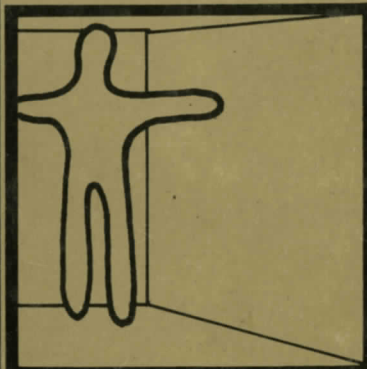
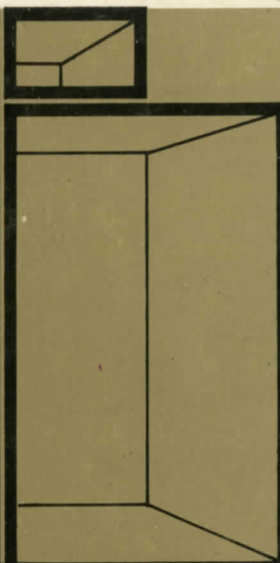


# ENVIRONMENT

JOURNAL OF THE FACULTY OF ARCHITECTURE AND PLANNING

ENVIRONMENT

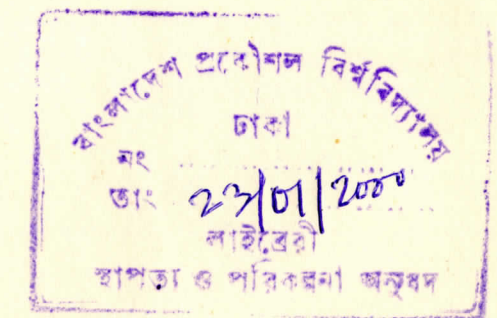




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Number 2, June 1987



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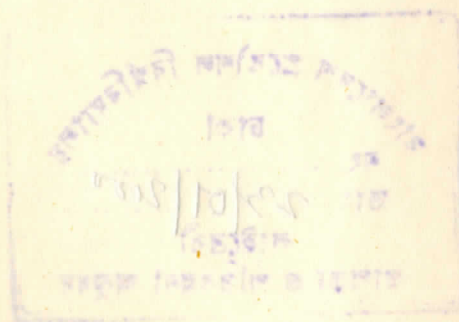
BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA



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## FOREWARD

After many lapses and delays this is the second issue of ENVIRONMENT. Notwithstanding a rather compulsive desire for an excuse, I lay no claims on the 'inevitability of the unavoidable,' but find consolation in 'better late than never.'

ENVIRONMENT does not seek originality or works of excellence. Such is not the intent. ENVIRONMENT will have served its purpose if it generates discussions, promotes interest or just provokes thought. Much of what have been presented in this issue are in this spirit.

The publication of ENVIRONMENT would not have been possible, if it were not for the help and understanding of the contributors, the Faculty members and the Publication and Information Office of the Director of Advisory, Extension and Research Services, BUET. I am thankful to them all. Their support and enthusiasm reflect a future of optimism and hope for the journal.

The Editor



## Contents

1. The 'Floating Population' — an Alternative Approach to Tackling the Squatting Problem in the City of Dhaka	1
Dr. M. A. Muktadir	
2. Development Information for more Responsive Architectural Designs	9
Abu H. Imamuddin	
3. Social Aspect of Multiownership Flats the Problems of Ownership	17
Khairul Enam and Meer Mobashsher Ali	
4. Role of the Planner	29
Haroon Ur Rashid	
5. Some Problems and Prospects of Planning the Upazila Headquarters	35
Robert Gallagher	
6. Industrial Noise : A Casestudy in Dhaka	41
Dr. M. A. Muktadir and Nizamuddin Ahmed	
7. Building Construction Regulations 1984 — an Evaluation	49
Khaleda Rashid	

## THE 'FLOATING POPULATION' — AN ALTERNATIVE APPROACH TO TACKLING THE SQUATTING PROBLEM IN THE CITY OF DHAKA.

Dr. M. A. Muktadir \*

### Introduction

In this paper an attempt has been made to have a fresh look at the squatters of the city of Dhaka. The nature of the squatting problem as well as the different attempts that have been made from time to time towards its solution have been briefly reviewed. It has been argued that the attempted solutions did not produce the desired results because of the absence of certain fundamental considerations in the conceptions of the solutions. It is further argued that to meet some of these fundamental considerations, new and radical options are to be looked into.

