

Urban Renewal in Kollupitiya, Colombo

Implementation of Low Income Housing Project in Inner City Area

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Introduction

The process of urbanisation in Sri Lanka gave rise to three varieties of low income communities (tenement garden, slum garden and shanties) identified according to their neighbourhood characteristics. These low income communities are mostly occupied by valuable lands in the inner city areas. These houses are physically as well as economically obsolete. The Government of Sri Lanka has become to realize need for inner city renewal programmes and already identified 5 locations within the City of Colombo for this purpose.

Kollupitiya is located within the core of city and comes within broader definition of the Central Business District. This infact is the best area within the core and accounts for

- a) Highest land value for both commerce and high income residence.
- b) Relatively high environmental quality with ample water bodies.
- c) High potential for development as higher order commercial center.

The redevelopment of proposed study area (Kollupitiya) should be viewed in such context.

The objective of this paper is to analyse the physical and socio-economic problems in the Kollupitiya project area with special reference to the low income housing of the area and to work out the development strategies for implementation.

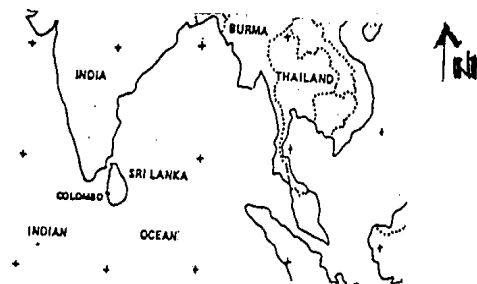
Special emphasis has been given in this scenario to relocate existing low income families in the area in better housing apartments at affordable prices to them. The method cross subsidization where share of financial returns obtained from other developments such as commercial and high income housing development is used to construct the housing for low income poor.

Background

Sri Lanka

The island of Sri Lanka is located just north of equator (see map1) and is about 64500 square kilometers in extent. The total population of the country is about 18.0 million. The country may be divided into two climatic regions. The wet zone is about one third land area of the Dry Zone.

Most of the hills are to be found in the centre of the Wet Zone. The average temperature in the hills is much colder than elsewhere. The highest peak is about 2524 metres above mean sea level. At the highest elevation frost is occasionally experienced. All the major rivers originate in these hills. The course of these rivers are not all confined to the Wet Zone. Many of them flow through the Dry Zone before they discharge their waters into the sea. Sri Lanka has a recorded history of over twenty five centuries.



MAP NO 1.. LOCATION OF SRI LANKA

2.2 Colombo

Colombo, the capital of Sri Lanka (see map1) is also the main financial and commercial centre of the country, its

location speciality, being a coastal city of harbour, has helped it to achieve a significant position in the international trade as well. Nevertheless, when it is compared with other major cities in the world, Colombo is still a medium size town. The city proper (Colombo Municipal Council Boundary) covers at present an area of 3731.28 Hc with population of approximately one million, representing nearly 4% of the national population. In addition to the residential population, there is a floating population of around 500000 consisting of commuter traffic and the flow from provinces for business and other purposes. A brief categorisation of various types of land use in the city is as follows:

Residential:	43%
Public Roads :	20%
Water Ways:	13%
Commercial :	06%
Others :	14%

Source : Land Use Map
Urban Development Authority, Sri Lanka

Urban low income housing problem in the city of Colombo is characterised by the lack of buildable urban lands affordable by the poor, lack of basic infrastructure and the existence of improvised housing. Out of one million city population, around 50% (about 500000 inhabitants) live in slums and squatter settlements under unsatisfactory housing conditions. Therefore this situation cannot be neglected.

2.3 Slums And Slum Garden

Slums are line tenements (single storied row houses) built in the early part of the century for minimal housing for labour forces migrated to inner city. These housing units are mostly located in the inner city areas. A single slum unit consists of a small bed room, a living area and a verandah. Clusters of these units are referred to as a 'Garden' having common water and toilet facilities. There are about 700 slum tenement gardens within the city comprising more than 250,000 inhabitants.

The slum gardens consist of old deteriorating houses other than tenement. They are usually found in inner city areas and have evolved from original residential areas by the affluent of the city. As they later gradually moved to newly established fashionable sub-urban areas, their former residences were rapidly converted into working class rental houses. The physical conditions of these

neighbourhoods gradually deteriorated over the time due to increased density, neglect and other such factors.

