

Sustainable Shelter Development for the Urban Poor in Sri Lanka

Facilitating Habitable Living Environment to the Poor, by
Strengthening Architects Role in National Housing Development
Authority in Sri Lanka

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A home is a warm, secure personal domain as opposed to a house which is merely an impersonal objective word. Home is where people eat, sleep, bring up their families, relax, entertain and express their individuality. But in large scale housing projects up to now one of the major drawbacks to the fulfilment of the primary needs is that the designer never meet the ultimate occupants of the proposed housing units. Emphasis is weighing more heavily on the demand for quality of design and planning of the houses, than on quantity alone. The Government launched several programs to solve this problem. The main arm for this scenario is National Housing Development Authority. But due to various situations, the main target role of the N.H.D.A has become diluted. The main Professional category of the Organization who take the responsibility about the qualities are an Architects and But unfortunately the role of them are hidden at the present situation. The main aim is the paper is to give proposals & solutions to the given problem by Strengthening the Architects role in the Organization.

Shelter Situation Analysis

Basic General Data

Geography and Administration

Sri Lanka named as the Pearl of the Indian Ocean, Situated Between 5° 55' & 9° 50' of North Latitude, Between 79° 42' & 81° 53' of East Longitude. It is situated very close to India. The Island is 435 km in Length and 220 km in width and has a land Area of 65,610 sq km excluding inland water bodies. Topography changes plains and lowlands in the periphery of central hills in the Centre. The climate is tropical with temperature in peripheral plains ranging the centre.

The Main Capital Region of the Country is Colombo Metropolitan and the Main Capital City is Colombo. The Colombo is the Main commercial financial hub of Sri Lanka. The area wise it is 37.7 sq km. Its vocational speciality, is being a coastal city of harbour, has helped it to achieve a significant position in the international trade as well. The Area of the City is 3,731.28 Hectares with population of approximately one million.

Demography and Health

Population of the Country is approximately 20 Millions and Colombo is approximately 1.5 Millions. And population density is 310 persons per sq km. Life expectancy is 71.7 years (male) and 76.4 years (female) and is projected to increase. Urban population has a higher growth rate in Colombo at approximately 30%, because of continuing rural to urban migration such as a response to better employment opportunities and better living conditions. Average house hold size is 4.31 persons. (2003/04)

Economy

The GNP/capita in Sri Lanka is 10,367 Rs Billion (2004) and income distribution is, Poorest home holders 40% shows 13.9% of the total income. And the Middle income under holds (40%) share 83.3% of the total income. The richest home holds (20%) share 52.8% of the total income. The world bank classified the the poor of the Sri Lanka is as follows. Population below US\$ (1) day -6.6% (1995), Population

below US\$ (2) A DAY 45% and the percentage of poor house holds 19.2 (2002

Data)

Public Expenditure,

,Item	95/96	2002
Non food item	2972	7298
Total average income	6376	13447

Table 1: Average monthly House hold expenditure

Shelter Related Fact and Figures

Access to Shelter,

The housing stock in the country is 114554 H.US (year 2001) .Permanent houses are 97703 in number ,Semi permanent houses are in 13063 number,Improvised houses are in 65 numbers and houses are in non classified In 3723 numbers.Homing needs of average population is 134.812 of autacoids .

Permanant	97703
Semi permanent	13063
Improvised	65
Non classified	3723

Table 2: Housing Stock -114554 H.US(2001 Year).

The Chart of Occupancy is as follows.

Occupied homing units	Units		Occupants	
	No	%	No	%
Collective living quaters	1.794	1.5	16.901	2.6
institutions	1.256	1.1	38.181	5.9

Table 3: Chart of occupancy

Housing Standards.

Permanent houses	97703
Semi permanant	13063
Improvised	65
Non Classified	3723

Table 4: Summary of Basic Housing Standereds.

The Government has classified a 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 = 6 sqm

Table 5: Floor areaas of housing units

Majority of house holds in the occupied hosing units (64% is owned by member of the house holds). The households are 21.1% house holds live in rental/leased housing units and 6% live rent free another 2.3% live in encroached condition.Housing units are as21.1% of rented and incased housing units, 6% of rent free and an other types,2.3% encroached housing units ,21.1% of rented and incased housing units,6% of rent free and an other and 2.3% of encroached housing units can be considered.