The present population of the city of Dhaka is estimated to be over 2 million with an annual growth rate of 6%. Roughly 50% of this population are below subsistence level, 30% are near subsistence level, 18% are above poverty level and 2% are affluent. A typical family below subsistence level will consist of 6 members and will earn from about Tk. 1000.00 to Tk. 1500.00 per month on the average. About half of such urban families are rural migrants and it is these families that find squatting as the only means of living and working in the city with survival as the only aim in life.

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## The Squatting Problem

The rates of urbanization in the developing countries are far more than their abilities to provide needed shelters and services. Consequently there has been a mushrooming of slums and squatter settlements in and around the periphery of large cities. These settlements are uncontrolled, under serviced, over crowded and ugly habitations consisting mainly of makeshift and improvised housing areas. Most of them are unfit for human habitation lacking in basic features such as durability of materials and techniques of construction, weather protection, privacy, sanitation, safety and security. It is alarming to note that with continuing rural-urban migration and natural increase, the population of squatter settlements in Dhaka is increasing and will continue to increase at a very fast rate. Consequently squatter settlements will grow either through expansion or through increase in density in a limited area or both.

The effects of the extraordinary growth of urban squatter settlements in the capital city of Dhaka are manifold. Firstly, the overall population of the city is increasing at a very fast rate causing extraordinary pressure on the civic amenities and infrastructures. Secondly, the economic pressure is driving a section of the 'floating population' into anti-social activities causing various social problems. Thirdly, the squatter settlements are not only unhealthy and unhygienic to the squatters themselves but they are also pathetic and depressing to the passers-by and are potentially dangerous as sources of pollution in the urban built environment. Fourthly, the squatter settlements tend to spread over all leftover open spaces within the city creating an ecological unbalance between the natural and the built environment. Lastly and most importantly, the squatters can never gain the sense of security which is so vital for the preservation of tradition, culture and heritage and for useful and meaningful pursuits of life and living.

The economic picture of the urban scene in Bangladesh is markedly different from that of the rural scene. The per capita GNP in the country as a whole is around 140 U. S. dollars. A sizable portion of the gross national product is derived from the agricultural sector which includes agriculture, forestry, hunting and fishing. The overall per capita income figures, however, conceal marked disparities with regard to the level of development and consequently of living standards of the population in the urban and the rural areas within the same country. The economic development has hitherto been concentrated largely in the urban areas — thus accentuating the disparities in the distribution of assets and incomes in the urban and the rural areas. Over the years, the relative number of the poor in the rural population has been increasing and this has been causing the serious problem of ever increasing migration from rural to urban areas in search of work and living.

Various available data tend to suggest the following urban groupings as an approximation in case of Bangladesh, particularly for the three metropolitan cities of Dhaka, Chittagong and Khulna :

Group	Yearly income in U. S. dollars		% of urban households
Lowest	0	- 1000	80%
Medium Low	1000	- 2000	12%
Medium	2000	- 3000	4%
Medium High	3000	- 4000	2%
Upper High	4000	and above	2%

## The Attempted Solutions

Since the emergence of Bangladesh as an independent state and Dhaka as its fullfledged capital, attempts have been made for tackling the urban squatting problem of the city of Dhaka in rather hasty and hapazard ways. One such attempt involved acquisition of sizable parcels of land on the periphery of the city by the concerned government agency and erecting small bamboo huts in closely spaced uniform rows giving a camp like appearance to the settlement. Necessary resources for such projects were provided by international relief agencies such as CARE and others. The squatters of Dhaka were forcibly evicted from within the differant spots of the city and literally dumped into the hastily set up camps. Even though the huts were allotted free of charge, they could not hold the floating families there much longer and the camps turned into miserable places and suffered high rates of desertion. Lack of accessibility to work opportunities, absence of ownership rights for the allottees, lack of essential community facilities and infrastructures etc. were the main factors which were contributing to the initial chaos and confusion in these camps. Gradually some of these situations were improved and the camps slowly began to take the shape of natural human settlements. But the policy of acquiring parcels of urban land and subjecting them to the so called 'planned' settlements for very low income groups do not offer a viable option because of the following two main reasons :

- Land and specially urban land is a very costly commodity in Bangladesh and the minimum parcel of land required for a family dwelling unit in these settlements will cost well beyond the limit of affordability of a typical squatting family— not to mention the cost of the dwelling unit and the necessary infrastructures. It is estimated that a typical dwelling unit of the type mentioned above will cost, in the minimum, as follows :

Land	:	Tk.	50,000/-
Shelter	:	Tk.	10,000/-
Infrastructure	:	Tk.	40,000/-
Total	:	Tk.	100,000/-



Unless 80% to 90% of this cost is provided as government grant and the rest as loan, such a scheme can not be materialized. Such a subsidy is obviously totally unrealistic for any serious and comprehensive solution of the urban squatting problem.