The Ministry of Housing and urban Development has identified a series of pilot projects in order to develop the unplanned locations of various activities which has created number of problems as follows:

- location of certain activities in inappropriate places
- gross under utilisation of very valuable and scarce land resource
- creation of unhealthy neighbourhoods specially in low income housing areas
- inadequacy of municipal infrastructure services etc

The pilot projects are to be undertaken for the purpose of the redevelopment of inner city areas for housing and commercial activities, creation of conducive neighbourhoods for those living in slum type substandard housing, making optimum use of land both in respect of extent and potential value and also for the mobilization of the expertise and resources available in the private sector for the purpose of development.

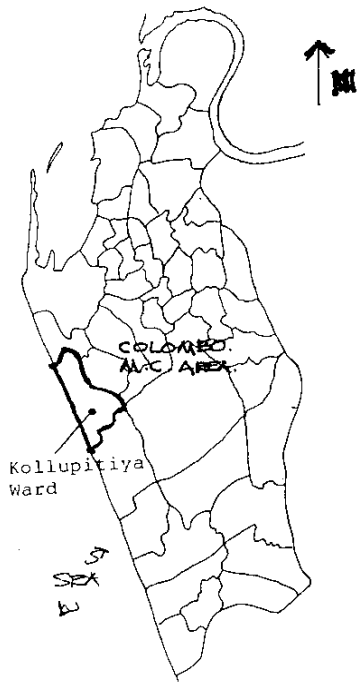
Kollupitiya (see map 2) is an area earmarked for such development by the above ministry. The basic problems, potentials, constraints and number of development projects have been identified to improve the physical, socio-economic, and environment in the proposed development plan.

3. The Problem Analysis Of Kollupitiya

Kollupitiya is located bordering the western coastal belt of Colombo (see map 2). The housing problem highlighted in the above (section 2.2 and 2.3) are manifested in the land uses of the Kollupitiya area. (see annexure 1)

Criteria used in identification of lands for proposed development are availability of high degree under utilised lands and high quantity of dilapidated type of buildings in the area a physical indicator.

The project area identified based on above criteria is 15.5 HC in extent. It is situated within the Kollupitiya Ward of Colombo Municipal Council (see map3). There is about 20000 residential population within Kollupitiya Ward. Apart from residential population there is a heavy flow of commuted population for the area for commercial centers and offices.



MAP NO 2. LOCATION OF KOLLUPITIYA

3.1 Physical Aspects

Land use

The total project area is situated on a higher elevation than the surrounding areas and in between 3.0 to 8.8 metres above mean sea level. The area is predominantly residential with a ribbon type commercial development along Galle Road which is one of the major road in the area. Some new commercial development has also taken place in various parts of the area.

Housing Conditions

The area is generally densely built up and except for some houses to the east and south east of the area (which are spacious and are of better quality) the majority of the dwelling units are row houses, tenement gardens and other slum type houses. Most of these houses come within the Ceiling and Housing Law (This law was enforced for mass acquisition of tenement garden houses belonged to the private landlords, rented out to the low-income people.) The rents have been very low and the land lords neglected maintenance of these houses. The occupants of

these houses are not economically sound enough to maintain their houses. This housing stock fairly old (Some are even more than seventy five years) and services such as water, toilet facilities and access paths are either lacking or are very much inadequate. Most of the houses are of poor physical quality. Moreover most of the housing units are single storied. The existing Floor Area Ratio is varying from 0.8 to 0.9.

Other Buildings

There are two warehousing sites within the project area, one located between Muhandiram Road and Kollupitiya Police Station premises and the other located between Hudsen Road and Alwis Place and extended upto Perahera Mawatha in the north. These will have to be moved out of the area and such a proposal is in conformity with the development proposals for the Colombo City where all the warehouses will have to be shifted to locations outside the city limits. There is also a clothe drying site and a laundry at the junction of R.A.De Mel Mawatha and Perahera M awtha where traditional sun drying method is used and large area is adopted for this purpose. This is considered a service which confirms to the residential nature of the area and will be modernised and suitably located.

