Creating Quality Neighbourhoods in Low-cost Public Housing in Sri Lanka

Case Study: Summit Flats, Colombo

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Introduction

Housing in the context of Environmental Science can be defined as

> *"The placing of the individual family within an environment which is ideal for their well being and to which they creatively respond."*

For every individual alone or as part of a family unit, a house, be it a hut or or a cave it is more than shelter. It is a place in which to fulfil the fundamental purpose of human society and live a content life. It provides a necessary fundamental sense of security. It also gives a sense of belonging to a certain community. This emphasises the fact that only satisfying quantitative requirements of a house does not create the necessary physical environment which makes the user most comfortable and it is necessary to fulfil qualitative aspects too.

As far as qualitative aspects of housing are concerned, a satisfactory residential environment is expressed in terms of both physiological needs such as comfort, protection from elements etc. and psychological needs such as community and family life. This is a universal phenomenon and Sri Lanka is no exception.

General Background of Sri Lanka

Map of Sri Lanka

Sri Lanka is a tropical island situated in the Indian ocean close to the southern tip of India. It is separated from India by the narrow Palk Straits which is 30 km wide. The total land area is 65,610km2. The population is about 18 million with a density of 296 persons per km2. The urban population is about 30%.

The maritime provinces of the island were occupied first by the Portuguese and then the Dutch and the whole Island came under British rule in the early 19th century. Their influences are still to be seen in many spheres in the country.

Colombo is the commercial capital of Sri Lanka and the country's largest city. Its resident population is 800,000 and transit population is about 400,000.

Public Housing in Sri Lanka

Due to rapid growth of economic, political and social activities in the recent decades, there has been a movement of population from rural to urban areas for employment opportunities and better living. This migration together with the natural increase of population in urban areas increased the demand for housing.

The provision of housing has been considered a major issue by successive governments since independence in 1948.

But a unique characteristic of Sri Lanka's urbanisation pattern compared to many developing Asian countries is its relative slow pace. The urban centres of sri Lanka did not witness the major influx from rural areas as many other cities in the developing world.

Until 1953, public sector housing was limited to lending activities of Housing Loan Board. The first Ministry of Housing was established in 1953 and National Housing Deparment came under its wing.This was empowered to lend for housing and to undertake construction of houses.

In 1965, the government first recognised the importance of providing housing specially in urban areas where the problem is acute and attempted to give quick solutions by implementing multy storey and single storey projects.

The government of 1970 viewed the magnitude of the problem from many angles. While giving consideration to socio legal aspects such as the ownership of housing, a considerable attempt has been taken to increase the housing stock within the available financial resources.

In 1977, the new Government ventured into significant and ambitious attempts to increase the existing housing situation in the Island aiming at a house owning society. A distinct and separate authority, The National Housing Development Authority was established to implement and promote massive housing programmes such as One Hundred Thousand Housing Programme and One Million Housing Programme.

The present government elected in 1994 viewed at solving this problem at a different angle. Realising the need for high density housing in urban areas with increasing land scarcity, the government stopped assistance given to slum and shanty upgrading and initiated a programme to relocate slum and shanty dwellers in flats built by the government.

Regional Level

Gunasinghepura Housing Scheme

Maligawatte Housing Scheme

Multi storey apartments or 'flats' as they are popularly known have become one of the commonest public housing types in Sri Lanka in fulfilling the need of housing in urban areas especially within the city of Colombo and its suburbs. This has become necessary due to the increased demand for land resulting in increased prices for them. Thus the availability of limited resources pushed governments and authorities to invest in these vertical residential buildings.

These multi storey apartments can be broadly categorised into two groups based on their storey height as low rise and high rise . High rise is defined as having more than 4 floors or whose height exceeds 15 metres. Buildings below this height is considered as low rise.

Based on user type too they can be categorised as being occupied by low income, middle income and high income groups. The apartments developed by successive governments have concentrated on the two former categories.

Problem Definition

Since the end of the second world war, there have been numerous attempts at low cost housing all over the world. Beaureaucrats, city officials, architects, planners , all have participated in ventures to provide shelter for low and middle income communities.

