

BUILDING CODES AND REGULATIONS AS THEY RELATE TO THE IMPROVEMENT OF THE LIVING CONDITIONS OF THE POOR*

by

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Background

In many developing countries irrespective of economic, social or climatic conditions, building codes and regulations form part of the statutory legislation of various government agencies. The codes and regulations have largely been inherited from those prevailing industrialized countries, either as a result of colonization or borrowed a result of overemphasis of urban investment and infrastructure at the expense of a more harmonious development involving both rural intermediate and urban locations. Many of these codes and standards were designed for different conditions and development of industrializing countries and within a different historical time frame. They may have undergone revision several times in the originating country without these revisions having been passed on to the recipient country. Therefore, many of them are irrelevant to all but upper-income residential areas, modern commercial structures and government complexes. They are inapplicable to the vast majority of the population living in hinterland villages, rural development schemes and slums and squatter settlements.

Many governments have adopted policies which called for the eradication of slums and squatter settlements, but this has not solved the problem. In many instances, where no alternative housing existed, the people merely relocated elsewhere and went through the same process of setting up another marginal settlement. In many countries, these settlements were considered outside the law and therefore were easily subject to harassment and removal measures.

The UN Center for Human Settlements (HABITAT) established as a result of HABITAT: UN Conference on Human Settlements, held in Vancouver from 31 May to 11 June, 1976 is playing a catalytic role in assisting governments in the formulation of standards and regulations more suitable to national and local needs, especially for shelter, infrastructure and services for low income groups. The UNCHS is conducting research on a range of topics including the availability and suitability of local building materials, shelter space requirements, alternative technologies for community water supply and sewerage facilities, energy use in settlements, local roads and lighting keeping in mind requirements for health and safety and available financial resources.

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Economics, Social and Qualitative Aspects

There is a consensus that conditions in developing countries relating to the application of building codes and regulations are the result of the developing countries having inherited these codes from former colonial structure or of having adopted these codes without much modification. Practical steps for the revision or design of new codes are of urgent importance. National and international action are required to stimulate developing countries in the preparation of codes and regulations more concomitant with the national development goals.

Most people in developing countries build without using codes. While there are some exciting qualities about towns that have evolved through time such as found in "medinas" and "suks", which were built to no codes at all, it is recognized that there is no time to build according to *laissez-faire* policies if we are to get ahead of the "hurricane" of shelter needs.

The fact that existing building codes and regulations incorporate standards that have little to do with the realities of low income settlements shows a need for considering the key factors of access for the poor to technical information, technology and finance.

The scientific bases for standards and codes may be questioned. It is a fact that even in developed countries the bulk of information on codes and regulations do not seem to be based on scientific knowledge. It is felt that codes are too static to be able to respond to the needs of people in order to improve their quality of life.

Existing building codes and regulations appear to be social institutions and hence enforcement procedures must be just. In particular, the acceptance of socio-economic quality of the informal and formal building sectors are unjust. The concept of injustice in this regard can be considered as a valid starting point from which to identify deficiencies in the existing codes and regulations and to develop a range of requirements which would form the basis for formulation of new codes and regulations. There is an agreement that present codes and regulations are unrealistic rather than just, but their enforcement in low income settlements may be considered unjust. The instrument of land use policy, financing and technical knowledge can be used to remove some injustices and others can be addressed by more flexible rules and guidelines.

The urgent need to provide codes and regulations for the development of low income communities requires the separation of shelter needs from those of infrastructure, services and access to land. Present codes and regulations do not affect the bulk of what is constructed in urban areas; they are considered inadequate or irrelevant to the needs of the masses and the needs of the disabled children and other special groups of the poor population.

The importance of utilizing local materials and developing traditional techniques will lessen dependency on imported products and expertise. This will require the modernization of existing regulations and regularize the use of local materials and labour intensive techniques.