Roads

The area is served by a number of public roads but except for Galle Road, R.A.De Mel Mawatha, St. Michael's Road, Perahera Mawatha and Alwis Place the other roads are very narrow. However one advantage is that most of the narrow roads are provided with 9.0 metre sanctioned street lines (area demarcated for future road widening in both sides of a road) by the Colombo Municipal Council and has even sanctioned a street 9.0 metre wide from R.a.de Mel Mawatha to Hudsen Road running in front of

the Buddhist Temple. The sanctioned street lines facilitate the development of the traffic and transportation system in the area.

Water Supply

The area is well served with a net work of water mains laid along almost all the existing streets. Though the facility is there, the cap acity both in terms of quantity and pressure is inadequate in some parts of the area.

Sewer and Storm Water

The situation as regard to soil sewer is also similar. Sewers are provided along all the public roads and the

capacities will have to be enhanced for the proposed development. A sewage pumping station is also located within the project area at the junction of R.A.De Mel Mawatha and St. Michael's Road and this is considered as additional facility in terms of the disposal of sewage. The surface drainage in the area is taken care of by opened or covered roadside drains as well as underground rain water sewers.

Electricity

As regards electricity, the area is well served with a good network of electricity cables, but here again capacities vary from area to area. An electrical switching station is located bordering Perahera Mawatha.

Recent Developments

A few developments mostly commercial have taken place in the area recently and these are located along Galle Road, St. Michael's Road and R.A.De Mel Mawatha. Some of these developments are multi storied and these will be integrated with the new development. The Walker's Garage site is very much under utilized and acts as a potential area for intensive development.

Environment

The area lacks a proper living environment and there is a serious shortage of public open space and green areas.

Heritage

There are plenty of residential, religious and commercial buildings which are inherited from the past (more than 50 years old) with good physical conditions can be seen throughout the Kollupitiya Ward. These buildings should have to be conserved.

Tennureship of Lands

Most of lands in the Kollupitiya area are belonging to the private owners. But the Government of Sri Lanka has legal powers to acquire any land for the development as which will improve the physical socio-economic and environmental conditions of the area.

3.2 Socio economic Profile

In the process of urban development the most vulnerable section to drastic changes in the land uses is the people who live in locations in which the physical conditions are poor. In this context, it is rather essential to consider the needs of such communities in social and economic viability of any planning proposal needs to be considered on priority basis

In the above context, socio-economic indicators can be used in order to highlight the characteristic features of this area, in addition to the physical and locational aspects of the same dealt with previously in this respect.

Land values

Although the estimated land values for Kollupitiya area was the second highest in 1981, the current land values in the area are the highest in Colombo. The potential market value of the land per Perch (25m²) being over Rs 1,000,000.00. (1 SEK = Rs 8.00) As most of the land area covered poor housing in very small parcels, the average being 2 to 3 Perches per block, the actual market value may be very much less. Further as a large extent of land is not owned outright, but vested in the occupants. The actual cost of acquisition will be much lower. However, the potential value after development will be far above Rupee one million per perch. This will be added advantage because the purchase value low and the potential value of the developed land will be varying high.

Demographic Aspects

The size of labour force, level of employment, income and earnings, expenditure patterns and the level of education attained by the community can be considered in order to ascertain the potentials and constraints respect of the nature of urban renewal programme.

A ten percent sample survey has been conducted in substandard housing locations in blocks marked **A, C** and **E**. (annexe 2) The fairly better residential areas located specially towards the east of the area has been excluded from the above survey. The area with good houses is smaller area than the area of substandard houses. This area has not been considered in this stage.

The population living within the substandard area is about 5200. Out of which 51% are males. Further 7% of the population is infants. 14% is in school going age group. 68% of the population is in labour force and 11% is elders. Basically having large labour force in the area is an advantage for the development of this area. Moreover 47% of the wage earners are engaged in permanent employment This is conducive in terms of their secure income which is a potential in obtaining better housing under urban renewal programme.