Since gaining independence in 1948, successive governments of Sri Lanka have implemented many policies related to housing. Many Urban and rural housing schemes were constructed. These housing schemes were aimed at low and middle income groups. Most often they have resulted in concentrated zones of squalor in the form of stereotype high rise apartments. They have failed because mass housing ignores the individual or family and dictates a uniform lifestyle.

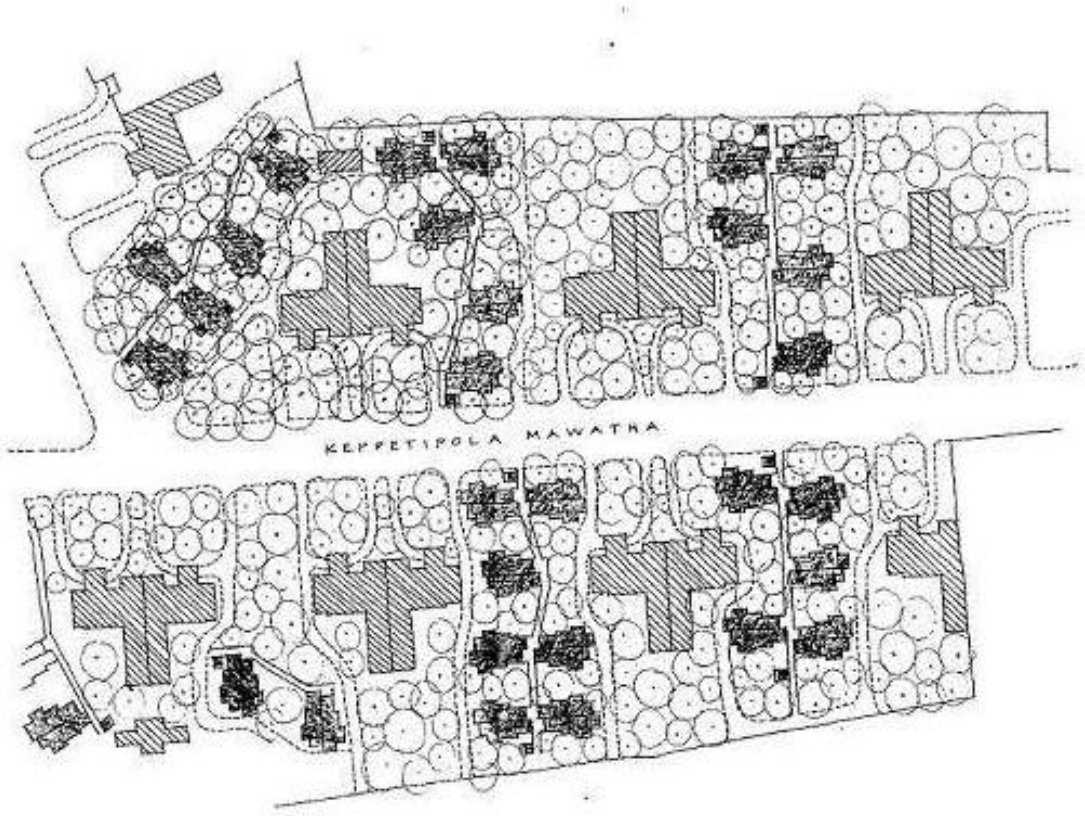
Most of these low cost housing projects are, whether it is for low income or middle income, rectangular blocks constructed with single loaded open corridors served by stairways on the outside of the building. There are a handful exceptions to this.

This study aims at analysing such a project which was completed in the mid 1970s, to see how the problem of creating pleasant sustainable neighbourhoods without having to compromise on architectural or structural quality, and without having to settle for extremely high budgets.

Motivation for the Choice of Study

One of the best examples of this exception is a low cost middle income housing project carried out 25 years ago. Popularly known as the *Summit Flats*, this was constructed in 1976 for the Non Aligned Summit Conference which was held in Colombo. It was intended to house the visiting international journalists and then to pass onto middle income government servants. However, the project was conceived much earlier.

