

# ECO-SENSITIVE

## APPROACH TO HOUSING- PLANNING ASPECTS

BY JAYANTHA DOMINGO



The main religious and cultural practices in Sri Lanka always promoted the essence of simple ways of life. The simplicity and clarity prevailed in the whole range of activities starting from food & clothing, habits, religious & cultural practices and further to the planning & design of built environment. This simplicity essentially has advocated limitations on the use of material resources in the day to day activities of the people. This in turn influenced the folk building tradition which is essentially the home building process of the people.

Since the settlements of the people in the past were basically in the dry zone they had to be located in close proximity to a source of water for the purpose of direct human consumption, the cultivation and the raising of animals. The source of water in this case was the rain fed tank (Weva).

Weva itself was a source of food in addition to being a source of water for irrigation. The houses were located in a cluster form which gave them social cohesiveness and sense of security and protection from the wild animals in the surrounding jungle.

Thus a minimum area of forest cover was cleared to allow for the human settlement and the production of food. Disturbance to the ecology was bare minimum. The people were very conscious about the importance of the continuous existence of the flora and fauna in the jungle and the water sources, on which they were depending partly for the supply of food and also for building materials for the erection of their houses.

The ownership of land was transformed from parents to children and sub divisions forming strict legal

and physical demarcations were not carried out. Hence in the traditional villages the land fragmentation did not take place. Thus group ownership of land prevailed in contrast to the individual ownership in the West.

With the colonization by West the crop pattern in the country also changed into a commercially oriented one based on wet zones. With the introduction of coffee, tea and rubber in large scale and the development of infrastructure facilities to reach these cultivations, the settlements started to get established in the wet zone.

The Sri Lankans who were quite at home in establishing their settlements in the dry zones were completely ill-equipped to face the new conditions prevailed in the wet zone. Hence they had to merely follow the British

settlement strategies and land sub-division systems. Although there may be other causes this was the main factor which encouraged the strict land sub-divisions with no proper concern or understanding of the particular topographical or climatic conditions. With the increase in population and the reaching of new infrastructure and basic services facilities to certain selected areas of the country, uncontrolled land sub-divisions started to take place in all the sub-urban areas initially and started spreading into rural areas subsequently.

With this background, if we look into the major events related to housing development which took place during the last decade or so, we can briefly discuss the major positive and negative impacts on the eco-systems which were results of same.

#### **STATE SPONSORED HOUSING DEVELOPMENT ACTIVITIES**

The major housing programmes which were initiated and implemented by the state basically fall under three categories.

- i. Programmes with direct intervention by state in planning & construction.
- ii. Programmes implemented by the state with user participation.
- iii. Housing loan programmes with minimum intervention in planning and construction by state.

Under the first two categories the government had the opportunity to do the overall planning both at the programme level and the project level and hence there was a good scope for the state to look seriously into the aspect of eco-sensitive housing development. This was possible right from the selection of sites, formulation of development strategies to the layout, planning, design of housing units and selection of materials and technology.

Most of the large housing projects which came under the first category are located either within the Colombo Municipal Limits or sub-urban areas within Colombo, Gampaha & Kandy Districts.

If we look into the aspect of site selection for the projects within the Colombo city limits and other urban areas they were low lying or unfertile lands. Hence the adverse effects to the vegetation which prevailed prior to development is not very obvious and immediate. Since all of them depended on the pipe borne water and pipe borne sewer & waste water disposal systems, the pollution of the ground water in the localities did not take place. One of the adverse effects which may have resulted is the blocking of the storm water drainage pattern in the area thus aggravating the situation of flooding during rainy season. The other projects which were outside the urban areas were located in coconut or rubber lands with the complete removal of the existing vegetation, thus damaging the prevailing eco-system.

Furthermore these projects had to depend on the disposal of sewerage and waste water within the project site. In general, since these lands were of undulating nature topographically, they were cut and filled to suit the type houses which were to be constructed thereon. Due to the extensive cutting and filling of land and macadamising of internal roads, the drainage patterns within the site and the surroundings has been disturbed. In some of these schemes the overflowing of effluent from sewer disposal systems have polluted the streams and the water wells in the vicinity and also killed the vegetation in the surrounding lands.