Income and Expenditure Profile

Furthermore, the income earnings of the households reveal that 78% of them earn a monthly income of over Rs. 4000.00. The capacity to pay for housing is taken to be 20% of the monthly income of the household. In this respect, It could be considered that the households having income of Rs: 4000.00 may be able to pay reasonable amount for housing. This is a good potential for housing development. Whereas 22% of the households find difficulty to pay housing, as they fall below the poverty level (below Rs: 2400.00). The above analysis indicates that although this community is living in substandard housing area, the income levels of the majority of the households show their ability to pay for better housing under the proposed renewal programme. Moreover, the expenditure levels indicate the spending capacities of the community, which in turn substantiate the income levels. In this respect 72% of households spend over Rs. 3000.00 per month on an average. The different categories of income and expenditure levels of households envisage that this community may demand different types of housing in this project area.

Housing Preferences

The majority of the households (80%) indicate that they prefer to live in single detached house. This may be due to the influence of cultural norms related to housing where Sri Lankans normally prefer to live in single houses rather than in any other type of housing. The rest of households (4%) preferred twin houses, 8% preferred row houses and apartment houses are preferred by only 8%. However, the proposed development will not be able to accommodate the wishes of majority due to scarcity of lands in the inner city area.

The survey also showed that the majority of the people indicate their willingness to live within the project area. This may be because 85% of the households have been living in this area for a period of over 15 years.

Education Levels

Another striking feature existing in this community is that 62% of the population had attained a level of secondary education, out of which 14% have reached the level of higher education.

This will be an impetus to enhance their income by deploying them in the project area itself under the redevelopment plan. Moreover, a relatively higher level of education will be an added advantage in maintaining the quality life and quality of the environment envisaged in the redevelopment plan,

3.3 Identified Problems

Numbers of problems have been identified within the project area for the purpose of analysis. The problems are grouped as follows:

- a. Problems related to physical aspects:
 - Dilapidated type of housing stock
 - Under utilisation of land
 - Lack of organized open spaces for the public use
 - Existence of narrow roads
 - Lack of vehicular parking facilities
- b. Problems related to economic aspects
 - No action has been taken to cater the increased demand of office and commercial spaces.
 - Lack of higher order commercial center within The area.
- c. Problems related to social aspects
 - * Over crowded and substandard existing housing stock
 - * Unwillingness of residents (low income) move away from present place of living which has high demand for other economic activities and for high income housing
 - * Preference of dwellers to live in a single house. According to the culture prevailing in Sri Lanka, most of families prefer to live in a single isolated housing unit. Due to scarcity of lands, it is impossible to consider this aspect in a practical way. Therefore designs of the housing units should be more attractive and should be more intimate to the need of the people.

4. Project Requirements

4.1 Potentials and Constraints

In the analysis of project area number of potentials and Constraints have been identified

Potentials

The following are considered as potentials, as all the factors are favourable in obtaining the high financial gain in the proposed urban renewal programme.

1. The land is being at higher elevation and it is not subject to floods. Most of areas in Colombo are subjected to floods. Therefore this is a very good

- potential for the development.
2. Very high land values after development which facilitates economic returns.
 3. Availability of good infrastructure network. Only augmentation of services is necessary.
 4. Easy access to the area by rail, road as well as from sea. (If necessary)
 5. Strategic location of the project area. The area is located in the Central Business District with higher order commercial center, office establishments with high demand and with better services network.
 6. Existence of old and physically poor dwelling units which can be replaced with better and suitable land uses.
 7. Most of dilapidated type dwelling units not being outright, but held on vesting certificates giving rise to less problems while acquiring the lands.
 8. Most narrow roads are having municipal sanctioned street lines which facilitate the road widening process of the proposed development plan.
 9. Very low compensation to be paid on acquisition. (According to the land law of Sri Lanka, escalation of land prices due to state involvement known as betterment not passed to the owner of the land.) which relax financial involvement in the process of development.
 10. Existence of commercial facilities at neighbourhood which gives more potential to attract more people to the shopping area.
 11. Availability of the Beira Lake (a scenic water body) adjoining to the proposed area which creates desirable environment to attract the people.

Constraints

The following factors have been retorted the development process. Therefore these factors can be considered as constraints.

1. Lack of resources

Main constraint of this project is raising of funds required for the development. The public sector is not in position to allocate all the funds necessary for implementation of the project. Possibility of joint venture with private sector may have to be sought in this situation.