Description	Floor area (sqft)			
	700	800	900	1000
Construction cost (Rs classified s 100 per sqft)	700.000	800.000	900.000	1,000.000
Interest Rate	12.0%			
Repayment period	15 years			
Monthly installment (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 6: Paying capacity for housing

According to the above in order to afford minimum FL/Area of too sqft house average in come of person should be 2.5 , 200 that is 20% of the house holds. That belongs to main income group,Affordable no of house holds are 22,910 and the housing affordability ratio 5 : 1. The details of land identified as,total land extant of a city is 3729 Ha (gross area) and a land man rationis 2 perches. Some of completed relocation housing programmes are as in73 no,s of houses and they are as follows 352 in project Jalthara,87 no's houses in project Yakkala. In Sri Lanka ,building materials used in public housing developments are usually as:

Brick/ cement block /stone/ Cabook for walls,Plank/metalsheets/tile asbestos/concreteete tiles/clay tiles for roofs and tiles ,terrazo,ceramic for floors are normally used.Many Colombo 's have access to basic services and infrastructure.Access to safe drink water per cent is 71.5.

Existing Housing Policy,

The Government identified Policy goals are a actual achievement policies based on settlement meets,developing metro urban centres.Government lounded housing programmes are as follows in Sri Lanka.Developing &hand overing Housing programmes,Housing loarn programmes,Cluster housing programme,Settlement development,Programmes,HousingGrantprogrammes,Special housing projects,Housing roofing assistance programmes andRehabilitation and reconstruction programmes. Sustainable shelter Development for urban poor in Sri Lanka

Sustainable Shelter for All

Housing is playing one of the main roll with the mans primary needs. Became it seems as one of the major problems in 3rd world countries to day. City of Colombo is the main commercial Capital of Sri Lanka ,and most of the commercial and administrative activities are concentrated in it.Due to urban migration low and middle income population is increasing rapidly with in this core City.The temporary structures in an ad-hoc manner are becoming the shelters for them.Having a habitable house is a dream for these people.The result is the city limits become very congested and land values is high.It caused illegal and unplanned housing patterns.Due to this unhealthy settlement pattern caused non adequate infrastructure facilities , the result

unhygienic environmental conditions. It gives adverse impact on the overall city structure, socio-economic development and environmental conditions. The main aim is to solve this, and make a livable environment for the houses of the poor.

Government launched several programs to solve this problem. The main arm for this scenario is National Housing Development Authority. But due to various situations, the main target, the Livability of the houses become fast deteriorate. And the role of the N.H.D.A has become dilute. The main Professional category of the Organization who take the responsibility about the qualities are an Architects. But unfortunately the role of them are hidden at the present situation. My main aim is to give proposals & solutions to the given problem by strengthening the Architects role in the Organization.

Transforming a House to a Home

Housing is a Holistic Perception.

Housing is a term loosely employed to mean a broad spectrum of activities. Most often it is mistakenly identified only with house design of housing projects. But it can be further added that housing is a process, enabling the act of dwelling, establishing one's existence as appropriate for this living on earth in the form of making homes. Home is a dream, an emotional bond built – between the person and the world around him manifested through the dwelling. It provides the centre of the world or the point of references for individuals, identity.

These are the basic housing needs: (a) Shelter - Need for privacy, food consumption, sexual behavior, etc (b) Security - Need for stability, protection freedom from fear, structure, etc (c) Comfort - Need for freedom, reputation, prestige, dominance, dignity, attention, etc. (d) Socialization and self expression - Relation with people and places, homes and Neighborhoods, etc. (e) Aesthetics - Need for order, symmetry, floor, texture, systems & structure, etc.

Transformation of a House into a 'HOME',

Every one has a private existence as well as a public existence in their lives. The theory affects the living houses as well. In dwelling (the process), a house forms these two realms into particulate ratio, depending on the way of thinking, feeling and behavior of the occupant. It is in this process that a house gets itself transformed into

some. Within its private or personal realm, a house has essentially to satisfy a certain psychological requirements such as identity and territoriality to become a home. It is at this point that the occupant is transforming a house into his home, adjusts modifies and changes it continuously along with his changing needs. Growth of the city is due to the urbanization process, absorbing millions of people into it the reasons for this attraction appeared in many ways. However the growth rate is highest in underdeveloped, developing or third world countries, the city dwellers are, in terms of income, social and cultural backgrounds, forming a number of social classes. The urban poor, whose whole aim of city life is survival, share a major part of urban population especially in third world countries. The increasing population urban poor caused, the issue of land and space scarcity, insufficient infrastructure facilities etc. Perhaps the most important among these issues is the problem of housing; it is the urban poor and the lower income categories with their unstable economic conditions that are subject to this problem quite often..

