Liveability of Low income housing

Proposal for Improvement of Low income Housing in Sri Lanka

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Introduction

The population explosion in the contempory world has posed a threat of high magnitude for architects and planners. There is growing realisation that a balanced approach towards managing the available resources is essential for the growth and maintenance of a livable environment.

Land has become one of the limited resources available and the relevant professionals have the responsibility of accommodating this high magnitude of human affairs within it. Livability of the built space existing at present is about to face a great change and the effects on socio-cultural and bio- physical system there by inevitable.

In this context it is vital to have a fair understanding of the means of accommodation of the fast growing societies.

Thus housing has become one of the critical aspect of this issue and accommodation of mass population need to have an utter sensivity of the nature, implication and consequences of phenomena like “livability”.

In this study it will be discuss the implications of livability with reference to urban low income housing settings in both Sri Lanka and international.

1 Shelter Situation Analysis

1.1 Basic General Data

Geography and Administration

Sri Lanka formerly known as Ceylon is an Island Republic in the Indian Ocean lying off the South-Eastern coast of India and became Independence on the 4th February 1948. It is located between north latitudes of approximately 5^0 55 and 9^0 50 and East longitudes of approximately 79^0 42 and 81^0 53. The greatest length from the North to south is about 435 Km and the greatest width is about 225 Km. Total area of Sri Lanka is about 65,610 square kilometres.
With respect to the mean sea level of Indian ocean the highest point of the country is at about 2500 m height at Piduruthalagala mountain.

The country name is Democratic Socialist Republic of Sri Lanka and is called as Sri Lanka in conventional short form. The type of government is Republic. Its capital and the largest city is Colombo and about 1.5 million people live in the Colombo municipal area, which includes several contiguous towns. The legislative Capital is Sri Jayawardenapura Kotte. Administratively there are nine provinces were defined. They are Central, North central, North, Eastern, North-western, Sabaragamuwa, Southern, Uva, and **Western**.

Demography and Health

Sri Lanka is about 19.0 million (year 2001 estimate), yielding an overall population density of 323 persons per sq km. 51% of the population is female and 49% is male. Growth of the population was nearly 13 % from 1990 to 2000, with an increase of about 1 % in 2007. About 79 % of the population lives in rural areas.

The average life expectancy at birth was 77 years for women and 72 years for men. The infant mortality rate declined to 11.2 deaths per 1000 live birth in 2006. The crude birth rate in 2006 was 18.7 per 1000 population. The overall adult literacy rate in 2006 was 90%. The literacy rate among men was 93% and that among women was 87%.

Economy

Sri Lanka's most dynamic sectors nowadays are food processing, textiles and apparel, food beverages, telecommunications, insurance and banking etc. By 2005, plantation crops made up only 30% of exports (whereas 93% in 1970), while textiles and garments accounted for 65%, with an annual average GDP (Gross Domestic Product) growth rate of output 7.7% throughout 2006. The economy is continued to increase in year 2006 too, with a growth rate of 6.5%, even a year after the disaster due to tidal wave attack called 'The Tsunami disaster' which caused the most ever made damage to the country over the history of more than 2500 years.

Total labour force is about 52% of the population. Unemployment rate has continually decreased to 6.5% in 2006.

1.2 Shelter Related Fact and Figures

Access to Shelter

Housing stock:

In 2001, Total housing stock of 18 districts was 3.969,027 out of which,

Permanent	- 2,771,860 (69.8%)
Semi permanent	- 1,123,003 (28.3%)
Improvised	- 33,799 (0.9%)

Yearly percentage increase in number of dwelling units

Annual percentage increase in housing units is 1.5%

Housing deficit (quantitative and qualitative)

According to 2001 census data, the required amount of total housing units is 134,812 & the housing deficit is **20,258**.

Housing Backlog is (total deficit +semi permanent +improvised) **33,386**

Yearly percentage increase in number of dwelling units

According to Census data (2001) during the inter censual period from 1981 to 2001 the growth of housing units have outpaced population growth. While the population has increased by 10.1% or 0.5% annually number of housing units

have increased by 35.5% or1.5% per annum, nearly 3 times higher than the population growth.