The uniqueness about the project is that it is located among old British colonial bungalows in a highly residential area in Colombo. These bungalows were situated in sprawling gardens with large magnificent trees. The intention was to plan a middle income housing scheme with all amenities. The nature of the site required the use of labour intensive methods in order to cause the least amount of damage to the existing environment.



Part of the Site plan

The author being an architect and an academic, with a special interest in public low cost housing, this is an ideal project as a case study.

This challenging project is an example of how one could design pleasant, livable neighbourhoods achieving the same density without having to go high rise and high cost. And to analyse how successful the designers and policy makers have been. Also to see the shortcomings in the project and to see ways of improving them for future projects of this nature.

Method of Study

The study is based on recorded documentation of the project and with interviews with the architects involved in it. The author has visited the housing scheme on several occasions over the years and seen first hand how it functions and how the aspirations of the designers and policy makers have been fulfilled. Also, residents who have been living here for a long period of time have been interviewed to see how they experience their built & natural environment The positive and negative aspects they see in the scheme as users. After 25 years, to analyse how this housing complex works today in comparison to most modern apartments.

Background

Project Level

This project was constructed in 1976, in time for the Non Aligned Summit Conference which was held in Colombo to house the visiting international journalists. As the project was conceived much earlier, the intention was to pass it onto middle income government servants after the brief initial use.

The brief was to plan a middle income housing scheme with all amenities such as shops and recreation. It was required that the scheme should be,

1. Labour intensive
2. The floor slabs to be precast concrete
3. The slab was to be erected using 5T cranes (this option was later changed to suit the site conditions).

The existing site housed 6 persons per acre. The proposal was to house a total of 5000 persons, that is 167 persons per acre. This was to be obtained by building 960 living units of about 90 m2 each. But before implementation, it was decided to reduce the required number of units to 180.

Strategies

Housing policy should be moving towards economic ,standardised and flexible but quality design. By quality it is meant factors in the design which enrich the quality of life of the inhabitants. According to the architects involved in the project, the first discipline they thought most important was to cultivate an attitude of humble respect for the aspirations of the people for whom the houses are designed. People require that houses be made into homes. All financial policies, technological brilliance and business processes which are used for the making of houses must in the end serve the somewhat primitive and eternal needs of man for a *HOME*.

The objective of the scheme was to create this *HOME*. To house the required number of people, it was necessary to have a multi-storey complex. However there was not to be any elevators to save cost. Therefore it was not possible to build higher than 45 feet (15m).

The new four storeyed building was to be built around the existing buildings and the trees in such a way as to maintain the existing residential character of as much as possible. The pattern of roads,

lanes and open spaces which are the traditional elements of middle income housing areas in Sri Lanka were to be maintained.

In large scale housing projects one of the major drawbacks is that the designer never meets the ultimate occupant of the proposed housing unit.

Here several important design strategies were adopted.

1. No trees to be cut and all existing old bungalows to be conserved.
2. The unit size to be approx.90m2 and to be two floors
3. Streets in the air - Circulation pathways at upper level
4. Units to be able to be personalised
5. Structural system to be engineering bricks with mid air streets in concrete.

Actors

The main actors in this project were:

Client

The Ministry of Housing and Construction on behalf of the Government of Sri Lanka. The immediate users were the visiting journalists from all parts of the world to the Non Aligned Summit Conference, but the ultimate user was middle income government servants.

Architects

A team of architects from state engineering corporation of Sri Lanka. This team had a challenging task ahead of them due to:

1. Limited time period
   The project had to be completed in time for the conference to house the journalists as the immediate users
2. The site condition
   The new dwellings had to be grafted into the existing environment which had an ideal residential quality. The pattern of roads, lanes and open spaces and trees which were traditional elements of the middle income housing scene anywhere in Sri Lanka had to be retained.
3. The immediate user and the ultimate user being different
   The immediate user being people who came from another country for a specific period of time and the ultimate user being families of government servants.

Construction

State engineering corporation of Sri Lanka and Buildings Department of Sri Lanka.

Though these two government organisations were the main contractors, the actual construction was handled by a number of small time builders under the supervision of the Architects and the Main Contractors. This was an interesting situation where construction of each block was given to a different builder. In a normal situation this would have resulted in confusion and delays. But here it worked perfectly, each builder keen to do a good job of his block and also deliver in time. There was a general cooperation amongst all the actors in the project to see it through in time for the conference which was the immediate goal.

