

Common Spaces as a better living environment in Low Income Housing – Srilanka

Modifications in urban housing scheme & their relationship
for user modification.



H. W. D. Presintha Abeywickrama, Chartered Architect

Central Engineering Consultancy Bureau, Sri Lanka

Introduction

The problem is with shelter in Srilanka as it seems to be perceived one of the urban poor. It leads to a solution for affordable housing for poor. In according to housing needs of Srilanka, the government has identified several Housing development programmes all over the country. 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.

When considering the housing today, most of the housing schemes are dull & lifeless which were not fulfil householders necessities. Many housing schemes have not provided the stipulation for dwellers psychological, physical social & cultural manifestation that is essential for thire existence. 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 sociability, privacy, identity & territoriality. In mass housing under certain constraints people shaped and adopt the given environment to suit thire personal needs. 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.

Shelter Situation analysis

Basic General Data Geography and Administration

Sri Lanka, an island in the Indian Ocean is located to the south of the Indian subcontinent. Total land area is 65610Sq.m & breadth of 225km & length of 445km. The relief feature of the Island consist of a south central mountainous region with height exceeding 2500 m and is surrounded by broad lowland plains. From the mountainous regions nine major rivers and 94 other rivers flow across the lowlands into the Indian Ocean. The Climate is typically tropical with an average temperature of 27°C in Colombo & no off seasons in srilanka.

Settlements in ancient times were determined by the hydrologic civilization but this trend was changed after the 16th century with the development of trade and commerce based on sea ports. These ports were became the focal points of urbanization as the factor influencing the distribution of population in the other areas. The Portuguese, Dutch and the British influenced in succession and reinforced the growth pattern of population in urban areas rather than in rural areas of the country as a result, srilanka came with multy ethnic society & it constitutes Sinhalese, Tamils, Srilankan moors Burgers & others.

The main capital, administrative city of the country is Colombo and the other major cities are Jaffna, Kandy and Galle situated in different localities.

Demography and Economy

At the beginning of the Twentieth Century the country had a total population of 3.566Mn and has come to around 19.0Mn in the year 2001. Population growth rate of country is 1.14% & urban population growth rate is 3%. The urban population in the country constitutes 30% of the total at present & it is likely to reach 45% and 65% by 2015 & 2030 respectively.

According, to the population projections by Department of Census & Statistics on various status indicated that the population size in the Country in 2031 would be fluctuating between 23.0Mn to 25.0Mn or maximum of 27.0Mn under special circumstances. The two significant factors contributing to this increase have been natural increase and the net migration.

Present population density in the Country is 317persons per sq.km (2006). Average household size in this context is 4.31sqm.

Life expectancy at birth, of a Sri Lankan is 74.8 years & for male 72.81years and 77 years for female. This factor is projected to increase. According to the Department of statistics, the aged dependency ratio has increased from 9.4% in 1946 to 15.4 in 2001 and expects to increase to 41% in 2041. According to latest statistics, the population component under the national poverty line in Sri Lanka, has been reduced from 27% to 22% during the last five years, while the per capita GNP has increased from US\$ 858 to US\$ 1197. Furthermore, the annual growth rate of GDP of the country has been maintained at an average of 5% during the period from 1996 to 2000, while the average level of investment and savings during the same period recorded 25% of GDP. Furthermore, in order to create a conducive environment for foreign investment in all sectors relating to human settlements development, the Constitution of Sri Lanka provides guaranteed protection.

Sri Lanka is at present in a critical stage in the evolution of its society and economy. An effective physical planning and urban spatial strategies are to overcome the difficulties in future.

Shelter Related Facts and Figures

The national ratio of home ownership in Sri Lanka is 80%. However, in urban areas it stands at 60% due to the high value of land, usage of large stock rental housing and other categories of shelter. Apart from 80% of home ownership 70% structures are permanent & 30% is slums & shanties.

During the intercensal period of 1981-2001, in the 18 districts, with the enumeration was completed, the number of occupied housing units has increased from 2,490,114 to 3,969,211 by 59.4 percent.