Occupancy

Table 1: Occupancy distribution.

Number of Occupants	**Housing Units %**
Total	100
1-4 persons/unit	47.4
5-9 persons/unit	45.2
More than 10 persons/unit	7.4

Source: census 2001

Floor area per person

The Government has classified basic floor areas of living units for the use of occupants.

Total occupied units	114,554
Total occupants	549,859
Average area of a habitable room	3.6sqm
Total area of a housing units	28.8sqm
Total occupied units	28.8x114.55 3,299,155sqm
Floor area per persons	3,299,155/549,859 = **6sqm**

Table 2: Floor area of housing units

Tenure of households & Ownership

Majority of households in the occupied housing units (64.1%) is owned by a member of the household.21.1% households live in rented /leased housing units and 6% live rent free & another 2.3% live in encroached housing units.

Housing affordability ratio

Description	**Floor Area (sq.ft.)**			
Construction cost Rs.1000/= per sq.ft.	700	800	900	1000
	700,000	800,000	900,000	1,000,000
Interest Rate	12%	12%	12%	12%
Repayment Period	15 years	15 years	15 years	15 years
Monthly Instalment Rs.	8,400	9,600	10,800	12,000
Income needed to prove the Paying capacity	**25,200**	**28,800**	**32,400**	**36,000**

Table 3: Housing affordability ratio

According to the above in order to afford minimum floor area of 7000 sq.ft house the average income of a person should be Rs.25,200/= that is 20% of the households that belong to high income group

Tenure of households

82.1% of total owned by a member of the household, 7.0% are on rent free, 5.8% on rent/lease and 1.4% are encroached.

Building materials

About 80% of housing units are constructed with permanent materials. They are mainly Bricks/Cement blocks with cement sand plastering, and cement rendering. The demand increases day by day increasing prices of materials

Construction Industry:

It shows that cost of a house with fine finishes of 100 sq.m will costs about SL Rs. 3800000[1]. That would be around SL Rs. 2000000 for a house with basic finishes.

It is expected a further increase in demand on housing materials after liberation of areas held by LTTE in Northern region.

[1] 1US $ = SL Rs. 115.8 (in Aug.2009)

1.3 Housing Policy

The government's policy is to grantee the right of any family to own or posses a house according to the needs of a family. The Governments policy aims to ensuring planned human settlements taking into consideration the population density, land suitability and environmental suitability.

1.4 Actors in Shelter Delivery and their Roles

The Government as the main shelter delivery actor & provided services and resources.

Western Province Provincial council, National housing Development Authority (NHDA) Ministry of Fisheries and Aquatic Recourses (MFAR) & Plantation Human Development Trust (PHDT) play a key role in provision of public sector housing. The Real Estate Exchange (Pvt) Ltd (REEL) is the main arm of the sustainable townships programme of the Ministry of Urban Development & Water Supply & mainly provides shelter for the urban poor in the city of Colombo.

Projects Implemented by NHDA

Model Village housing Programme

Estate housing Programme

Direct Construction Programme

Sevana Piyasa Programme-Provision of roofing materials to poor households & the poorest receive an additional Rs.10,000/= to meet the cost of roof structure. No of beneficiaries, 2,133 (2004)

Projects implemented by MFAR

Fisheries housing programme - 714 houses were completed in 2004.

Projects Implemented by PHDT

Plantation Development support programme.

Projects Implemented by REEL.

High-rise development for the urban poor, sahaspura housing complex.

Financing/Funding Schemes

The main financial assistance is through the government banks the total housing loan amount is about aprox.Rs.15 (billion) in 2004. In addition there is a special

loan scheme for government servants up to Rs.1,000,000/= at a rate of 4% through commercial banks.

In addition the private sector organizations such as the Ceylinco developers (pvt) Ltd. Kelsey Homes, ETI Homes & Individual developers are involved in providing the houses for middle income & higher income groups of the society.

NGO's are mainly involved in providing shelter for tsunami effected communities & communities effected by the civil war.

The research institutions such as the National Building Research organization, Universities etc are involved in providing technology & assistance for low cost housing construction technology.