Who are affected by the problem ?- (Urban poor or the homeless.)

Though the emotions, requirements desires and needs are common to all human beings, the society of Sri Lanka are in divided in to different levels based on income levels. They are the 'upper income, middle income and the low income levels income groups. The category of upper and middle levels have right of their own lands and houses and reasonable income levels. But these opportunities are mostly beyond the reach of the 'lower' income people in the society, automatically becoming the homeless ness group.

The Urban poor and the strategy for building a House,

Homelessness is mostly twofold. Lack of place to live is a quantitative problem And the other is, lack of opportunity in the place to make a home is the problem of quality. In the urban situation of Colombo the poor are faced with homelessness both quantitatively as well as qualitatively. For them, there are often very limited spaces to live. What are left for them are only a few square meters of land covered in a very temporary nature. Furthermore, such places do not have adequate services and facilities. The nature of this particular group is such that, they are not in a position to build those own places of living simply because they are poor. Day to day earnings of these poor people is barely sufficient for their daily expenditures. On the other hand to build their capacity, they have to find suitable land, that is the most scarce

resource in the urban context. Due to low – income levels the poor cannot afford distant traveling and thus have to settle in close proximity to their working places. As a result they have to live within the city limit where there is a very high demand for land. With the rapid concentration of people into the urban center, the Colombo city is faced with the problem of sheltering them with at least the minimum standards of supportive service facilities.

Who can influence ?,

With the above considerations, housing has been a prime concern in the recent past in Sri Lanka. The government launched massive housing programmes such as the hundred thousand housing programme and the million houses programme to meet with the shelter needs of the low income people, not only in Colombo but also in the country as a whole. The national housing Development Authority (NHDA) is the main arm of the government implementation of housing development projects and programmes. Through the N.H.D.A Government has involved to solve this problem in several ways.

These are the existing housing policies & Programmes: (a)Housing loan programme,(b)cluster housing programme,(c)Settlement development programme,(d)Grant programme,(e)Special housing project,(f)Housing roofing assistance programme,(g)Rehabilitation and reconstruction.

The Government has identified several solutions as follows: (a)Self-help Housing Programme.(b)Onsite upgrading of underserved settlements.(c)Presale housing by the state.(d)Relocation programme for shanty dwellers.

Identified forms of buildings are as follows:(a) Multy Storied Flats,(b)Four Storied Walkup apartments,(c)Two Storied Housing developments,(d) Core Houses (Single story).

Accoding to this methods single and two storied houses with self-help method is more effective for the user. But the scarcity of land in an urban context, the form of the building automatically goes vertically. The most effective space utilization is given in the form of 'Multy storied' housing. Affordability is a key factor to be considered in housing the urban poor. And, in flats along with the number of floors, the cost too increases. To reduce the capital expenditure there are some restrictions taken place, as poor supply of electricity ,services etc, being issue the flat rather uncomfortable for the human being. The other thing is 'the user' (low income) used

to live in a horizontal manner. Multy-stories and the high density resulted in unhealthy living environment, giving the feelings of alienation.

At the same time in this form of housing, the user participation in the process of house building is kept to a minimum, as flat entailing complicated methods of construction lies within the hands of professionals. As such, perhaps what is left for the occupant is only marginal interior modification in personalizing the given place. But in an urban context, vertical developments are the only solution to solve this problem. Thus, it is very important to create Livable Environment for this kind of development by establishing the role and involvement of the specialized professionals.