Occupied housing units and intercensal increase 18 Districts, 1981 and 2001

Occupied housing units

District	Census	Census	Intercensal increase	
	1981	2001	Number	Percent
Colombo	272,489	473,045	200,556	73.6
Gampaha	265,954	475,847	209,893	78.9
Kalutara	160,423	245,784	85,361	53.2
Kandy	178,381	291,454	113,073	63.4
Matale	68,208	108,566	40,358	59.2
Nuwara Eliya	122,829	164,886	42,057	34.2
Galle	146,386	229,521	83,135	56.8
Matara	121,766	174,712	52,946	43.5
Hambantota	80,496	126,362	45,866	57.0
Ampara	77,978	132,371	54,393	69.8
Kurunegala	263,504	376,352	112,848	42.8
Puttalama	105,171	174,737	69,566	66.1
Anuradhapura	107,915	186,697	78,782	73.0
Polonnaruwa	48,183	90,999	42,816	88.9
Badulla	120,194	185,268	65,074	54.1
Monaragala	51,551	95,966	44,415	86.2
Rathnapura	158,693	242,882	84,189	53.1
Kegalle	139,993	193,578	53,585	38.3
18 Districts	2,490,114	3,969,027	1,478,913	59.4

Source: Census figures 2001

Table1: Number & percentage of occupied housing units

District	Total Occupied Housing Units	Type of Housing Unit					
		Permanent		Semi permanent		Improvised	
		No.	%	No.	%	No.	%
Total (18 districts)	3,969,027	2,771,860	69.8	1,123,003	28.3	33,799	0.9

Table2: Number & percentage of Huts & Shanties by Districts

District	Total occupied housing units	Sector		
		Urban	Rural	Estate
Total (18 districts)	3,969,027	488,365	3,262,505	218,157

Source:UDA Srilanka

The demand for houses & urban infrastructure is expanding rapidly with the population growth and urbanization. Studies have revealed that urban centres now occupied about 8.35% of the total land area and rural settlements nearly about 15.3% of the total land area Collectively, they account for 23.65% of total land area. Therefore, it is very clear that urban and rural canters have to be planned in an integrated manner, because an additional land area of 34,000 Ha. required for residential purposes and about 52,000 Ha. is required for the provision of urban facilities. In general the settlement structure of the country would occupy about 25.0% of the total lands in minimum. This could go up to 30.0% in the year 2030. This implies that minimum of 86,000Ha of "New" lands needed 2030 to cater to the addition of 1.335Mn housing units by 2030. In 2030 there will be about 5.2Mn to 6.0 residential units in the country. With the expected replacement of 55.0Mn percent of existing housing stock it is projected that approximately 3.5Mn housing units will have to be constructed over a period of 30 years to meet demand.

Table3: The area,population density & growth rate of the City of Colombo.

Census	Extent (Ha)	Population	Density (P/Ha)	Growth Rate
1871	2448.6	98847	40	-
1881	2448.6	110509	45	1.18
1891	2448.6	126825	52	1.48
1901	2720.6	154691	56	2.2
1911	3091.1	211274	68	3.66
1921	3350.3	224163	73	3.16
1931	3368.4	284155	84	2.67
1946	3438.4	362074	105	1.83
1953	3593.9	425081	118	2.48
1963	3710.4	511639	138	2.04
1971	3711	562430	152	1.24
1981	3711	587647	158	1.45
1994	3729	721443	193	1.75
2010	3729	1000000	268	2.42

Source:UDA Srilanka

Type of Structure

Type of Structure of the existing occupied housing units in 18 districts 86.3 % are single houses. 5.4 % are row houses/ line rooms and 3.5 are attached houses. Nearly 97% of housing units are used only for residential purposes and a very small percentage is used for both residential and commercial purposes (3.2 %). About 69% of the occupied housing units in urban sector and more than 93 % in rural sector are single houses but in the estate sector more than 64 % are row houses / line rooms.