- (ii) The location of such 'forced' settlements on the periphery of the city tends to keep the urban poor far away from their work opportunities which are usually found in variety and in quantity in and around the heart of the city. The distance between the place of living and the place of work not only causes physical inconveniences but also costs high extra expenditure in commutation. As a result the already meager income of the urban poor is faced with further difficulties.

Apart from the attempt by the government of providing complete dwelling units to the squatting families along with the small parcels of land on which they stand and the basic services and utilities of roads, water lines, sewerage and so on, there were also the so called site and services schemes under which the urban squatting families were offered sites with the basic services of roads, drinking water etc. so that they can build their own shelters on the given land and promote growth of new communities somewhat in an organized fashion. This also did not work because such sites were always far away from the heart of the city and consequently far away from the potential work opportunities for the urban poor.

Very recently the government has undertaken a scheme of building few hundreds of low cost dwelling units for the urban poor on one of the initial camp sites in Dattapara on the north-eastern periphery of the city of Dhaka. The cost of each dwelling unit has been estimated to be Tk. 50,000/-. If the cost of the land and the infrastructure are added to this figure, the cost of each unit will come to atleast 1.5 lacs of taka. A typical squatting family can afford to pay only about 10% to 15% of this cost and this will also have to be spread over a period of 10 to 15 years. This means that such a scheme can only be materialized on the basis of almost total subsidy. No government in Bangladesh can sustain such an endeavor purely from economic considerations alone. In fact none of the approaches adopted so far for tackling the urban squatting problem seems to offer any realistic option for solution of the problem. It is not difficult to understand that the problem needs much more comprehensive considerations and a great deal of imagination if a viable and acceptable alternative is to be found for its long term solution.

#### The Search For a New Approach

Any viable, useful and acceptable approach to the problem of providing 'planned' settlements for the urban squatters must take into consideration certain factors of vital importance, some of which are as follows :

- (i) The squatting families must be settled well within the city so that they have easy access to work opportunities close to their dwelling places.
- (ii) The squatting families must bear the cost of their dwelling units which shall be realized in instalments over a reasonable span of time. This necessarily means that any workable scheme will have to be such that the cost per dwelling unit is within the limit of affordability of a typical squatting family when the family is provided with the necessary amount of loan which is to be paid back in monthly instalments over a period of ten to fifteen years.
- (iii) The squatters and their settlements need not pose as a nuisance to the city environment or to the city life. They need not be projected as a total liability. It is rather important to show that they can play useful role in the overall dynamics of the city life.

On the basis of a careful consideration of all these factors it seems that the urban squatters may have a much better chance of satisfactory existence, both physically and socio-economically if they are settled in house-boats on the low-lying areas within the city rather than in dwelling houses on high priced urban land. This option deserves to be looked into in some details.

The city map of Dhaka reveals that it is bordered by the river Buriganga on the south and on the west. In the old days the city had a network of canals which had connections with the river Buriganga. Besides there were vast proportions of low-lying areas within the limits of the present day city. These vast areas used to remain under water all through the year although the water level fluctuated with the coming and going of the rainy season. Subsequently, many such canals and low-lying areas have been filled up for building new roads and new settlements. Consequently the city has not only lost much of its natural water bodies which were an important feature of its landscape but there has also emerged a new problem of water logging of the city even for an ordinary spell of rain lasting only for 2/3 hours. And yet indiscriminate filling up of low land continues because urban land is in very high demand for the growing city.

The present day city map of Dhaka shows that even after the large scale filling up of the low-lying urban land belonging to both the public and the private sectors, a considerable area of low-lying land still remain more or less as waste land in and around the heart of the city. Most of such low-lying areas are interconnected and either have existing linkages with rivers or such linkages can be established without much difficulty. It is a pity that these potentially excellent and adoptable for multi-use physical features of the city remain neglected, as if awaiting the senseless fate of the filling up operation. Most of such low-lying areas are government properties. Those which are not can be acquired by the city at a nominal cost.