1.5 Shelter Design

Urban Development Authority established under UDA Law No. 41 of 1978 is empowered to prepare development plans for the urban areas. Zoning and other building and planning regulations are in these development plans. According to that there guild lines for sub-division of lands, parking, safety, light and ventilation, preliminary planning clearance etc., Other than that "form C" of the development plan provides statutory guidelines for No. of floors, road width, building height, rear space, plot coverage and floor area ratio.

2 Organisation

Western province provincial council – engineering Organization is a government organization. Our Mission is to provide all Engineering Services required for the implementation of the Development Processes of the Western Provincial Council, effectively.

The main objectives and functions of the provincial Engineering Organization of western Province, is to provide technological guidance, and design and prepare plans and direction and execution of construction work pertaining to buildings, roads and irrigation projects and related infrastructure Development, pollution control activities under the Western Province Provincial Council. It gives the full consultancy services of Architectural, structural, Water supply and sewerage engineering and other technical support for Housing projects, Hospital projects,

School and other government buildings projects with in the western provincial council limits.

Also, it will act in advisory capacity to those who need technological guidance and assistance and, provide project management services in order to implement the development program.

3 Shelter Problem

Economic Capital of the country, Colombo is also located in the **western province provincial council** and 60% of the GDP is computing from the three districts (Colombo, Gampaha and Kaluthara) that comprise of the western provincial council. Rapid urbanization occurred in the western province during the last few years and more and more people started to migrate from rural to urban areas. Resulting serious housing problems, as an immediate solution for this problem in the urban areas the concept of low income housing has aroused.

The low income housing provides only the very basic needs like shelter and protection. Majority of these houses does not address psychological and spiritual qualities like privacy, identity and individuality which were also a must expected by the occupants from a well shaped house only part of their needs in the hierachicy being met. The end result is an unsatisfied society.

Hence clearly shows the rapid growth of population density in the city of Colombo causing unsatisfied of livability condition of Low income housing.

In this context, identification of socio-spatial requirements of low income group and the implication of the built environment may be valuable as to assist providing house with livable condition under a limited economy of a country.

This should be properly addressed in policy making level as well as implementation level to upgrade living condition of lower income group.

4 Proposal for Change and Improvement of living condition

The above discussed situation of low income housing settlements can be easily traced in many countries. It is better to consider how they have full filled the requirement of its users and the methods carried out to over come each situation

STUDY ONE: LOW INCOME HOUSING – KUALA LUMPUR, MALAYASIA. Archt. Charles Correa.

Main idea of this low income housing is affordable for the poorer section of their urban population. This complex consists of three storied cluster housing and each cluster had six houses. Basic house unit of 68 sq m large and is provide a living room, two bed room, kitchen and bath room.