Household composition

There are 4,054,385 households in 3,969,211 occupied housing units in 18 districts. More than 98 percent of the occupied housing units, in all the three sectors have one household and a very small number of housing units have two or more households. The average size of household in the 18 districts is 4.2 persons and the average occupant per room is 1.1. Comparison with 1981 Census figures reveals that the average size of household has reduced by 0.7 from 4.9 and average occupants per room has also reduced by 1.0 from 2.1

Principal materials of Wall, Floor and Roof

Out of occupied housing units 52.7 percent have walls constructed with bricks and 20.0 percent have walls of cement block. The percentage of occupied housing units having cement floors is 75.1 and 19.6 percent have mud floors. Tiles are used for the roof in 54.8 percent of occupied housing units. The corresponding percentages for asbestos and metal sheets are 18.3 and 14.1 respectively.

Access to cost of basic services/infrastructure

In terms of education, differently able children have to face lots of difficulties due to their inaccessibility to the main stream of education.

Table 4 presents some essential figures describing the current Infrastructure & Basic services of the country.

Particulars	Figures	Remarks
<i>Water supply & sanitation</i>		
<i>Access to safe drinking water</i>	71.5%	(2004)
<i>Access to pipe born water</i>	28%	(2004)
<i>Electricity</i>	73%	(2004)
<i>House holds with electricity</i>		
<i>Communication telephondensity</i>		
<i>fixed lines</i>	5 Per 100persons	
<i>Cellular Phones</i>	16 per 100 persons	(2004)
<i>Internet & Email</i>	4.5 per1000 persons	
<i>Public health</i>		
<i>Gov"t expenditure on public</i>	1.695 of GDP	

Table 4 Basic Services & Infrastructure

Housing Policy

The long term housing development policy, as indicated in the Ten –year Vision, envisages meeting a large part of the backlog and growing demand for houses. The policy aims at ensuring planned human settlements taking into consideration the population density, land suitability and environmental suitability. Adoption of vertical development approaches in high and medium density areas, implementation of participatory approaches wherever possible ,developing housing finance market with primary and secondary mortgage financing facilities and providing government assistance for needy groups also constitutes the housing policy.

Taking in to consideration of the settlements in urban areas National housing development Authority -Srilanka have been implemented several housing programmes to over come the necessity.

- ***Urbanization & provider approach***

In urban undeserved settlements, a provider approach needs to be pursued in order to release prime lands for other urban development while providing the alternate housing

This programme has to fulfil the urbanization that is taking place at a rapid speed by putting up high rise buildings and structural design as those high rise building has to accommodate open spaces as far as possible.

- ***Urban renewal & construction of flats/relocation***

This programme will aim to develop substantial number of low density, dilapidated settlements or flats located within the inner city areas in a planned development effort. The lands released would be used for appropriate development projects thus maximizing the utility value of these valuable lands.

- ***Construction of flats/ Housing for sale***

This programme will aim to cater to the demand for “Ready to occupy” houses where a huge demand exists. By adopting the “pre-sale” method of housing and the land available with National Housing Development Authority or to be acquired by it the resource utilization by National Housing Development Authority could be optimized.

- ***Public Servants Housing***

This programme aims to provide housing facilities within close proximity to Colombo for the large number of public servants who travel daily to office spending a larger proportion of their time on travelling. The public servants would be given houses on concessionary terms and cost of land would be taken at subsidized rates in determining the price of houses. The provision of houses for these public servants would save the unproductive time spent on travelling and also ease the demand on long distance public travel.

- ***Site & service blocks with housing assistance***

This programme National Housing Development Authority mainly aims to cater to the low and lower middle income groups living in urban settlements which will not be covered under the earlier mentioned programmes.

The programme would deal with regularization of tenure, rights of tenure, provision of basic amenities.

- ***Low income community development programme***

Under this programme agencies like JOVC, JICA, USIP, UNICEF would extend financial support as well as human support through volunteers for educating and improving the living standards of thickly populated low income

settlements in and around the city. The community development programmes conducted under this programme would immensely benefit the people living in these settlements to improve the living conditions, health and sanitation, safety and to become better citizens in the society.