Further to this the large housing projects which were constructed within the Kandy and Nuwaraeliya Districts may pose a threat to the eco-system in the form of possible land slides due to erosion and disturbances to the endemic species of flora and fauna.

Hence selection of land for major housing development projects is a very sensitive issue which should not be done in isolation by the developer. The National Planning authorities should prepare land use policies and detailed land use maps where not only the basic division of land uses are indicated but also appropriate gradings of density to the identified residential zones are given considering the topographies, climatic conditions, desired densities and other special inherent features.

#### **LAND SUB-DIVISION UNDER HOUSING LOAN PROGRAMME**

The housing loan programmes of the state basically, came under two categories namely urban and rural. In the rural areas the housing loans were given mainly to the people who owned lands to build their houses. Hence strict sub-divisions were not forced upon the people by the state. Since the lands are not very scarce in the rural areas and the densities are low the pollution of ground water and erosion due to extensive cutting of earth did not take place in large scale.

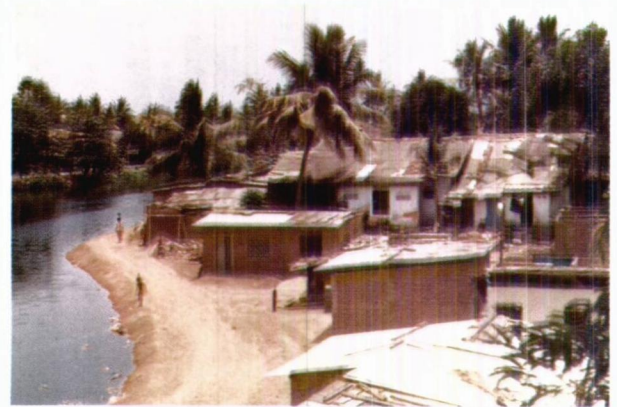
But the situation with regard to land in the urban areas where housing loans were to be disbursed was of entirely different nature. There were basically two strategies adopted depending on the land ownership pattern.

One of the strategies adopted was the upgrading of the existing sub-standard settlements (slums). The upgrading took place mainly in the areas of infrastructure and services and up to a certain extent in the raising of the standard of construction of the housing units. Although this could be argued as a legalizing of the existing slums, this has a positive impact on the eco-system at least for the time being in terms of improvement to the drainage system. Moreover the soft nature of interference do not bar the possibility of more organized developments in future.

The other strategy used in the urban housing loan programme was to provide buildable land lots having the minimum possible extent which paid no heed to the existing land sub-division regulations in the urban areas. The lands were sub-divided into lots having extents of 1 1/2 to 3p (40m<sup>2</sup>-80m<sup>2</sup>). This has created a complete chaos in terms of land fragmentation, insanitary light and ventilation conditions, violation of land use policies, storm water drainage problems & over-burdening of the existing services networks. Since the shanty settlements were essentially in the low-lying lands owned by the state or on the canal banks, the damage done to the eco-system by legalizing same would be enormous and diversified.



**Prior to upgrading.**



**During upgrading.**

### **A CANAL BANK SETTLEMENT**

The canal bank settlements were originally located with the rear of the houses facing the canal treating it as a place to dispose all the solid and liquid wastes. The upgrading of these settlements created a pathway between the canal and the houses and promoted the facing of the front of the houses to the canal. This strategy and the provision of pipe borne water and sewer facilities have minimized the damage caused to the eco-system previously. Hence this could be considered as a programme which is completely detrimental to the eco-system.

In the case of low-lying areas the unplanned filling which even encroached the flood areas has caused irreparable damage to the eco-system.

#### **SUB-DIVISION OF LAND BY LAND SALES COMPANIES**

The demand for land lots for housing in the sub-urban and the other areas where the national road and the electricity networks have reached has been on the increase during the last two decades and it has reached alarming scales in the last 10 year or so.