It is estimated that the low-lying areas, if cleared and developed, can provide ten to fifteen square miles of water bodies woven in and around the heart of the city. Selected



spots of these water bodies can accommodate sizable squatter settlements in boat houses. A chain of green parks may be developed along banks of such water bodies. These parks along with the water bodies may provide facilities for rest and recreation to the city dwellers. Above all, these may add significantly to the character and quality of the physical environment of the city of Dhaka.

The proposal for development of the areas within the city as sizable water bodies, creating green parks on their banks and developing low-income communities in boat-houses in selected spots of the water bodies will require large resource commitment. However, the benefits derived from such a scheme will also be very large indeed. The scheme is likely to make very positive contribution towards solving of the water logging and drainage problem of the city, the problem of urban congestion, the problem of shortage of recreational areas and so on and almost the total of the cost of the proposed scheme may be charged against the desired improvements in all these sectors leaving the boat-house communities only to bear the cost of the boat-houses themselves. Since the proposed boat-houses need not be very mobile, they may be designed extra wide using ferro-cement as the main material. Over the ferro-cement hull the super structure of the dwelling unit may be built using such materials as bamboo, wood, asbestos, C. I. sheets etc. It is estimated that a typical boat-house for a family of 5/6 persons may cost around fifteen to twenty thousand taka which the family may be provided with as house building loan repayable in monthly instalments over a period of ten to fifteen years. The boat-houses will be moored permanently in given locations under appropriate license from the city authorities and such licenses may be renewed periodically. In any given location, a pre-determined number of boat-houses will ultimately be accommodated and some basic community facilities may be planned on shore for each such communities. The problem of maintaining a stable enough level in the water bodies through out the year can be solved by using water flow regulators such as sluice gates, water pumps etc. Thus the proposed scheme is indeed broad-based and the cost-benefit analysis for such a broad-based development proposal will not only involve the issue of the low cost dwelling but will also involve a whole series of other important issues affecting the urban environmental scene and the urban life and living.

#### Discussion and Conclusion

Boat-house communities are nothing new in the south and south-east Asian countries. A sizable population of these countries belonging to the urban poor sections in particular live in boat-house communities. In Bangladesh, the local gypsy communities known as the 'Bedes' live in country boats and travel in small groups along the network of waterways across the country in search of livelihood. Apart from the 'Bedes' there are also others who, because of the nature of their means of livelihood, live mostly in boats. Thus living in boats can be quite acceptable even desirable to the urban poor if the capital cost is within the limit of affordability and if the locational advantages in relation to the places of work is ensured.

From the environmental viewpoint, living in boat-houses in close proximity with nature and away from the busy roadside shacks may definitely be considered as a significant improvement. Not only the boat-house communities will enjoy a better physical environment but the general city dwellers will also be saved from the various ill effects of squatter settlements on the heart land of the city.

The proposed boat-house communities can promote and maintain various activities on the water ways adding a further dimension to the dynamics of the city life. Some of these activities may have considerable economic potentials and provide new sources of work and earning. The chain of water ways may also open up easier and cheaper possibilities for transportation of men and materials to and away from the heart of the city. The benefits from the viewpoint of water logging and drainage problem of the city will be enormous compared to the cost involved which, in any case, may be found to be favourably comparable with the probable cost of other available options for solution of the problem. Moreover the other available options are unlikely to have the wide ranges of extra benefits the proposed option can bring about.

The present discussion has only attempted to point out a possibility so far as the tackling of the urban squatting problem in the capital city of Dhaka is concerned. On the face of it, the possibility looks like a viable and promising one. However much more study and closer scrutiny of the various relevant issues must be undertaken before a clear, concrete and comprehensive scheme can be drawn. Living with water can be a natural and highly effective option not only for the urban squatters but also for a section of the growing population of tomorrow if we want to preserve our scarce land for productive uses which could be vital for our survival.



...of the city dwellers will also be saved from the various ill effects of squatter settlements on the heart land of the city.

The proposed post-house communities can promote and maintain various activities on the water ways leading to further development of the city. Some of these activities may have considerable economic potentials and provide new sources of work and earnings. The plan of water ways has been open up earlier and cheaper possibilities for transportation of men and materials to and away from the heart of the city. The benefits from the view point of water logging and drainage problem of the city will be enormous compared to the cost involved which, in any case, may be found to be favourably comparable with the probable cost of other available options for solution of the problem. Moreover, the other available options are unlikely to have the wide range of extra benefits the proposed option can bring about.