Actors in Shelter Delivery and their Roles

Housing in Srilanka has not been acting as an ‘object’ , but it has been performing as a self maintaing process.Hence the contribution of the building industry in housing is recorded very low. House are constructed mostly by consumers. Especially in the rural context, it is an incremental process. Therefor dynamics of housing “needs” are represented by the housing policies in Srilanka rather than that “demand .Following are the key actors in provision of urban housing:

(a)Ministry of Housing & Common amenities - Srilanka is a macro level actor in housing sector & thire mission is Formulation of National Policies on Housing and Construction and ensure effective implementation of them

Subject & function

- Implementation of Policies, Plans and Programmes in respect of Housing & Common Amenities
- Planning Housing Schemes and provision of amenities to slums
- Guiding rural masses in cost effective house building technologies
- Implementing and co-ordinating settlements and housing projects for fishery and plantation sectors
- Slum clearance and resettlement of slum dwellers
- Management of condominium property leading to enhanced condominium industry and assisting local authorities in management of cluster settlements
- Provision for Machinery for Construction Industry

(b)National Housing Development Authority

National Housing Development Authority (NHDA), was set up under the provisions of Act No.17 of 1979 and the objects of the Authority being,

Reaching urban poor through the strategies such as upgrading, regulation of land, site & services, construction of flats & houses etc. Apartments are also released to the

public on concessionary rates. The NHDA functions under the purview of the Ministry of Urban Development Housing & Construction

(c) Urban Development Authority established under UDA Law No. 41 of 1978 is empowered to prepare development plans for urban areas. It is the main regulatory body for formulation of policies programmes & projects in respect of physical planning & urban development & assist in implementation of such programmes & projects. UDA is the main regulatory body for preparing zoning & other planning & building regulations. Accordingly development plans provide guidance for sub-division of land, preliminary planning clearance, safety, accessibility, parking, firefighting, light & ventilation, sanitation, water supply etc. Apart from that “form c” of the development plan provides statutory guidelines for No. of floors, building height, road width, rear space plot coverage and floor area ratio.

(d) Urban local Authorities are responsible for provision of basic utilities such as water supply, drainage, waste disposal etc.

(e) Real Estate Exchange (Pvt.) Ltd. (REEL)

This company was formed as the management arm of the Sustainable Township Programme (STP). The sustainable Townships Programme is expected re-house more than 50,000 out of the total of 66,000 households currently living in slums and shanties in the city of Colombo in fully developed modern mini-townships, without burdening the beneficiaries or the state.

Organization

The **Central Engineering Consultancy Bureau (CECB)** is a semi government organization in Sri Lanka was founded in 1977 as a statutory organization, to cater to the growing need for multi-disciplinary consultancy services, in Sri Lanka. It has different sectors & provides wide range of services, such as Buildings, Transportation, Roads Bridges, Ports & Courts, Airports, Town Planning, Water resources & Irrigation. The Organization has a Wide Experience in designing and construction of all types of buildings from the simple to complex and entire townships. Its role varies from project identification and planning, detailed designing, implementation to completion.

It gives the full package of Architectural, Structural and other technical support for reconstruction programmes, mass housing programmes throughout the country, using its thirty years of experience in the process. Accordingly, this institution handles several low cost housing projects & resettlement programme, in up country area & southern part of the country.

Shelter Problem

In the design of single family dwelling, the identification of different interest & values may not be too difficult. But in large scale housing projects, with a large number of people different & conflict objectives & values exists. Hence inevitable changes began to occur when they move into these housing schemes. Lot more ongoing housing schemes & past precedent revealed 90% of housing schemes have under going user modifications. They modify their given environment to suit their personal requirements such as Adding , Subtracting, Changing , Reorganizing. The other problem is the common left out spaces (Condominium Parcels) of hosing schemes being used for lot of crimes, misuses & other un ethical things.

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.

Thus it is important to study the modifications people do to what is given to them & areas which they are much concern. Feed back on the completed project revealed those modifications are in two major streams,

1. Modifications to the individual units
2. Modifications to the common spaces which are mostly identified as **‘left out spaces’** in the scheme

Lost spaces are the no man’s land along the edges of freeways that no body cares about maintaining

(“Roger taracik ,pg.3)

Modifications in individual units can be divided in to two, : Internal Modifications in the unit & External Modification in the unit. User modifications to the individual units occurs according to the needs & life styles of occupants, in order to full fill

their psychological , physical social & cultural aspects and to create intimate perception of home beyond the parameters of mere housing.