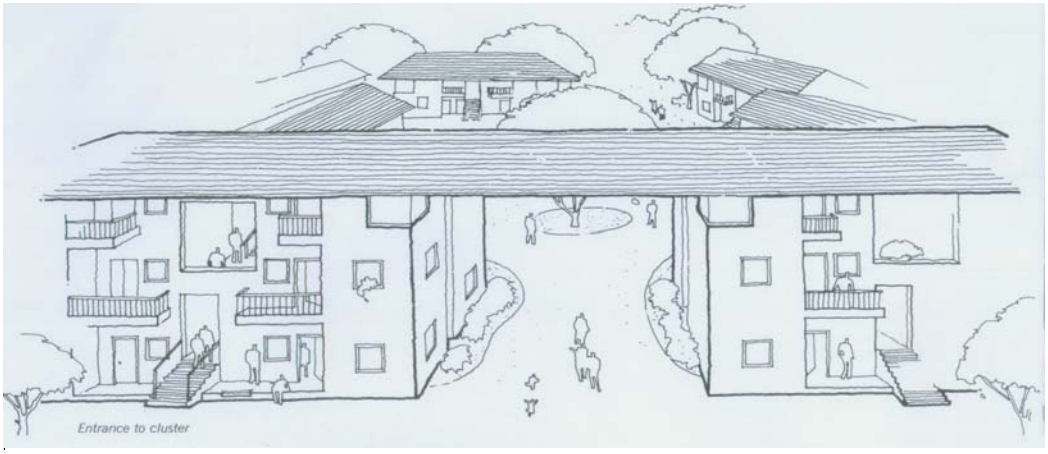

Fig-01. Elevation to cluster

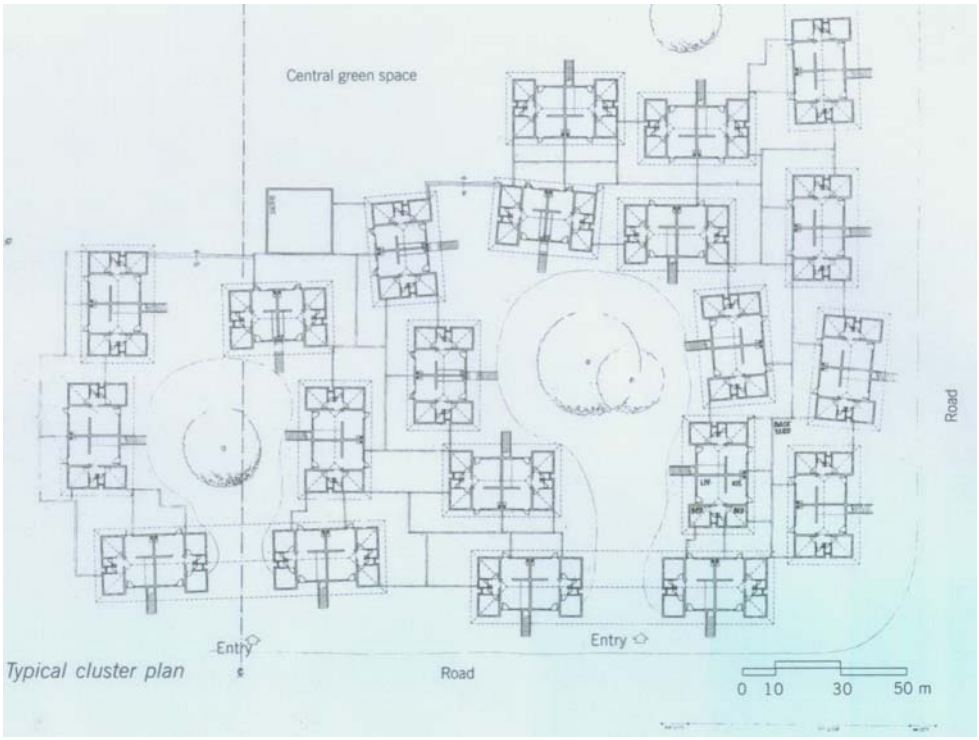

Fig-02. Typical cluster plan

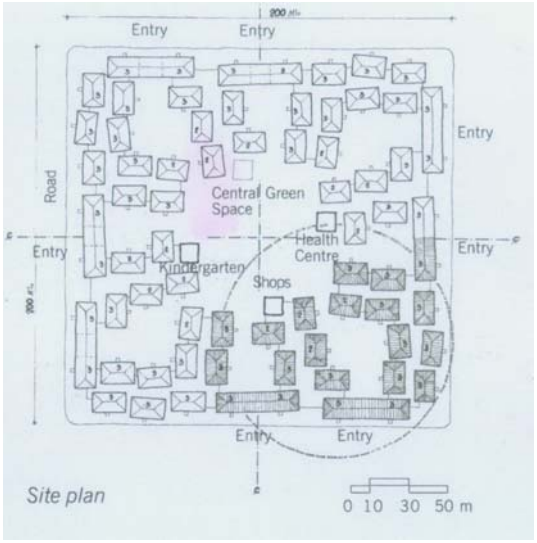

Fig-03. Site plan

When looking at overall design layout.

- cluster around community space (open courtyard)
- simple and economical built form of three different height
- position of front doors and staircases directly to community space
- between cluster providing green area

- Each cluster had main entrance building which is gives sense of entrance of cluster.