In the absence of a national land-use policy, there is no controlling mechanism over this, activity except for the local authority land sub-division regulations which will only look into the aspect of lot sizes, access road widths etc. The existing regulations on land sub-divisions also vary from one local authority to another and the officials who are dealing with this subject at local authorities do not possess a comprehensive knowledge as to the various issues connected including the specific lot size limitations.

Hence, it has become a lucrative business for the land sale companies who are involved in this at large scale. Hundreds of land sale companies have sprung up in the country even in small towns who started buying land from the land owners at very low prices and in the guise of selling serviced land lots they merely sub-divide the lands providing a network of internal gravel roads. The selling price of the so called serviced plots is about 3 times the buying price. The lot sizes vary from about 15p to 6p and even in areas where there is no pipe borne water supply or sewerage disposal facilities the lot sizes have gone down to even 6p. Since these projects have to depend on the well water supply, leaving adequate space between wells and septic tanks to avoid contamination and between the wells themselves to ensure a proper yield are vitally important. In addition to this the ground water is also getting polluted and dried up. These factors have been totally ignored by the land sales companies and the local authorities who allow such activities.

Moreover the clearing of the rubber and coconut lands indiscriminately has resulted in erosion of soil and silting of water courses and drying up of streams. These are direct negative impacts of the uncontrolled sub-division of land for housing by the land sales companies.

Further to the sub-division of high lands, there is the indiscriminate filling of paddy fields for the use of housing development activities. Although there are regulations against the unplanned filling of lands, mostly the enforcing of same is taking place only in the urban areas. Further to the direct adverse effect on the drainage pattern there is

an overall damage done to the eco-system as a result of this.

#### **LEARNING FROM THE PAST**

While critically looking at the ill effects caused on the eco-system by the unplanned over ambitious housing programmes of the recent past, at the same time it is also important to study the positive efforts taken towards housing development.

In the state sponsored housing programme there are certain environment friendly positive examples at both programme and project levels which need further evaluation in order to find strategies for a new approach to mass housing with minimum damage to the eco-system.

In order to encourage the rural folk to build houses using the traditional materials and technology inherent to different regions in the country, a national low-cost housing competition was conducted annually. Some of such houses were planned and constructed by the owner builders in the rural areas. Since this was a competition with new attractive prizes all the participants put their maximum effort to construct well-planned houses using the locally available materials and technology and a whole range of building materials such as wattle and daub, sun-dried bricks, stabilized mud walls, stone walling etc. for the walls and thatch, straw and country tiles for the roof. At the same time there was a conscious effort to plan out home gardens with proper surface water drainage and water sealed toilets. Much importance was given to the aspect of traditional detailing and decorative work while being cost conscious.



**Positive Approach to Rural Housing.**

The houses constructed country wide under this programme had the least damage on the eco-system and hence should have been promoted as a strategy. But quite contrary to this in the rural housing programmes of late, the owner builders were not encouraged to adopt these methods and also with the popularising of the

false values to use cement blocks for walls and corrugated asbestos sheets for roof the eco-friendly folk building tradition is on the verge of disappearing.

Similarly under the Hundred Thousand Houses Programme out of the large direct construction housing projects

which were constructed for the middle income people, there are several projects which demand of further study in terms of compatibility with nature.

They are:

- i. Hantana Housing Project in Kandy.
- ii. Bambarakele Housing Project in Nuwaraeliya.
- iii. Mattegoda Housing Project in Kottawa.
- iv. Gunasinghepura Housing Project in Colombo City.
- v. Maligawatta Housing Scheme in Colombo.



**Negative Approach due to False Values.**

It is quite clear that adequate attention has not been given to the study of the major housing development programmes of the past in terms of eco-sensitivity. This has to be done at the levels of planning of these settlements, use of materials and technology and design of housing units.

It is the wish of the author that this article will stress the need to study this subject much further.

“It has been argued that it is no longer sufficient that the design Satisfies the client, Can be built within the budget allowed, and earns the aesthetic approval of Architecture peers.

The designer of a building must also realise the responsibility that resides in making any part of the built environment, however small, that design for the few affects the many”

Brendon and Robert Vale, 1991