User modifications to the left out spaces are mainly occurs due to the issue of security, territoriality, & privacy. Lot more ongoing housing schemes & past precedent revealed these common spaces like nook & corners, passages, dead corridors, abandoned water fronts, murals & statutes, Stair cases , lobbies& public bathing spaces , are ill defined within measurable boundaries; fail to connect elements in a coherent way.

This problem is more acute in apartment complexes when vertical growth occurs. This issue is not a problem to the individuals it effects to whole inhabitants of the scheme.

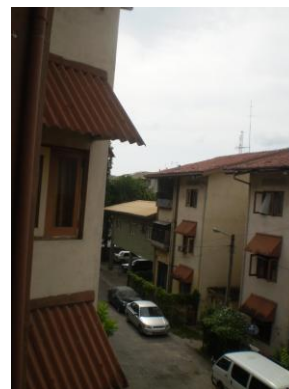
Within this background, it is my ambition to study & identifying the” **left out Spaces**” & user modifications in completed housing projects & how it can be improved for better usage.

In this study I hope to study modifications as a part of the physical environment. They are tangible & much of the adaptations could be observed as they are modified built form Thus the method adopet for this study is mainly consider on the detached observations, unstructured interviews of occupants , photographic & sketches of on going middle rise housing scheme in srilanka .

Commonly used areas for modifications

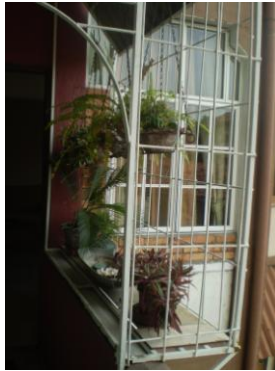
Case study as a model Housing Scheme at Alvitigala mawatha Colombo 3D Form

In this scheme most of the blocks were paralled to each other. Court yards 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. When considering Alvitigala housing scheme, blocks were rigid, paralle and located at close proximity to each other . So it disturbs the visual privacy



(Fig 1 –Paralled blocks disturbs the visual privacy)

In this scheme grate 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.



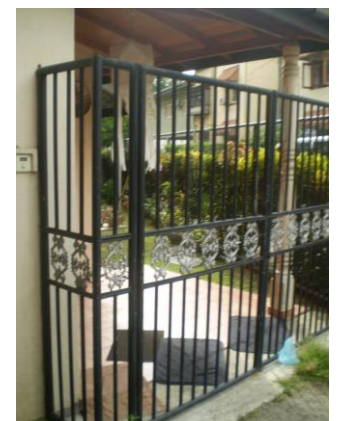
(Fig 2 –Identification by adding canopy with flowerpots)

Opening 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 3 –Projections makes maximum spaces)

The ground level dwellers have encroached the lands near by 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 4 –Entrance porches – way of expressing identity)



(Fig 5 –Common stairway lobby as drying yard)

In type D Dwellers In same floor have used common stairway lobby & railings as drying yards.

In this scheme stairway back wall has covered by brick wall .



(Fig 6 –Covered Stairway –

Proposal for Change & Improvement

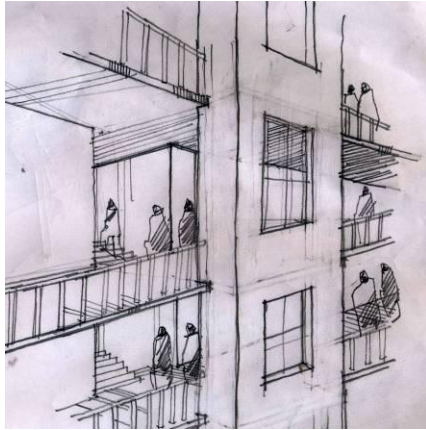
In the design process an Architect has considerable role to the final product & it would be the responsibility of professionals to find out innovative solution to create a habitable housing unit. Initial stage of the design, consideration of community level opinions, desires are important to give best solution. Ultimately Architect shall prepare conceptual design proposal by taking in puts of them.

As Individuals choices, are deferent introduction of deferent types of housing units may be a positive solution to minimize modifications.

In this type of social housing, inhabitants are very much preferred to a self identity of thire Units. Therefore introduction of flexible building materials with

different colour codes in initial stage may be a solution for minimize ad-hoc modifications & haphazard development of the scheme.