Design

The Architects conceptualised the housing scheme inspired by a low cost housing project by renowned architect and architectural theorist Christopher Alexander in Peru, sponsored by the UN in 1969 for housing Peruvian white collar workers. This scheme was designed by rationalising the environmental problem and and then breaking it down to its smallest elements. These elements or parameters were then analysed individually and synthesized into a designed whole that became the solution to the original problem.

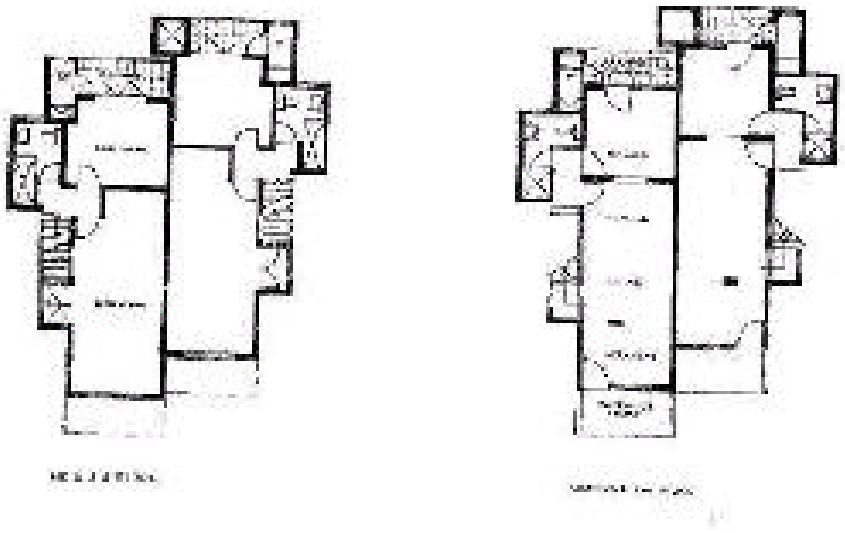
In order to understand what the design parameters would be in the Sri Lankan context, comprehensive studies were done. Traditional and contemperory dwellings of varying size and and economic groups and the lifestyles of their occupants. The designers then identified 21 parameters for the design. Those parameters and how the traditional solution was transformed to contemporary use at summit flats are given below.

Parameter	**Traditional solution**	**Interpretation at Summit Flats**
1.The need for a clear distinction of a dwelling	Traditionally each dwelling is set within its own compound	Pathways off the 'street' leading to an open private terrace in front of each unit.
2.Maintaining the extrovert character of each dwelling	The social status is modestly maintained by showing a few items of furniture	The public areas of each unit is visual to the street to a certain extent while maintaining security.
3.The distinction between public and private.	Each house has a verandah which serves as a space for greeting outsiders.	A verandah is provided by the open terrace in front of each unit.
4.The private spaces visually apart from public space	A space leading from public space or verandah as a private space	Each unit contains a space leading from public space to be used as private
5.The rear space used as work area	The back verandah where toilets, kitchens lead off this space	A space is provided that leads from private space that could be a back Verandah as work space
6.Kitchens and toilets visually apart	Traditionally the kitchen is away from the house. Toilet is a separate building.	The kitchen and toilet kept at rear of unit apart from private spaces.
7.Separate sleeping cells based on sexes	Men and women had separate sleeping rooms	The sleeping areas on the upper floor can be divided into 2 or 3 separate rooms.
8.Provision for extended family units	Verandah as male sleeping areas and within the house for females	Upper level can be divided into a no. of units using a choice process of planning.
9.Visual separation of front and rear	Separate access to the rear of the house not seen from front	High wall with a window for ventilation separates the living areas from kitchen and service terraces at rear
10.Refuse disposal		A refuse duct from each kitchen area
11. Garages and parking space	Cars are always under a shelter and not left in the open.	Lockable garages to be provided on rent and parking space in front of each unit
12.Creation of a close knit society	Clustered units within short distance hidden by thick foliage	clustered units with common meeting spaces formed by open terraces and walkways with foliage
13.Creating a natural overlap in city design	New roads are generally a development from existing footpaths	The existing road layout is maintained with new in roads or branch roads to blocks
14. Maintaining an Architectural overlap	A town or village contains dwellings of different periods	Existing bungalows to be conserved and converted to smaller units