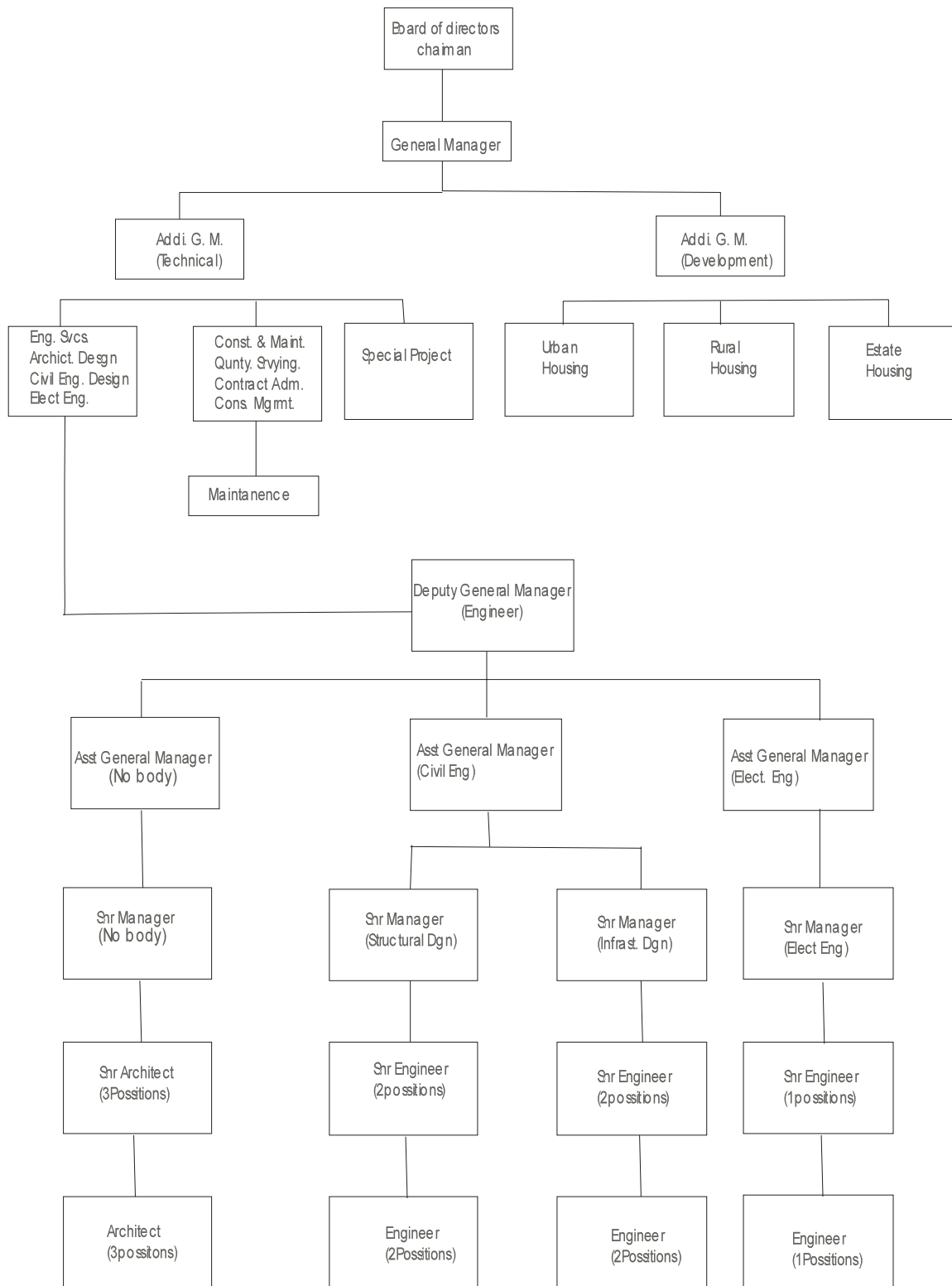
Private sector housing development in Sri Lanka,

This type of housing is mostly beyond the reach of the low and middle income people as the purchasing of such a houses involves a very high capital; therefore it mainly caters to the upper income people. The government intervention is very minimal in this process. The main hand is with the property developers. Housing at the same time user participation in this process is completely ignored.

THE NATIONAL HOUSING DEVELOPMENT AUTHORITY

NHDA is partly government funded organization with powers wasted upon it to generate its funds to invest on housing and related activities. Such an organization of function under a board of directors appointed by the Government, comprising of senior government officers including one from the Finance ministry and one or few political figureheads representing the ruling Political party. The president of the country appoints the chairman of the board With the concurrence of the minister. The general manager [G.M.] functions as the chief executive of the organization. Departments to perform different disciplines are headed by the deputy managers [D.G.M] who are supervised by two additional managers, one for technical related departments & the other for sectoral development departments

The Organizational Structure



The main target of the Organization is to provide a houses for the low&middle class people.In this process,the Professionals in the Organizations Architects,engineers, Quantity servayers,Planners and Loyers are being participated for this process to make a successive product.But in case of making Livability the Architects are the special trained professional category.Hence they have to play a vital role in this scenario. But the pathetic situation is the Organizational structure shows rather imbalance situation in the positions of Key professionals. That is the lack of Architects participation as compared with the Engineers & other professionals..

How is the problem affecting?