Scarcity of land resources is the other constraint to be faced in this project. Design proposals are to be compatible with existing land resources.

2. Lack of co-ordination among institutions

The institution directly involved in planning and implementation of the project are operating under different ministries. Therefore the co-ordination among institutions will be time taking process due to existing hierarchical bureaucratic set up prevailing in Sri Lanka. Formation of a special task force representing all the institutions involved in the project may be a solution in this scenario.

3. Unwillingness of residence to move away

Majority of residents who are living in the project area are reluctant to move away from the existing locations. As proposed relocation site is located very close proximity to the existing place of living. People showed desire to some extent to shift with better Facilities.

4.2 Identified Projects

The problem analysis has been led to identify number of projects in the field of housing and development of infrastructure, in order to redevelop the area as per the broad objectives lay down above. The projects identified can be listed as follows.

a. Projects in housing and social infrastructure development

1. Construction of new houses for low income group at open area at Wekanda (see annex 1)
2. Construction of high income housing at the proposed project area.
3. Development of open spaces for play area and construction of community centre (meeting hall)
4. Upgrading conditions of existing schools in the project area.
- 5 Construction of commercial and office buildings with a provision to a modernised laundry
- 6 High rise building for car park

b. Projects in economic infrastructure

1. Road widening and construction of new roads, according to the proposed development plan
2. Augmentation of services (water, sewer, electricity and telephones) to meet requirement of the proposed development plan

c. Urban heritage safeguarding

Necessary actions to be taken to conserve religious,

commercial and residential buildings which are inherited from the past with some heritage value.

4.3 Setting Priorities

In assessing the technical and cost implications of the projects, priorities are set out in order to simplify the process of implementation.

Shifting of warehouse and clearing the site for development may be feasible at first instance, as there is no such cost involvement occur during the preliminary stage of operations.

Simultaneously, housing operation for low-income groups will be possible at the proposed site at Wekanda. (see annex 1) This operation will not be complicated process, as site at Wekanda is free from built structure. The cost component of low cost housing has to be met by the central government or the Colombo Municipal Council in fund mobilisation at preliminary stages of project. Implementation may be possible through auctioning the proposed sites to respective developer for commercial activities and high-income housing. Funds for improvements and suggestions of services may be obtained through loans or grants from the international financial institutions such as the World Bank, as these institutions are generally proposed to extend financial assistance for infrastructure developments.

Improvement of educational facilities within the project area (upgrading of schools) may be possible with the budgetary allocations of the Education Ministry.

Development of commercial centre and high-income housing may be feasible through joint venture programmes between the public sector and private sector. This is because the public sector alone cannot afford to meet such development due to financial constraints.

Considering the above facts, the projects can be set on the priority basis which will make planning and implementation of the overall development programme feasible and operational.

5. The Proposals

5.1 Objectives

The objectives of the urban renewal programmes are very broad. The followings are the objectives of the overall programme. But in this paper, I am focussing only the development of better housing for low income poor. The strategies and actors are identified only to develop low-income housing project and make sure its sustainability.

1. To develop area according to the development Plan.

The Urban Development Authority of Sri Lanka and the Colombo Municipal Council have jointly developed zoning and development plan for the City of Colombo. Proposed development projects have to be within the purview of the development plan.

2. To obtain optimum land use for the area.

Existence of inappropriate land use of the area has created most of lands in under-utilised conditions. The proposed development plan is to replace them with an appropriate land use which will become compatible with forgoing urban development.

3. To better housing for the poor.

Proposed development plan may replace existing housing stock with bad conditions in the project area and provide housing with better facilities which will enhance the quality of life of the dwellers as well as the quality of the environment.

4. To cater increased demand for commercial, offices and high-income residential spaces.

Being a strategic location of the project area, close proximity to the Central Business District of Colombo, there is high demand for commercial, office and high-income housing. Providing sufficient floor spaces for the above activities will make the project economically viable.

5. To attract more tourist for the area.

The Galle Road corridor has become popular among tourist from long time back. Whereas, no sufficient higher order commercial facilities are available in the area. The proposed development plan may be provided these facilities in order to attract more tourists into the area.