15. Lack of glass	Rooms are ventilated with a timber door and window opposite each other. Window has security bars	Rooms are ventilated with a timber door and window opposite each other. Window has security bars
16.Construction elements Floor	Floor of the verandah is treated differently to the internal areas	Coloured cement and terra cotta tiles laid in small sections of each unit.
17.Wall	Traditionally plastered white	All internal surfaces plastered and lime washed. Certain areas left exposed brick to economise and contrast
18. maintainance		Kitchen to have a precast work slab. Toilet walls to be waterproofed to 4 feet.
19. balustrading		Brick parapets in place of balustrading
20.Internal staircase	A two level house has a single flight of steps of timber leading to an attic.	3' wide single flight stairs in RC planks. A back parapet is used as a balustrade.
21.Economy of structure	Research into housing	A system of load bearing cross walls and precast concrete floor slabs.

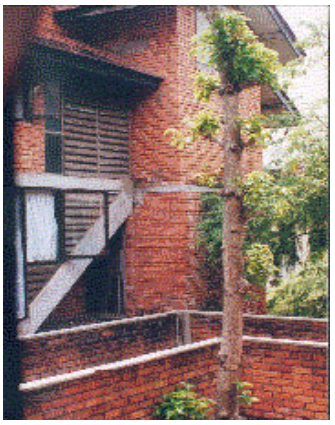
Source: Report on Summit Flats by Upali Karunaratne, SEC Consultacy group, sri Lanka

The architects looked for a different model to the traditional public housing model that consisted of large blocks with long corriors with impersonal doors leading to each unit. At the very outset it was decided that access to each unit should be unique and personal. Thus each block would consist only of four units. Each unit of around 90 sqm consisted of two floors in order to more distinctly separate the private sleeping areas from the semi public areas of of the house. The lower floor consisted of a living , dining,kitchen,toilet,verandah or a public space separated from the living area and a external covered space outside the kitchen to be used as a service area of the kitchen or to be used as a traditional firewood kitchen. The upper floor had two or three bed rooms and a toilet.



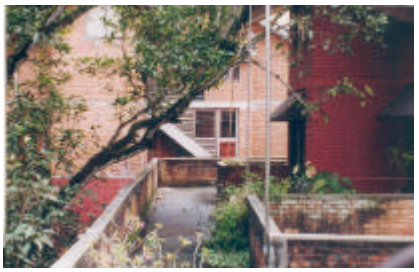
Plans of a Housing Unit

Circulation paths were open air bridges with walkways meandering between trees and widening in front of entrances to houses. These spaces were to act as meeting places for the residents and also to be used as their *'little garden'* to grow flowering plants or vegetables. On the ground, the tall structures of the walkways act as overhangs protecting the walkways below. The widened space or terrace in front of the units in the upper floors act as covered verandahs for the units at the lower level. These verandahs, which are an integral part of traditional Sri Lankan dwellings are used to receive guests or as a sit out space in the tropical climate. By this, each house would be personalised by their occupants. The same kind of personalisation could be done to the front terrace of the with planting, thus giving a clear identity to each unit. The individual residents were to be given the choice of external grille work and colour of fenestration.