The absence of the Architects in the top level, quality of the works, became fast deteriorate, because the others consider only about the quantity for the rapid needs of the society. Therefore the quality suffers which aimed to be gained. Therefore, the key persons should have the capability of identifying the requirement of 'A Habitable Living Environment' of the particular living category.

The problems arising due to this situation are,ignore proper master plans for the developments and due to lack of feasibility studies and with out analysing of the projects in very early stages, most of the projects have been involved in very heavily monitory investment with less returns.,Decision- making with out basis,unplanned developments,Sudden developments caused Minimum 'user participation',Insufficient infrastructure facilities in the Urban and Rural.,High cost of land in Urban areas,Large informal unauthorized settlements in Urban areas,Increased migration of rural population to urban areas ,Misuse of housing loans / benefits ,Lack of focus on future forecasting and Lack of new township developments can be taken in to considerations.

Examples in the Presence

The ultimate product will not be suit to the user because there is no proper way to consider the user requirement so the prime needs has neglected. Small areas which are not comfortable for the user which satisfy the marginal requirement of the Spaces As an example Multy storied housing units, with out balconies makes people uncomfortable ,because people normaly likes to live with nature .At least user would like to have one flower plant', the fresh air' and the Sun light. But this kind of structures fails to satisfy the ultimate user.

And the high supply of demand caused rapid construction considering only Physical aspects for the Quantity- the main theme of the quality suffers.

Built environments (in doors and out doors) are deteriorating due to lack of proper standards and the use of uncoordinated materials or merely due to haphazard development of built environments. The high Housing demand makes close establishment of the Multistory buildings .This situation caused lack of proper infrastructure, proper road network, Services & infrastructure, fresh air & greenery.

Architects Role in the Housing Development Process in Making Habitable Living Environment.

Architects have heavy responsibility to society in satisfying present day needs which often fix the direction of future growth. The Architect to justify his appointment- should be Engineer, Artist ,Scientist and Sociologist fused in one role . How ever in no event can the Architect expect to master all fields of study.He will be one of the team of specialist in which team he should be prepared to accept a responsible position to co-ordinate. It is ultimately he who will be responsible to create the home and environment. Although resources are limited in Sri Lanka there is a lot that can be done by the Architect to accelerate the momentum of social ,environmental, cultural ,economical and psychological developments.

As a key personal (Designer & Administrator) of a Project, the Architects has to play the following task in each stages (Taken as a brief summary).

- | | | |
|-----------------------|--------|--|
| A. Feasibility | —————> | Site studies
legal consideration. (right of water,
Boundaries, light, ventilation) |
| B. Outline proposals | —————> | study similar projects
where are the constraints
try solutions assist in outline cost plan |
| C. Scheme Design | —————> | preparing of a full scheme design
preparing drawing or statutory approval |
| D. Detailed design | —————> | development of scheme design,
cost checking Production information preparation of
drawings, specifications, schedules etc. |
| E. Bill of quantities | —————> | sent all documents to quantity
surveyor for BOQ |
| F. Tender Action | —————> | arrangement of contracts
approval for tenancy
Tender action and appraisal |
| G. Operation on site | —————> | administer the building contract
financial reports with other team members |
| H. Completion | —————> | administer terms of completion
advise on maintenance
provide record drawings |

Proposal for Change and Improvement

The Organization should have to identify the capable Professionals who can drive the vehicle in the correct path. Indeed those are Architects, Who are empowered as the Key personals & get their maximum service to enhance the Quality and making decisions. Proposals for the problem. Should be get rid

- The inadequate opportunity for Architects to be more fully involved and serve more effectively in the national development efforts.
- The lack of recognition of the role and usefulness of Architects services.
- The usurpation of the rightful duties of Architects by others untrained for such duties.

Strenthens-Can be upgrade the quality of the Architectural works in the Organization.

Action Plan

1. The Organization should have to identify the capable Professionals who can drive the vehicle in the correct path. Indeed those are Architects, Who are empowered as the Key personals & get their maximum service to enhance the Quality and making decisions Architects involvement should convince the management to follow the proper way of the Organizational structure
2. Request the Organization to reorganize the Organizational structure.
3. Introduce the new methods to achieve the aimed targets.
4. Providing the training facilities for the uplifftment of the construction industry in terms of design, construction.
5. Making & Design evaluation procedure as a package & as a team of professionals.
6. Formation of a humane housing policy . Which attempt to be satisfied the certain requirements of the persons who will eventually occupy the buildings. These requirements may be broadly classified under 2 headings;
 - Psychological comfort
 - Physiological comfort

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