5.2 Strategies

It is clear that poor people cannot afford to purchase a house in such a locality, as market value of a housing unit is very high with high degree of demand. The

central government or the municipal council has to intervene in this situation and bring down prices of housing units through subsidy scheme. This may be feasible through cross subsidisation programme with other developments of the project area. (commercial and high income housing)

The Government budgetary allocations are not sufficient enough to build and provide low income housing for the deserved people in the city. One of the strategies would be to seek intervention private sector in the development process.

In the formulation of joint venture development programmes with the private sector, the government, in other wards the Urban Development Authority, the National Housing Development Authority and the Colombo Municipal Council who represents the Government of Sri Lanka in providing housing have to find land resources for such development projects to the developers.

Therefore in the acquisition and transferring the land resources to the private sector, always the Government will be benefited, as the betterment value of the land will be kept with the Government. (Undeveloped land values are considered in acquisition. It is always lower than the prevailing market values. Betterment is the financial obtain through the process.)

The excess financial returns gained through the transactions will be used for construction of low-income housing. Therefore low income people will be able to purchase the new apartments at affordable and subsidised prices. In this process the Government does not carry any financial burden in the development of low-income housing.

But the government has to invest finance for the low Income housing project as bridging finance at the preliminary of the projects. The cost of the housing project (amount invested) can be later recovered from financial gains from the other developments.

5.3 Actors

In this context, number of actors in formal sector as well as in informal sector are identified who will be directly employed in the development project.. The actors in formal sector are the Urban Development Authority (U.D.A.), the National Housing Development Authority (N.H.D.A.), the Colombo Municipal Council (C.M.C.) and on the other way residents, private enterprises and politician are in the informal sector.

Actors in the formal sector

a. The Urban Development Authority

The Urban Development Authority is operating at the central government level and it has legal powers to carry out number of functions which are directly link with the urban development of the country.

The functions can be summerized as follows:

- To carry out integrated planning and physical development within urban areas.
- To formulate and submit development plans, Including capital investment plans.
- To undertake execution of development projects. to formulate and implement urban land use policy.

The Urban Development Authority has personnel capacity in administratively as well as technically to carry out its responsibilities and duties in the urban development. In the case of necessity, the Urban Development Authority seeks assistance from private sector and other public sector organizations in planning as well as implementation of the projects.

All the municipal and urban councils, which operated as local governments in urban areas of the country, are functioning under preview of the Urban Development Authority.

Most problems experienced today are due to lack of land use policy and lack of development plans, which are not available for integrated development of the urban areas.

In this scenario, the Urban Development Authority can involve in preperation of development plan,granting necessary planning approvals for the projects, specially the housing project.

b. The National Housing Development Authority

The National Housing Development Authority was established in the year of 1978 in order to improve housing condition of Sri Lanka. The National Housing Development Authority is operating at the central government level with twenty-six branch offices at every district of the country. The National Housing Development Authority has statutory powers to carry out functions in

- erection, conversion, improvement and extention of any flat, house or any other living environment.
- sale, lease, mortgage or renting of houses

- clearance and redevelopment of slums, shanties, tenement garden houses and other buildings which are congested and insanitary
- Financial assistance for housing development

The National Housing Development Authority has personnel capacity to carry out the functions administratively as well as in technically in the field of housing. The head office at Colombo makes necessary policy decisions under the purview of the Ministry of Housing and Urban Development. And also the National Housing Development Authority is prepared to give necessary consultation services in designing and planning housing and housing related buildings. The branch offices are mainly responsible for implementation of the projects. Funds for housing mainly obtained from budgetary allocations, sale of houses and housing loan recoveries.

c. The Colombo Municipal Council

The Colombo Municipal Council has statutory powers to carry out the integrated development within the administrative area of Colombo. As all the municipalities are functioned under the Urban Development Authority, the Colombo Municipal Council has to cover most of duties and responsibilities of the Urban Development Authority. There are fourteen wards within the Colombo Municipal Council area. The Kollupitiya Ward is one of which where forgoing study is carried out.

d. Actors in informal sector

Number of actors can be identified in the informal sector. Primarily the residents of the area can be identified as main actor. The politicians are too playing major role, as they are representing the public in the formulation of policies and implementation of the programmes or the projects. Due to economic reasons, the government alone cannot involve in larger projects like urban renewal. Therefore collaboration of actors such as private enterprises, private organisations and non governmental organisations has become very much crucial in the implementation stage of the projects.