Timber louvers in place of windows

Entrances to Houses with Foliage



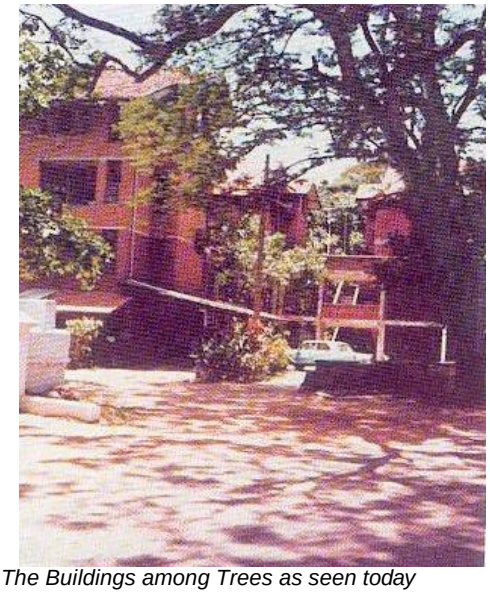
Circulation Bridges at upper level

The structural design was wall on wall construction using load bearing engineering bricks with a grid of 10'-9" .This was done to avoid having to use cumbersome, expensive reinforced concrete columns & beams for the housing units.The engineering bricks could be left unplastered. In addition to being a cost saver, this added a charming earthy tone to the buildings. They were expected to weather with time and no painting or maintenance was needed.Only the upper level streets were on a framed concrete structure. Floors were reinforced cement concrete. Timber louvers and poles in place of windows were another low cost solution to get natural ventilation. The simple structural design enabled easy and speedy construction.

As mentioned earlier, the construction method was labour intensive with small time builders or sub contractors who were each given a manageable quantum of work. This was due to the fact that large machinery and equipment were unable to be brought to site in order to

cause least amount of damage to the existing environment with large trees and Old bungalows. This suited the client, the Government ministry of Housing and Constuction as it saved time in procuring equipment and cut costs down.

Conclusions and Recommendations



The Buildings among Trees as seen today

Although completed about 25 years ago, this housing project is still regarded as one of the most pleasant public housing neighbourhoods in Colombo. This is the kind of environment that is very conduicive for social interaction of people which is a vital ingredient for a healthy community. Many of the original intentions of the designers have been fulfilled in the final product. Most important among them - the plan to preserve all the old trees in their splendour was achieved one hundred percent. All the colonial buildings were left intact, though in the end, none of them were converted to smaller units. These are today used to house higher officials of the government. Each dwelling unit in the scheme has been personalised by the inhabitants without destroying the uniformity of the whole. This has been achieved mainly by planting in the verandahs and terraces making it very pleasant to walk along the *'streets in the air'*. There are no *'no mans land'* . Residents tend to look after the in between spaces and maintain them thus eliminating a big problem in mass housing where in between spaces become garbage dumps. Neighbours gather, kids play on these streets, making it very active and lively.

The bungalows in the midst of the complex set among the large trees of the gardens have enhanced the residential character of the location. Most of the old mature trees that were existing before the project came up still exist after 25 years blending with the old & new buildings making this one of the most pleasant environments in Colombo.

In the individual houses, most of the inhabitants have been able to successfully personalise their dwellings without destroying the character and uniformity of the scheme. This has been possible largely due to the very flexible and informal seeting where people can adopt easily. The ground floor living spaces and upper floor private spaces vary from one house to another, by the placing of furniture, and basic

changes such as screening devises according to each family's requirements and by use of foliage.

In the detailing, louvers and timber poles instead of windows used as a low cost solution provide adequate natural ventilation. It also makes an interesting detail on the façade of the building. The location and sizes of openings in the wall keep the houses cool throughout the day.

On the flip side, there are a few shortcomings that could have been handled in a different way. Some design and some practical aspects. The units don't have the verandah as initially planned and the entire space has become living and dining. However the open terraces in front of the walkways act as verandahs.

The unavailability of garages is a problem to the occupants and ad-hoc temperory shelters built up give a untidy appearance to the premises.

The earth toned, exposed engineering brick walls blend well with the trees though some owners have painted the buildings brick red and these stand out garishly.

As a social issue, the residents of some of the houses are now being changed to a different social level due to various socio political reasons. This atmosphere is not too conducive to the formation of benign social groups as the diverse backgrounds and values of the inhabitants make it difficult for cohesive communities to form.

With all its positive and negative aspects, this housing project can be rated even today as one of the best residential neighbourhoods of Colombo. Unfortunately, this project has not been taken as a model for housing projects. It would be worthwhile to examine the possibility of using this as an example for projects of this nature as this has proven that to create good livable and sustainable neighbourhoods it does not need to be high rise or high cost.

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