburg Hatchinson and Ross

7. Devis, S.

   (1977), **The Form of Housing,** New York : Van Nostrand Reinhold Company

8. Duly, C

   (1979), **The Houses of Mankind,** London : Themes and Hudson Ltd.

9. Fathy, H.

   (1976), **Architecture for the poor,** U.S.A: University of Chicago Press.

10. Gardiner, S.

    (1975), **Evolution of the House,** London : Constable & Company Ltd.

11. Lawler, A

    (1994), **Temple of the House,** New York : G.P. Puthnam;s Sons Ltd.

12. Lawrence, R.J.   (1987), **Housing, Dewlling and Homes,Design Theory, Research and Practise,** New York : Jone Wiley and Sons Ltd.

13. Nabeel, H   (1991), **Housing Without Houses,** New York : Van Nostrand Reinhold Company

14. Norberg – Schultz, C   (1993), **Concept of Dwelling,** New York : Rizzoli International Publication Inc.

15. Oliver, M   (1977), **Psychology of the Houses,** London : Thames and Hudson Ltd

16. Oliver, M   (1975), **Shelter, Sign and Symbol,** London : Barvie & Jenkins Ltd

17. Phillips, B.E   (1996), **City Lights Urban – Suburban life in Global society,** New York:Oxford University press.

18. Pyke, B   (1980), **The Good Looking House,** Great Britain: Burleign Ltd.

19. Rapoprt, A   (1969), **House Form and Culture,** Printice Hall

20. Sommer, R   (1969), **Personal Space, The Behavioural Basis of Design,** New Jersey : Printice Hall

21. Turner, J.F.C   (1976), **Housing by People,** London : Marian Boyers

JOURNALS AND RESEARCH PAPERS

22. Chandrasekara, D.P   (1995), **Future Trends in Housing the High Density Option,** Colombo, 11th Architects SLIA Forum

23. Dayarathna, R   (1995), **What is Housing, The Winder Perspective,** Colombo : 11th SLIA Architects Forum

24. De Silva, T.K.N.P   (1991), **The Tradition of Urban Settlement Pattern in Sri Lanka :** S.L.I.A. Journal, 100(7)

24. De Silva, V.   (2001), **Trees Among Trees,** S.L.I.A. Journal, 102(4)

26. De Vos, A   (1988), **Some Aspects of Traditional Rural House and Domestic Technology :** S.L.I.A. Journal, 100(3)

27. Deheragoda, K   (2001), **Development prospect for the 21st Century :** U.D.A. Journal, 2(1)

28. Domingo, J   (2001), **Urban Housing, At the Dawn of the New Millennium :** U.D.A. Journal, 2(1)

29. Pikusa, S   **Adaptability : Design for functional Adaptability :** Architecture Australia 72(1)

30. Siriwardena, W.A   (2001), **Potential Location for Urban Housing :** U.D.A Journal, 2(1)

DISSERTATIONS

28. Alahakoon, A.M.T.S.K   The relationship between attachment to places and environmental images of "Homes" among professionals. A study using environmental Autobiography 2000

29. Alahendra, W.R   Concept of home and its implications Architectural Design 1995

30. Abeygunawardana, A   House Forms and its evolution. An Examination of the Co – relation between Socio – Cultural factors and the generic house form of the Sri Lanka House. 1994

31. Athuraliya, P   A critical Examination of transitional spaces in high density housing and neighborhoods. 1998

32. Balachandra, H.K   The Traditional Sri Lanka House Forms – An analytical study of its evolution with special reference to Socio – Cultural context. 1990

33. Gunawardena, S   An Examination of the concept of Home in Muty storey housing and special reference to Luxury Apartments. 1998

34. Gunarathna, R   The enchanted house, Architectural dwelling and the enigma of spirit. 1994

35. Kumaranayaka, K   Territoriality, an analysis of its correlation to design of middle class housing scheme in Colombo. 1993

36. Nawarathna, N   Formation of a system for Documentation of user requirements. A design tool for walk up apartments in urban Sri Lanka. 1997

37. Navarathna, N.M.P   An analytical study of contemporary Sri Lankan House designs with special reference to corresponding social system. 1987

38. Samarasekara, A   An Examination of the transformation of neighborhood concept in multi story Apartment complexes with special reference to Colombo. 1993

39. Thilakarathna, S   An Examination of house typologies towards a typology of houses based on expressive qualities. 1995