The present discussion has only attempted to point out a possibility as far as the lack of the urban spreading problem in the capital city of Dhaka is concerned. On the face of it, the possibility looks like a viable and promising one. However, much more study and closer scrutiny of the various relevant issues must be undertaken before a clear, concise and comprehensive scheme can be drawn. Living with water can be a natural and highly effective option not only for the urban spread but also for a section of the growing population of tomorrow if we want to preserve our scarce land for productive use which could be vital for our survival.

...the urban spread and the urban sprawl... the urban spread and the urban sprawl... the urban spread and the urban sprawl...

## Discussion and Conclusion

Post-house communities are nothing new in the south and south-east Asian countries. A sizable population of the urban poor belongs to the urban poor who live in post-house communities. In Bangladesh, the local gypsy communities known as the 'Bodays' live in country boats and travel in small groups along the network of waterways across the country in search of livelihood. Apart from the 'Bodays' there are also others who, because of the nature of their means of livelihood, live mostly in boats. Thus living in boats can be quite acceptable even desirable to the urban poor if the capital cost is within the limit of their capability and if the location advantages in the place of work is secured.

Design decisions are made by clients, builders, architects and engineers and others who in most cases do not occupy the building. The design reflects the socio-cultural views of comfort, community etc. of the designer which are different from those shared by the users. The system has become like that the architect's real client (users) are no longer the legal clients. Hence they tend to work more to the benefit of the legal clients and feel no responsibility for those to whom they are ultimately responsible. By the very nature of their work the architects always stand closer to the rich than to the common man. This is considered to be one of the main reasons behind the failures in general level.

## DEVELOPING INFORMATION FOR MORE RESPONSIVE ARCHITECTURAL DESIGNS

Abu H. Imamuddin \*

Building codes and regulations do specify some design parameters relating to users need. However, the regulations are the response to the cumulative history of past design failures. The changes in building practice, health standards, social customs and technology which make many regulations obsolete or even counter effective are reflected in such regulations very slowly.

## Abstract

Traditionally designing was an one man act, and intuition played a vital role in decision making process. Design theories and methods were mostly associated with symbolic and aesthetic functions of the structural system or skin of the building. The emphasis was relatively less on the environment necessary for occupants to perform their activity satisfactorily. The inadequacy of architecturally designed projects in the context of users need and the architects general failure to understand importance of such need in the overall success of their projects have been felt increasingly. The paper will focus on the need for better understanding of the interaction of people and built-environment and the ways of improving such information to the benefit of the designers.

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Design problem has become so complex and diverse under the influence of rapid socio-economic, political, cultural and technical changes that it has gone simply beyond the scope of individual architect to grasp it totally. To avoid the complexity, the tendency among many architects is to design under the veil of creativity so that they can remain confined within the boundaries of their professional knowledge and judge every thing from their personal experience. In the western world since World War II, the realization of the limitation of design by intuition and personal experience appeared as a dominant force to change the established design process. Concept of team approach as an effective alternative was advocated by architects like Walter Gropius, Richard Neutra and others.

Design decisions are made by clients, builders, architects and engineers and others who in most cases do not occupy the building. The design reflects the socio-cultural views of comfort, community etc. of the designer which are different from those shared by the users. The system has become like that the architect's real client (users) are no longer the legal clients. Hence they tend to work more to the benefit of the legal clients and feel no responsibility for those to whom they are ultimately responsible. By the very nature of their work the architects always stood closer to the rich than to the common man. This is considered to be one of the main reasons behind design failures in general level.

Much experiments and studies have been carried out to improve the technical quality of building, and literature on them are readily available to aid the designer. On the other hand user information is limited. Studies and information whatever may be available are scattered and in most cases inaccessible to those who need them most. Building evaluation though a part of the design process, is seldom carried out. Moreover, there is little or no interest among the designers and client (legal) to spend time and resources to study users need.

Building codes and regulations do specify some design parameters relating to users need. However, the regulations are the response to the cumulative history of past design failures. The changes in building practice, health standards, social customs and technology which make many regulations obsolete or even counter effective are reflected in such regulations very slowly.

The notion that building form itself could have a major impact on design and its performance have been proved wrong from the repeated failures of socially complex projects like housing and hospitals designed by architects. If the underlying social problems are not addressed properly than any design otherwise creative may end in failure. So the importance of understanding users need in building design cannot be overemphasised.