Low income settlements are often located on lands unsuitable for residential development which is a further deterrent for code compliance. Often there is lack of access to sanitation and potable water, and existing codes not only do not apply

but may even be harmful. Existing low income settlements, however, improve when there is security of land tenure.

Technical Aspects

The major issue of technical aspects of building codes is the extent to which the socio-economic conditions of developing countries demand a different approach to the role and scope of building codes and regulations, and the extent to which the poor need technical assistance and finance.

The technical aspects form the link between the socio-economic considerations, legal, administrative and financial aspects and direct application and use of codes. They are extremely important and should indicate whether the graduated or step-by-step approach is feasible by a reappraisal of technical criteria.

Building regulations based on performance requirements can be used to regulate the graduated or step-by-step development of housing for the very low income populations. This will be achieved by encouraging research into the availability of resources and to monitor progress of the socio-economic condition of the target group.

Some countries have embarked upon large upgrading programmes that do not follow any existing building codes and regulations. For example, a program in Indonesia indicates that criteria for site selection for community upgrading projects are based upon city specific considerations. Residents of low income settlements are placed into groups which receive guidance and assistance with infrastructure, provision of water, health services and adequate shelter. After selection of areas to be upgraded on a priority basis criteria for each Kampong are applied and include the following considerations: the degree of flooding cycles, quality of water and water supply, sanitation, sewerage and drainage and health aspects of the community. Thus the Indonesian example is typical of those cases when the governments use of standards and guidelines as part of the regulatory process because the magnitude of the community improvements undertaken cannot be met by the existing codes and regulations. In such cases the upgrading effort is dealt with at national policy levels.

Legal, Administrative and Financial Aspects

Policies to benefit low income communities must be designed so as to incorporate building codes and regulations. Revised technical criteria for guidelines and regulations are necessary for directing such improvements or developments.

Clarity of codes and regulations is vital not only for those to whom they apply but for the invocation of sanctions as well as for providing incentives for compliance. In addition procedures should be clear regarding monitoring or infringements, violations and exemptions. Procedures for the submission and approval of building plans can be greatly simplified and streamline in dealing with simpler structures and techniques for the improvement of low income settlements. They should be designed so as to reduce delays and remove unnecessary administrative bottlenecks that have traditionally served as constraints on the provision of shelter to the poor. Government agencies concerned with the building industry require manpower and material resources commensurate with their responsibilities. Therefore, appropriate

professional bodies and educational institutions should be tapped for expertise and encouraged to develop those vocations and professions urgently needed for implementations of government policies. The expansion of the administration codes and regulations to embrace a greater percentage of the informal sector, will tend to modify the problems of dual society. Some innovative administrative machinery is required to respond to increasing expansion at the informal sector. This could only be accomplished by the use of decentralized community activities such as outreach services financed by governments and voluntary organizations. The most important aspect of the legal/administrative framework of codes and regulations is that all regulatory measures for compliance required from the poor be reduced to barest minimum and that the actions required by them as far as possible be unencumbered.

Education, Information and Training Aspects

A systematic approach to the areas of education, information and training requires that each country establish *codes and regulations* group whose responsibilities would include the revising, cancelling and editing of regulations. As recipients of information, codes and regulations, groups then could become clearing houses from disseminating information to producers of settlements including self-help builders, artisans and conventional firms engaged in building activities and to consumers of housing and to entrepreneurial groups involved in building activities, and to public services and research organizations.

It is especially important to bring to the attention of policymakers the urgent need for designing new codes and regulations geared to the needs of low income settlements. However, the group responsible for implementing codes and regulations is not necessarily the same as that which formulates them. In this instance, a public relation officer appointed to appropriate implementation offices could provide the liaison function between the diverse groups involved in the various aspects of building codes and regulations.

The need of low income settlements require greater use of audio-visual information in the form of radio programmes, exhibitions and films interspersed with instructional filmlets on how to upgrade the build environment. For example in Indonesia, manuals have been prepared which document the ideas in the programmes and form a basis of a community reference catalog. These audio-visual programmes and materials could be organized throughout the community by a "focal-point" that is someone from the community from whom the residents could obtain information.