5.4 Design Considerations

House Design

Initially it is essential to start with for construction of housing units for relocating people of selected area in

order to release that area for proposed developments. Rehousing of tenement dwellers would be based on the new condominium housing units that would be made available in Wekanda Area (see annexe 3). Considering the existing living conditions and economic viability. Area of the proposed housing unit will be around 45 sq m. These housing units can be accommodated in a four-storied walk up apartment. There should be parking provisions for their bicycles and motor cycles, as most of dwellers are using bicycles. And also there should be day to day shopping facilities within the housing area. A housing block may comprise 16 units, containing 4 housing units in each floor. On this basis, there should be 52 housing blocks to accommodate all these units.

A housing unit will comprise two bedrooms. One multi purpose hall, kitchen and a toilet. There should be two sections in the toilet. One section for bath and other section for squatting pan. This will facilitate for two persons to use the toilet simultaneously.

Lay out design

Orientation of the buildings should be such a way that main axis of the building should be towards east – west direction in order to avoid the heavy sunshine into the buildings.

There should be open space at central location with easy access to all the occupants. A community hall and a play area can be accommodated within the area for common use.

Housing clusters should be designed such a way to improve social interaction of the people by using the neighbourhood design concepts.

6. Conclusions and Recommendations

6.1 Conclusions

High land values and high demand for the lands at Kollupitiya Area show the economic viability or feasibility of the housing project. Therefore it is very clear that the anticipated objective of providing better housing at subsidised prices for urban poor in urban renewal programme will be a satisfactory exercise.

6.2 Recommendations

In this scenario, number of recommendations can be forwarded to improve house designs and environment and for smooth implementation and maintenance of housing project.

1. Housing clinics may be a possible technique in order to increase the flexibility of the house designs. Individual requirements can be identified through this process and variations in the designs can be evolved within the given framework. Through this process, there will be provision to evolve architectural designs which intimate to the respective dwellers.

In the housing clinics, there is an opportunity for the proposed occupants to consult architects individually and to make necessary adjustments of the house designs to suits their requirements.

2. There may be different type of house designs in order to meet the requirements of different occupants. The house designs should express some sort of variety, flexibility and identity.

It may be possible to either increase or decrease floor area by adding another bed room or eliminating one bed room from the house designs. The alterations should have to be incorporated without disturbing the main structure of the building. The changes or alterations may be possible within the given module and framework.

3. Finishes of the house buildings should be maintenance easy materials. Especially floor of the houses should be cement rendered in order to create cold feeling inside the house.

4. Pipe borne water supply and sewerage system will be possible, as such facilities are available in the area.

5. Garbage collection should be done through central garbage collection point at ground floor level for each cluster of buildings. The Colombo Municipal Council is operating garbage collection within the city limits.

6. Relocation of people would be done on unit to unit basis and 832 housing units to be constructed to accommodate all the low -income families in the area.

7. The maintenance of condominium houses and the common areas of low-income housing is to be carried out by the Housing Management Committees (H.M.C.). The H.M.C. has to be formed in each cluster of the housing. The National Housing Development Authority has to form the H.M.C. from the future occupants before occupation and hand over the scheme at the time of occupation. The H.M.C. has to be registered as legal body in order to get statutory recognition. Initial deposit of money has to be in the account of the H.M.C. in the bank in order to meet immediate maintenance cost. Subsequently the H.M.C. can collect fee from residents periodically for future maintenance cost.

8. Operational action plans are to be worked out in detail before implementation of each project. The technical and costing details of the selected individual project, the authority and structure of actors of implementations, time schedules, resource imputes and review points are to be included in the proposed action plan.

9. Lack of co-ordination among actors involved in the urban renewal process has been always retarded the development process in Sri Lanka. Therefore it will be a suitable solution to establish a Special Task Force representing all the actors who are involved in the urban renewal process. The Special Task Force should have adequate powers in decision making and implementations.

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