The meaning of the terms 'user' and 'need' requires to be defined and understood clearly as they are loosely used more often. The term 'user' applies to occupants as well as those involved in construction, ownership, operation, maintenance etc. They can be classified as direct and indirect users. Direct users are those who reside, visit and work in the building. User may have diversified interest relating to the building and they are

sometimes mutually conflicting. The builder would be interested in market value of the building and pay more attention to the finish material while the occupant, more concerned with the use value of the building will look for effective useable space.

'Need' is a variable term. Complete satisfaction of need is not attainable as it happens that when one set of need is satisfied another set emerges. It has been demonstrated in Maslow's (1) conceptual model known as 'Need Hierarchy' (Fig. 1). Which shows need varies from physiological need to self-actualization through successive stages inbetween them. However, there is no definite order of movement between those stages.

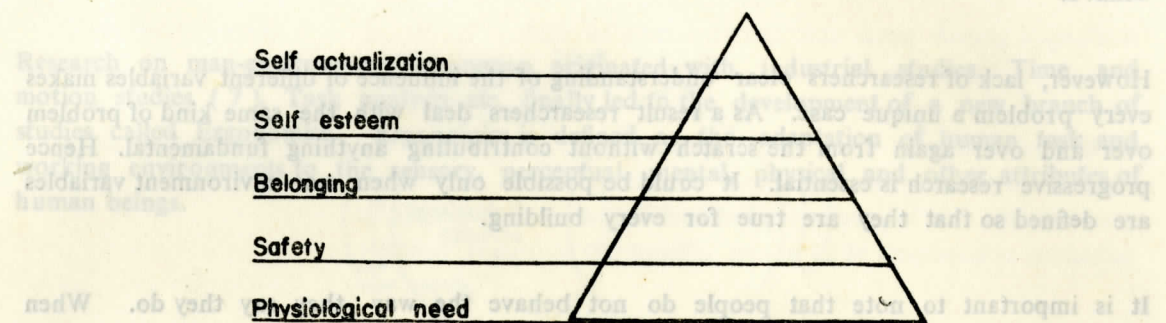


FIG 1. HIERARCHY OF NEEDS (MASLOW)

In today's architectural design, a major issue is to find ways to develop user information. However, architects' attempt to find sociologists' assistance in this field turned into a disappointment. Social scientists long neglected the problems of how people respond under the multi-dimensional effect of complex environment as their goal of work were different. Whereas, the architects conditioned to design a more technically perfect building, are yet to understand how to apply sociologists' findings to improve their designs. The connective link between these two disciplines is that, one develops behavioral information and the other uses them. Nevertheless, in other respect they are entirely different, one is a professional body, the other is a learned body, one is interested in product and the other is interested in process, one looks for objective solution to a problem and the other studies the problem subjectively. Sociologists are better in describing the activities and organizations that already exist than they are in proposing or forecasting the consequences of new organizations proposed by the architects. So it is the architects who should be interested in developing man-environment information for their own purpose. Behavioral scientists with their long experience in the study of behavior of man and its influences can be a valuable guide to lead the architects to develop such materials. Therefore, the architects should acquaint themselves with various research methodologies available in social science.



Pattern of life and behavior is largely controlled by man-made environment. As the architects are directly concerned with the shaping of the man-made environment, it is the field of their primary importance. Various approaches are possible to study the influence of building on its occupants. Among them, System Analytic Approach, Task Analysis, Time Budget Study and Performance Approach (2) can be applied as required by the nature of the problem. There are two research approaches—Analytical and Multivariate. In real world every problem is influenced by multi-dimensional forces. So things cannot be examined one at a time as it is done in Analytical Research. Multivariate procedure allows study of the problem in its complex reality. R. G. Barker's (3) theoretical model suggests to study human behavior in a realistic setting with all its complexities. He classified environment in two ways: 1. Psychological environment—the world as it is perceived by a person and 2. Ecological environment—the real life setting within which people behave.

However, lack of researchers' clear understanding of the influence of different variables makes every problem a unique case. As a result researchers deal with the same kind of problem over and over again from the scratch without contributing anything fundamental. Hence progressive research is essential. It could be possible only when man-environment variables are defined so that they are true for every building.