According to my knowledge when considering impact of location, layouts, housing units detailing & 3D composition.layout pattern it should attempt to maintain the privacy, identity & territoriality of occupants.



Sketch 1

Semi Enclosed staire way lobby avoid possibilities of future expansion of encroachment

Certain 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 in the individual units contrast when comparing with common spaces in the scheme.

Transparency gives a sense of openness & security



There for the overall form of the complex should have an enclosure within a certain solid void relationship, & have a flexibility to do so.Orientation of the blocks should

be done carefully to maintain the visual privacy. For instance the spaces would not be visual privacy.

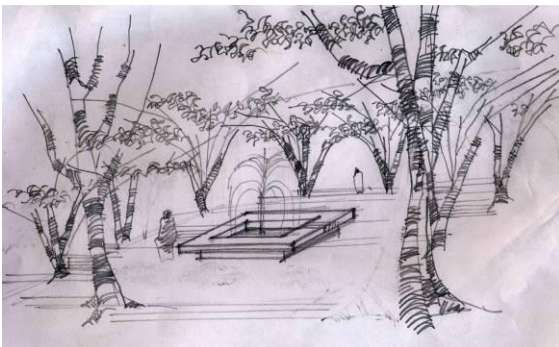
Considering the 3D form a certain degree of defining the territoriality is necessary to evoke a feeling of security among the occupants. Having physical territorial boundaries would bring about a sense of security and belonging allowing them to defend their place of unwanted intrusions.

Not only the type plan of the scheme & layout pattern ,Landscaping & boundary wall also much important as it affect to create hidden when they badly designed . At the beginning need to think about type of trees which are going to introduced & location of name boards, banners are much important.



Sketch 2

Right positioning of name boards, banners avoid misused spaces



Sketch 2

Appropriate Landscaping is essential as it minimize hidden spaces for mis uses

Providing common storages with individual ownership in same floor level as a solution for encroach of the spaces with relating to their social & economic strata.



Provision of activity at the Edge of the block create Livable space



Individual locable storages at the ground floor minimize encroach common spaces

As an Architect in the leader in design process it should a necessity to obtaining desires, necessities from the communities whom it serves & come with appropriate design solution.

Sketch designs can be developed through group discussions with the help of other relevant resource persons as, Engineers etc.

This misuses can not be avoid with the design solution it also come up with the management level solution of the scheme.

In Srilanka there are several Government Laws & acts which have been formed to minimise & over come those problems. Apartment Ownership law, Condominium property law & newly formed condominium Management Authority are some of the most important, but to what extend those laws address the above issues should be studied as well.

Establishment of an effective Monitoring mechanism to control the alterations & encroachments is a requirement.

Therefore I feel that having a study of this nature, would enable the Designer to come up with solutions of robust, flexible spaces in the design stage it self.

References

Finding Lost Spaces By Rodger Trancik

Public awareness hand book on condominiums by Athula Wimalaratne

An evolution Study of the design aspects of Hantance housing Scheme 13, Non publish
desertation, Msc final year examination 1998, university Of Moratuwa Srilanka

Arch. Domingo, Jayantha 1995 "Architecture, Architects and Housing" The Sri Lanka Architect,
Journal of Sri Lanka Institute of Architects- Volume 101 No 12.

2005 The Sri Lanka Architect, Journal of Sri Lanka Institute of Architects- Volume 106 No 01.

The Sri Lanka Architect- Journal of Sri Lanka Institute of Architects-December-February 1995-96.
Volume 101 No 15

Annex: Action Plan

1. To achieve the goal short form basic is to assess and identify existing situation of user modification occurred in several middle rise apartments in Colombo sri lanka
2. The most considerable step is to look in to the advantage and disadvantages of the proposed modifications to the existing setup and put forward the improvements with further analysis.
3. The next step in to press down to insist further discussion to clarify doubts with feedbacks from Architect in my office.
4. Discuss & present the proposed improvements to the low cost housing projects to other in house professionals in my home organization.
5. After feed back of proposed strategies in design level present a paper to the CPD (Continuous Professional Development) events in SLIA to the other Architects in Srilanka.