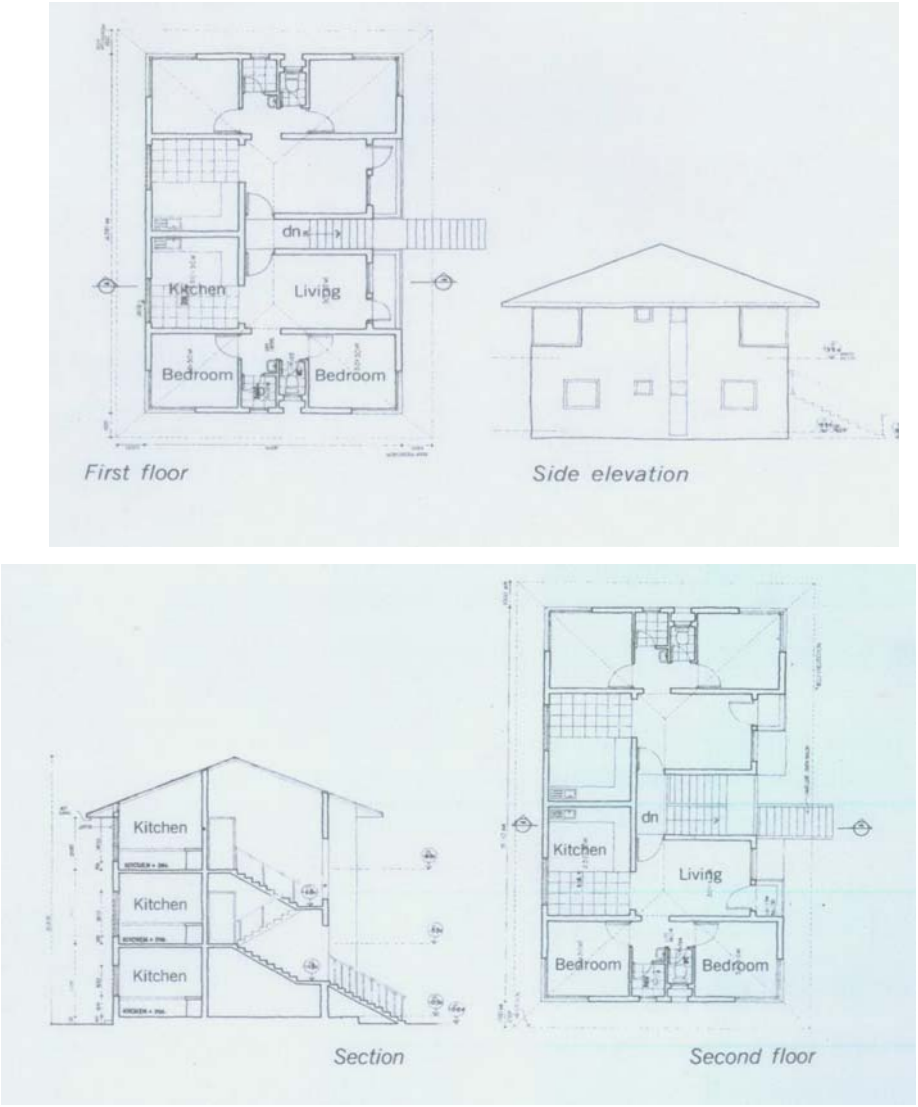

Fig-04. Typical floor plans, elevation & section

According to the design of this housing scheme designer properly manage social interaction of the families living there.

STUDY TWO: BELAPUR HOUSING – NEW BOMBAY, INDIA.

Archt. Charles Correa.

Located on six hectares of land from one km away from the city centre of new Bombay. This project also demonstrates how to achieve all needs of community aspects such as open spaces, schools, with in the low rise context.