The importance of demonstration projects should not be overlooked as instruments of information exchange and transmission of knowledge. The demonstration projects provide a means for physically illustrating new and adaptable skills and exhibiting visual evidence of an improved community. Certain difficulties may be considered, however in the implementation of demonstration projects, because some authorities might oppose disseminating information on unapproved materials and techniques and hence, untested but innovative designs may not be permitted.

The connection between information channels and education and training programmes is extremely vital and their multitiered linkage carry important built-in

feedback mechanism. Continuing education programmes should become an integral part of community upgrading programmes under the direction of urban extension agents.

At the level of higher education, the inclusion of methods and techniques for upgrading and design of low income settlements could have beneficial effects on the design and revision of codes and regulations. In the Philippines, it has been found desirable to include in the curricula of architectural and engineering colleges, programs pertaining to low income settlements.

The need for training personnel in the implementation of codes and regulations is crucial particularly in the rural areas, where there is the greatest opportunity for improving local materials and developing and improving traditional building techniques.

The training of technical instructors, preferably residents of the settlements, would be the most effective way to assist and encourage peoples participation in self-help activities. At the same time those who would be officially in charge of implementing development and upgrading programmes, such as local and municipal officials require training on a continuing basis and field work so as to understand the impact of new codes and administrative procedures.

If the notion of the new building code as a tool for the implementation of housing policies could be successfully portrayed by the media, it would provide a unifying force around which compliance and enforcement measures could be better understood.

Recommendations

It is therefore recommended that government institute programmes for a graduated or step-by-step improvement in the quality of life to the least advantaged on a continuing basis, thus ensuring that the total population can achieve an acceptable standard of living within a reasonable period of time and that building codes and relations be enacted or revised in conjunction with guidelines to facilitate the implementation of a graduated or step-by-step improvement in the quality of life of the poor. Specifically the following steps are recommended.

1. Government should enact appropriate legislation and building codes and regulations in order to upgrade the quality of human settlements.

Such legislations codes and regulations should be generally consistent with the goals and aims of national human settlement policies and be established by appropriate government bodies; be substantively comprehensive and cover new construction, maintenance improvement and upgrading of the built environment; apply to all segments of the population; include guidelines and examples of adequate technical solutions; be appropriate to present needs easily adaptable to future requirements and make optimum use of local resources and skills.

2. Building codes and regulations should place emphasis on meeting the basic needs of the poor in respect to human settlements.

This implies that building codes and regulations be designed to make best of the capability of the poor to build for themselves and reflect the needs of the specific population growth such as new rural-urban migrants, children and handicapped.

This also implies that governments ensure that serviced and reasonably priced land and finance are available in a timely fashion.

3. Governments, in addressing the basic needs of the poor, should aim to achieve within the limits of available resources, optional improvements for the largest number of the least advantaged. Therefore, building codes and regulations should provide for a graduated or a step-by-step improvement of the built environment.

This would include the identification of the basic needs of the least advantaged, and the preparation of a programme which will incrementally improve the quality of their lives; the assignment of high priority by governments to the satisfaction of these needs; assisting those in greatest need regardless of the location; distribution of improvements in human settlements in an equitable way giving a smaller quantum of basic improvements to the many poor rather than a larger quantum of improvement for the few; revising traditional methods and techniques for calculating benefits and costs; and fostering self-reliance which would include the use of self-help techniques and traditional forms of cooperation such as the extended family.

4. Governments in implementing a graduated or step-by-step improvement of human settlements, should give priority to the development of basic infrastructure and services.

Priority should be given to providing access to potable water; hygienic and simple solutions to problems of waste disposal; access roads and transportation facilities; a sequence of levels in the step-by-step improvement of access and quality of infrastructure and shelter; and appropriate building codes and regulations covering the initial infrastructure and service improvements.

