

Housing and Improvement of Environment For Dwelling Units

By

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1. Introduction

Linked with the general problems of human settlements are the peculiar requirements of *each individual country, nay of each settlement*. The U. N. "Habitat" conference and various Seminars including the International Seminar on Low Cost Housing held recently at Madras had brought the problems of housing and environment into sharp focus. For developing countries like India housing and environmental improvement can become the greatest challenge in the next few decades. West Bengal alone would require about 0.5 million units a year in accordance with the recommendation of U. N. for construction of at least 10 houses per thousand per annum in the next 20 years. In India physical shortage of housing units is estimated to be 4 millions. About 19 million units are far below standards of habitation.

2. Financial Constraint

The Life Insurance Corporation is the single largest institutional financier in the matter of housing construction. The State Housing Boards function mainly as large construction agencies rather than financial institutions. With the Housing and Urban Development Corporation (HUDCO), a Central

Govt. Undertaking, coming into existence no loan is granted to the Housing Boards by LIC. The Apex Co-operative Society, another major source of finance, is also not in a position to finance any sizable number of schemes although co-operative housing schemes have been granted some remission from taxes and duties and other fiscal concessions to help the movement. Private investment in housing for various economic factors recorded an unfortunate slump in 1970s. With the general resources constraint and top priority given to the core sectors in India, so far as human settlement is concerned, there is a big gap between what should be and what is.

3. Economies & Innovation in Construction

To keep the price of houses within the paying capacity of Low Income and Economically Weaker Section households new design methods and modern techniques of construction acquired by extensive research should be put into practice initially on an experimental basis and then on a mass scale. The West Bengal Housing Board, which started only in 1972 and is still in its infancy, observes the following principles to minimise the cost of construction :

- (i) Judicious selection of materials of construction :
- (ii) Use of locally or easily available materials :
- (iii) Detailed investigation of foundation soil which is very necessary to ensure choice of correct foundation :
- (iv) Use of controlled concrete and twisted deformed bars for achieving considerable economy in the reinforcement work :
- (v) Use of prestressed concrete and precast units whenever possible as their use saves steel and cement : and
- (vi) Use of composite mortars, etc.

Experimental houses with use of $\frac{1}{2}$ -brick thick walls and 160 mm thick walls in 2-storeyed buildings have been constructed at Akra. The Board is further carrying on with experiments for using cavity walls with combined use of modular bricks and conventional bricks. Attempts are also being made for use of hollow precast blocks with composite mortar and hollow precast concrete units in roof slab. Experiments are being carried out for manufacturing flyash-sand-lime/cement bricks at Asansol. Pilot Projects will be started very soon at Asansol and Bandel. The Board has already embarked on construction of houses/flats departmentally without intermediate contractors. These can also be a great price reducing factor.

Prof. Miles Danby, Professor of Architecture & Director, Project Office, University of New Castle on Tyne, U. K., after inspection

of various Housing Estates in and around Calcutta was of the opinion that from functional, economical and constructional points of view these were the best he could conceive of. Marginal improvement and reduction in cost might be possible only after extensive research work. So long we have been able to complete $4/5$ storeyed walkup building with one-brick thick walls.

4. Alternative Growth Centres

While housing schemes should be implemented in the population intensive areas to meet the acute housing crisis, counter-magnets should be created some near existing urban complexes and some farther away. In fact the only answer to this seems to be to provide alternative growth centres with planned infrastructure. Industrial towns like Siliguri, Asansol, Durgapur, Haldia and Kharagpur should have satellite townships. Several fringe areas of Calcutta are being developed or have been planned as sites for future development.

But creation of alternative growth centres is a time consuming process. Meanwhile economic group housing in cities and towns appears to be the only course at present. Industrial workers and weaker sections should get first preference in the matter of housing. These people should be provided with houses near their places of employment as far as practicable, for they can hardly afford to pay additional amount for transport.

5. Area Planning & Improvement of Environment

Alternative growth centres pre-suppose planned development. Specially in Asia the situation is quite critical where each town and city already support many more men, women and children than is possible to accommodate

within the existing infrastructure. Many live in and are resigned to subhuman conditions.

To stem the rot, a certain minimum standard of life and certain basic level of amenities have to be recognised as essential. Our environmental problems are results of inadequacy of development. There cannot be two opinions that a planned approach to the healthy development of environment of a settlement is essential no matter whether it is in a village, a town or a metropolitan city.

It is always to be remembered that the desired needs of the people are to have good homes and not houses. In many cases they want to be close together in order to serve one another. Urban economic forces call for higher density. Biological needs work towards lower density and social and aesthetic forces work towards optimum conditions. In some cities people living with a density of 100 or so to an acre are in slums, but a density of 1000 to an acre in modern liners live in most excellent conditions. So density, although a major element, cannot by itself bring good standard of health nor it is an index of overcrowding.