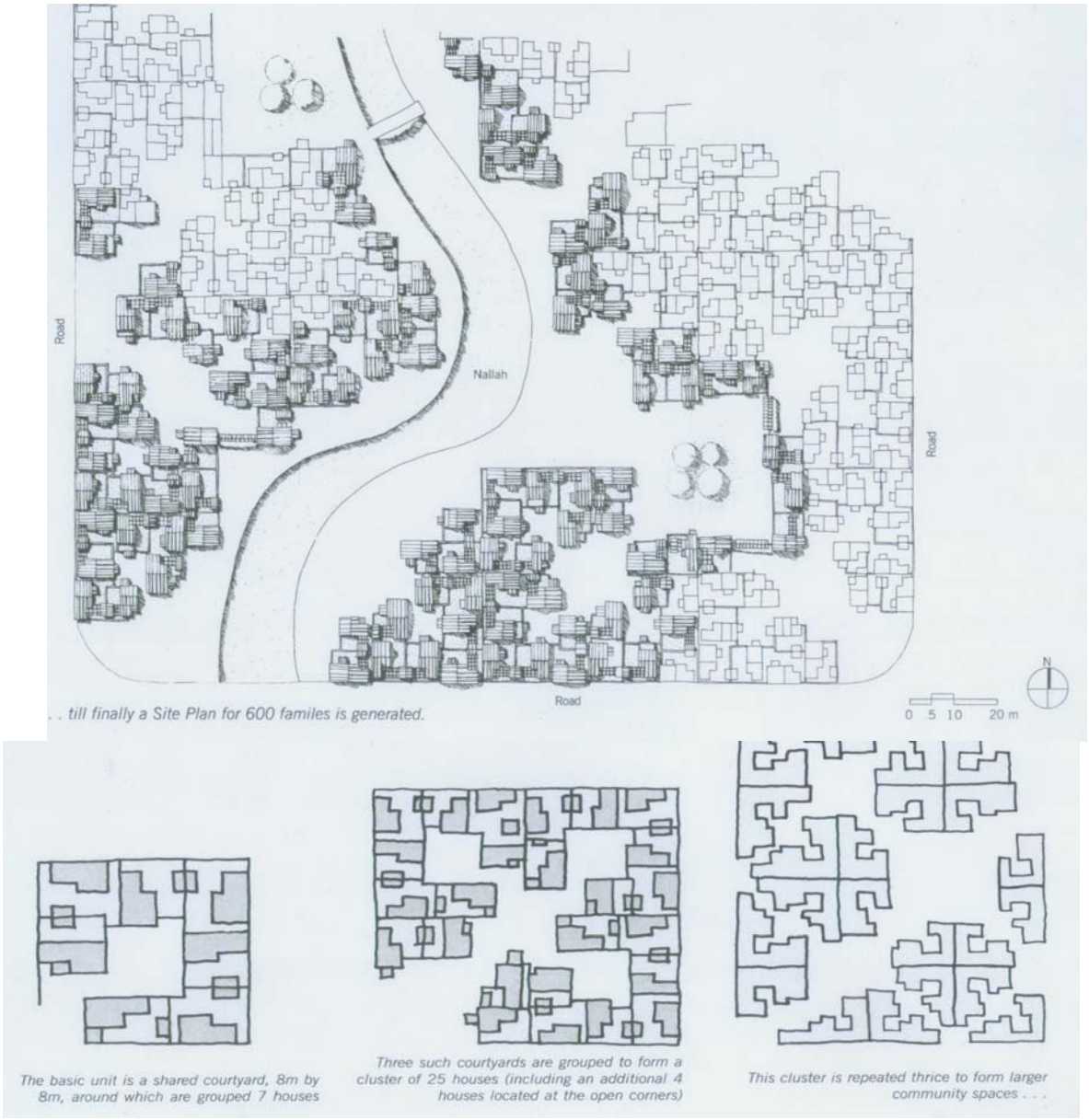

Fig-05. Cluster patterns

When looking at overall design layout.

- Single story simple and economical built form
- Basic unit is a shared courtyard, 8m by 8m, around are grouped 7 houses
- Three above groups are grouped to form a cluster of 25 houses. This cluster repeated thrised to form lager community spaces till 600 families.
- Between clusters providing green area, open spaces to walk.
- Houses can be extension as desire of uses for certain manner.
- Creating interaction with the community by providing community spaces.

According to the above housing projects architect feels are the most important elements to the people themselves.