5. Building codes and regulations should facilitate and encourage self-help and mutual aid construction, maintenance, improvement and rehabilitation particularly with regard to shelter.

The codes and regulations should provide adequate guidelines or manuals for assisting habitants in the use of improved and reliable indigenous building materials and construction techniques; adequate manuals or guidelines on maintenance, improvement and rehabilitation of shelter and infrastructure, and education and training programme for the local instructors to ensure the effectiveness of self-help activities.

6. Building codes and regulations should specify performance requirements and a full range of adjustable technical solution that meet those requirements.

This may be achieved by identifying and developing indigenous materials, construction techniques and skills that can be used as alternative solutions provided they satisfy the performance requirements; providing alternative technical methods that are economically feasible and which are based on locally available and easily used materials; providing information on least cost technical solutions that can be upgraded through time for roads, water supply, drainage and waste disposal, using improved materials and techniques and demonstrating alternative technical solutions; and providing construction guidelines for alternative solutions that are concise, easy to understand, adapt and apply.

7. Governments should establish local offices for the administration of building codes and regulations.

Particular attention should be paid to local conditions that require special considerations or approaches; designating geographic areas of coverage and responsibility that are consistent with administrative capabilities and maximum public involvement; ensuring that local offices receive resources appropriate to their role and the services provided, and that code administrators are publically accountable for their actions promoting innovative approaches to the traditional building industry and providing leadership, information and incentives for inhabitants to comply with a step-by-step approach, and ensuring that infringements are appropriately sanctioned instituting simplified and streamlined procedures for the submission and approval of building proposals, and providing direct assistance in the preparation and processing of plans; the preparation and dissemination of prototype building plans for lower income groups and, whenever possible and appropriate, full scale models of houses should be provided to serve an example of what is possible; acceptance by governments of total responsibility for an outreach programme; utilizing research findings which are appropriate to local needs.

8. Government should establish extensive programs for information education and training geared to the needs of the poor. This may be achieved by:

a. Deploying extension agents and technical instructors especially trained in codes, materials and building techniques who would operate out of local administrative offices.

b. Ensuring that building codes and regulations are clear, concise practice and intelligible to those section of the population to which they apply.

c. Establishing outreach multi-disciplinary teams comprising technician, social makers and other association with assisting inhabitants to implement codes and regulations and improve their life styles.

d. Identification and training of local individuals in fundamental skills who would assist other residents in their respective upgrading and maintenance efforts.

e. Utilizing graphics and models of alternative solutions to performance requirements for making improvements especially where illiteracy exists.

f. Establishing in the curricula of primary and secondary schools instruction on improving the quality of life in low income settlements, and introducing the professional training of architect and engineer techniques for solving the shelter and infrastructure problems of the poor.

g. Including in the requirements for professional qualification a knowledge of building for low income populations.

h. Simplifying the administration of building codes so that they can be clearly understood and followed by local builders, even if they do not possess formal education or specialized knowledge of construction.

9. Government should give high priority to the establishment of National Research Programmes in the building field and provide the necessary resources for the conduct of research and its subsequent application.

Priority should be given to research on the following:

a. The modes of life and improvement of indigenous building materials and construction techniques, infrastructure services and settlements design.

b. The assessment of the actual physical conditions of low income settlements and the needs of the population.

c. The systematic analysis of building materials and construction techniques, and the identification of factors that cause the deterioration of the built environment in order to improve the physical properties of building materials and guide the design and building process.

d. The use and improvement of traditional building practices so that they may be adopted to the changing availability of resources, skills and technology.

e. The incremental improvement of shelter and infrastructure through the introduction of improved traditional techniques and innovation technologies, e.g. wall and roof coatings waterless sanitation, water savings devices, energy use and conservation devices.

10. Information, experience and research results on building codes and regulations and on related problems and policies should be widely shared through intensified international cooperation within the framework of the UNCHS, the regional commissions non-governmental international organization and bilateral contracts.