Area planning calls for spatial planning taking into consideration the ecological conditions prevalent in different localities. Economically Weaker Section households will certainly prefer an open courtyard to keep domestic animals or for plying small trade. An extra room perched on the 4th floor of walkup buildings would be of little use to them. According to U.N. survey, in Asia the average price of land makes up a third of the cost of housing in big cities but only 1/10th of that in small towns. The norms fixed by HUDCO will indicate that houses costing more than Rs. 6,600/- will be beyond the paying capacity

of 93% households in India. The draft recommendation of the Indian Standards Institution indicates that we can have 162 dwelling units per acre in 5-storeyed buildings and 142 dwelling units per acre in 4-storeyed buildings for Low Income Group, whereas in a satellite township near Calcutta the limit is 60 dwelling units per acre. We in India are not in a position to invest large funds for an indefinite period of time. The minimum requirements of a Middle Income household might be a luxury for a Low Income household. While providing basic civic amenities for urban and rural housing schemes care must be taken to avoid ostentation to limit the amenities and spaces provided to the minimum requirement so that even the limited finance can be stretched to cover the maximum number of people. The Board is trying this on a limited scale and very strictly plans out its large Estates with a definite number of dwelling units, open areas, roads, proper sewerage and drainage and sometimes commercial centres and where possible community and recreation centres.

6. Improvement of Environment for Slum Dwellers, L.I.G. & E.W.S. Households

Ceaseless trek of people from the countryside to the towns in search of jobs leads to the creation of vast slum areas (bustees and shanties). These invariably lead to pressure on civic services, accumulation of filth at every corner and deterioration in the quality of services like water supply and sewage disposal with obvious pollutive effects on the environment. Even by creation of alternative growth centres the influx of people to the major cities and towns in search of jobs cannot be altogether stopped. The slum dwellers are required to be identified and each and every one of them has to be given an identity card with passport size photographs.

Mobilisation of enough resources to wipe out the entire housing shortage by public activities is not possible. Hence housing will always continue to be primarily a private activity. The houses of the poor in the developing countries have always been built by the poor themselves. That is why their houses, by and large, are only apologies for settlement and in many cases take the shape of slums.

In the metropolitan city of Calcutta undeveloped marshy lands or low lands are available only in fringe areas with very limited access to transport and other amenities and above all these are located away from the actual places of employment. High costs of construction including the cost of utility services and also soaring prices of land and construction materials are the deterrent factors which stand in the way of mass housing at reasonable prices.

Certain well planned developed areas with arrangement for improvement of environment in phases are required to be made available to LIG and EWS households. In this country economic development has to be done without alienating people from their life-style or nature from its recuperative quality. These along with the magnitude of the problem of housing the urban poor, will justify the slum improvement approach although it is nothing but an interim palliative measure. Where land is available near the location of employment, "Site and Services" and preferably "Core Housing" with scope for incremental development are two complimentary approaches. In these cases public and private activities are required to be perfectly synchronised.

7. Rural Housing

For housing the millions in rural areas, co-ordinated efforts of various organisations

appear to be indispensably necessary. Specifications are required to be laid down taking into consideration the locally available building materials. Construction of semi-permanent structures etc cannot be ruled out. Mud houses with stabilised soil, sun-dried brick or kiln-burnt brick, different types of ballas and scantlings supplied by Forest Deptt. for posts and rafters and Ranigunj pattern tiles, G. C. I. sheets and asbestos roofing may be a correct answer. If programmed and maintained properly along with sanitary latrines such rural housing schemes are likely to be comfortable and attractive for EWS households. Panchayets and local civic authorities, if there be any, rural electrification wing of State Electricity Board, Forest Deptt. and rural housing wing of the State shall perhaps have to work in complete harmony. It is perhaps necessary to prepare proper layout plans with enough scope for future improvement of environment. At least roofing materials, rafters, purlins and posts are required to be made available to the villagers by the Govt. In some cases construction of core houses, supported by demand survey, may also be desirable

Potable water has to be made available to each and every village. The sanitary conditions are required to be improved and transport and health facilities and other amenities are to be made available to them along with comprehensive area development including setting up of new small industries with adequate employment potential.

8. Conclusion

In the recent conference of Ministers for Housing and Urban Development held at Bidhan Nagar (Salt Lake) it was decided that there should be a national policy on housing,

and Rural Housing Corporation similar to HUDCO should be established as early as possible. In India, people would like to have a fixed place of residence with their close associates. That is why many slum dwellers in Calcutta as well as EWS households at Asansol will not perhaps like to have their own houses near the places of employment as most of them do not belong to this State. Economies in construction should be linked with economies in planning. In all our Institutions and Research Centres, research relating to indigenous materials, experiments on brick and brickwall, factory waste and flyash etc. should receive topmost priority. For rural housing extensive research work should be conducted with stabilised soil and locally available roofing materials.

In various States, State Electricity Boards at their own cost lay cables for service lines for making available electricity to the Housing Estates of the Housing Boards and land development authorities as well as civic authorities arrange for laying watermains and main sewers at their cost. In this State the entire cost has to be borne by the Housing Board whenever any new scheme is taken up for implementation. This results in increase in the cost of proper development of land with provisions for utilities and services. Hence, there is a

necessity for having a super-authority over the various development and administrative agencies now providing utilities and services in metropolitan cities, towns and rural areas.

While the responsibility of the private sector would be primarily for the individual house units, the public sector has to play fundamental role in making arrangements for water-supply, sewerage & drainage, waste disposal & transport. These are required to be considered as main elements of housing. For rural areas low cost solutions to the problems of sewage treatment and disposal are called for. The possibility of waste water recycling for irrigation, industrial and domestic use has also to be examined in details. Housing should not be considered only as an architectural or socio-economic problem. Activities for construction of housing units shall always make a substantial contribution to the gross national product. Well-organised concerted efforts are required to be made by the public sector for construction of as many "Core Houses" as possible for the L.I.G. & E.W.S. households in new satellite towns and housing estates. This should go hand in hand with the works of improvement of environment for dwelling units in over-crowded existing settlements.