Fig-06. Ally way link to cluster

Fig-07. A cluster around the courtyard

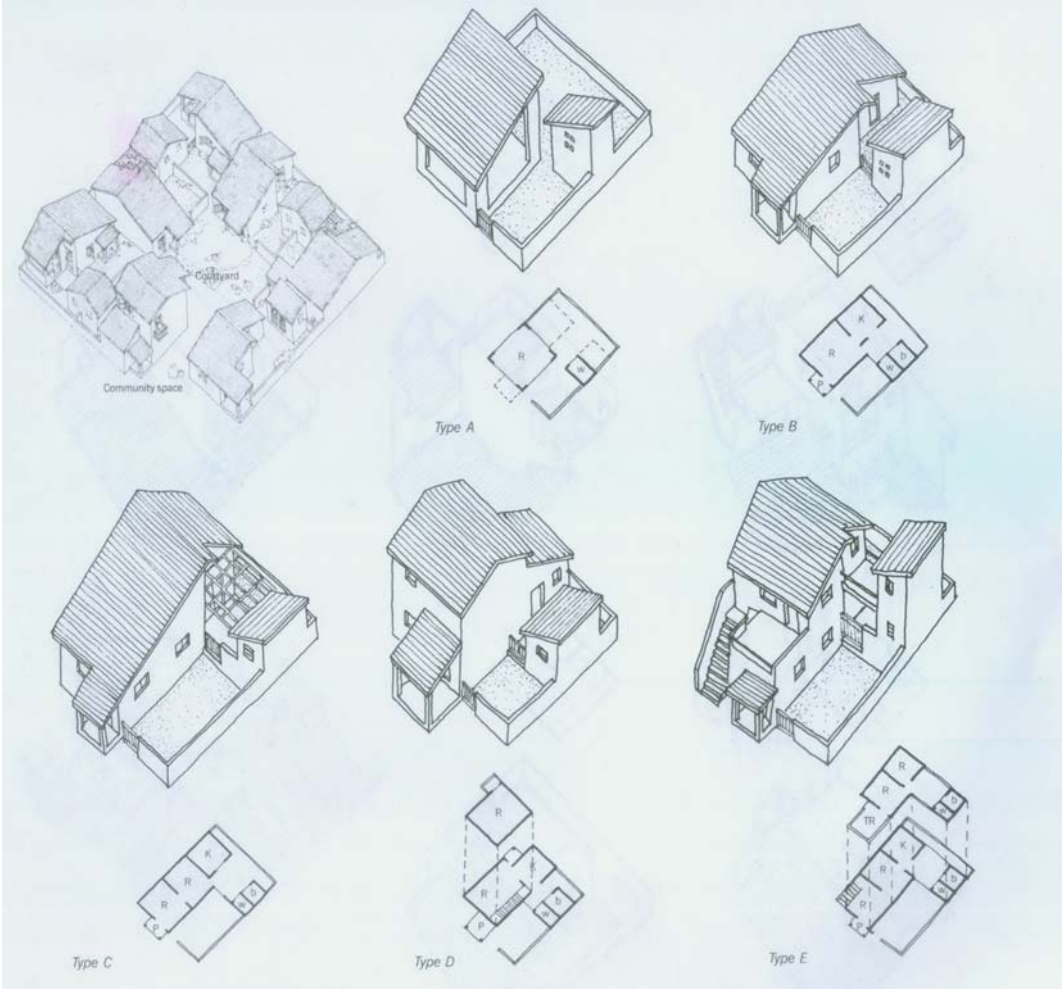

Fig-08. Extended house types

STUDY THREE: DIAS PLACE HOUSING SCHEME

PETTAH, SRI LANKA.

Situated in a very busy commercial area in pettah in an extensively developed urban area. Several major transportation routes have to Dias Place which is the main spine providing access to the scheme.

Main focus of low income group who have sought accommodation due to the close proximity of their work places. This housing scheme consists of four storey housing blocks with identical type plans. Major portion of the ground floor is occupied by the commercial establishments having access through an arcade on the public street. The upper floors are confined for housing units gaining access through vertical access ways and upper level walk ways on the first floor level.

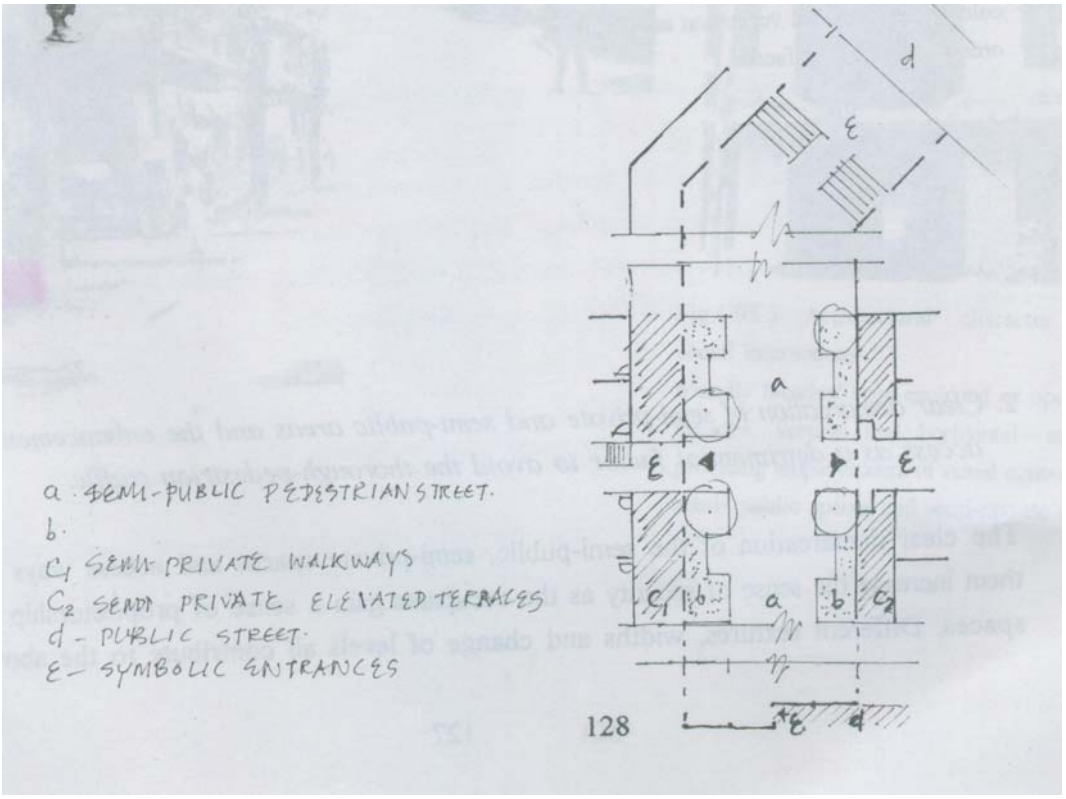

Fig-09. Lay out plan

Looking at overall design layout,

- Livable atmosphere within the public street, cannot be sustained a very active socializing space.
- Not functioning neighbourhood atmosphere
- No proper community gathering space for users.
- Along this pedestrian street revels its orientation densely packed row of houses either side which is discourage social interaction among the uses.

Fig-10. Link with street


Fig-11. Street elevation

According to this study in the resent past housing strategies and concept have drawn many criticisms and arguments. Also recent housing strategies have been exercised upon number of constrained and parameters such as land value, density, and economic issues, social and so on.

This situation urged the provincial council to deviate from common housing design and to consider alternatives in order to provide proper designs of urban housing projects without compromising the quality and comfort of users.

So that following guide lines to be consider.

- Study past projects of low income housing
  - Cultural aspects
    1. Ethnic
    2. Religious
  - Social aspects
    1. Interaction
    2. Privacy
    3. Territorial
    4. Identity
  - Economical aspects
    1. Affordability

2. Ability (Repayment of loans, age)

- Environmental and Aesthetic
    1. Solid waste management
    2. Sewerage treatment & Drainage
    3. Green areas & open spaces
    4. climatic design
- Safety, Security and comfort
    1. Durable construction techniques
    2. Fire protection system
    3. Health condition
    4. Community facilities

- To avoid haphazard development to introduce proper Master plan for urban low income housing areas.
- Consider Both Vertical and Horizontal development with more livable manner. Including more urban community spaces, green spaces etc.
- Designing to extended houses for future developments.

Action plan:

- Evaluation of available data
- Prepare preliminary basic Guide lines
- Discuss with all related parties including desition makers and public end uses.
- Prepare for Proposal for
    - Improvement of existing housing projects
    - For New Developments of housing projects
- Follow up and continuous improvement of time to time.

References

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