It is important to note that people do not behave the way they say they do. When the research has to depend on their statement, check and balance is necessary through research control. Questionnaire survey offers considerable control and other controls may be enforced through careful selection and training of the surveyors. Errors are inevitable in research process. Research goal is not to eliminate error completely but to keep them to a level of minimum influence. Every researcher makes some assumptions and these assumptions taken together forms a conceptual theoretical model.

Information and data collection may be carried out in various ways depending on the type of the problem. Commonly used procedures are observation, Simulation, Interview, Semantic Differential, Diary Method and Unobstrusive Method (4). A research is made for analysis and interpretation of data collected. This analytic phase of research often proves more costly than the actual data collection. Hence data collection requires to be carefully planned so that they can be purposefully used.

Scale of observation is another factor to be determined properly for appropriate problem analysis. The Scale can be classified as follows:

1. Macro scale — The City
2. Intermediate scale — The community & Neighbourhood
3. Typical scale — Building & Building groups
4. Close scale — Within home and Work

Categorization of information in terms of scale helps to organize diversified information and data in a manageable form.

Architect Amos Rapoport (5) has emphasised the impact of cultural differences in shaping environment and argued against the concept of universal standardization of needs advocated by Le Corbusier. In Le Corbusier's (6) term 'All men have the same organism, the same functions. All men have the same needs.' Nevertheless, it has been proved that differences in background and experience can exercise considerable influence on the way people respond to their environment. For example the concept of over crowding varies from culture to culture. In one culture it is considered a physical problem and in another a psychological problem. Hence, the success of built-environment depends to a great extent on the understanding of the past history of the users.

Research on man-environment interaction originated with industrial studies. Time and motion studies (7), Task analysis etc. finally led to the development of a new branch of studies called Ergonomics. Ergonomics is defined as the adaptation of human task and working environments to the sensory, perceptual, mental, physical and other attributes of human beings.

## Conclusion

Architects in their professional lives are compelled to make decision on immediate problems. Design decisions are made on insufficient information. The client seldom provides detail information and architects in general are found to be reluctant to collect such information as they believe more information would only complicate the design process and limit their creative ability. Architects feel that their responsibility ends with the completion of the project and they remain indifferent to post-occupancy problems. Whereas the ultimate success of the building depends on its performance, the degree of satisfaction of its users and the purpose it fulfils. A socially conscious architect should always work with a sound brief having adequate user-information so as to achieve a more responsive design. He should take initiative to develop such information when they are not available.

Man-environment information can be developed as a part of the design process, Post-occupancy evaluation, which is generally neglected is indeed extremely important in realizing users need. According to architect T. A. Markus (8), science and building design have much in common as far as relationship between variables, prediction and testing are concerned. Architectural programming is a process in which designer approaches a solution through different stages of analysis, synthesis and appraisal. This allows the new ideas to be tested, recognised, reassessed before application. Every building at the end can be



used to test a research hypothesis. In this regard post-occupancy evaluation can be valuable in testing the validity of the basis of decision making or to check the hypothesis. Hence a team work is considered useful as a method of integrating ideas and concepts of architects and behavioral scientists. Architects and social scientists can play a complementary role in shaping the built-environment, where the end of one's activity will be the departure of the other (Fig. 2). Social scientist's study on a completed project could be a useful guide to the architects in preparation of a brief of a similar project. What is important to the architects is the quality and applicability of such information not the quantity. This requires careful analysis and classification of those information by the architects for their own purpose.

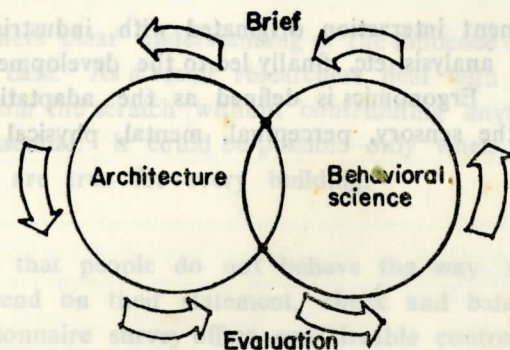


FIG 2. CONNECTIVE LINK BETWEEN ARCHITECT'S & BEHAVIORAL SCIENTIST'S SPHERE OF WORK

In our school due importance is not given to develop understanding of users need and the relevance of behavioral research to design. This reflects in the professional career of the architects where they try to explain everything from their personal experience and preferences. A change in curriculum to bring more awareness of the students about people and building interaction is essential.

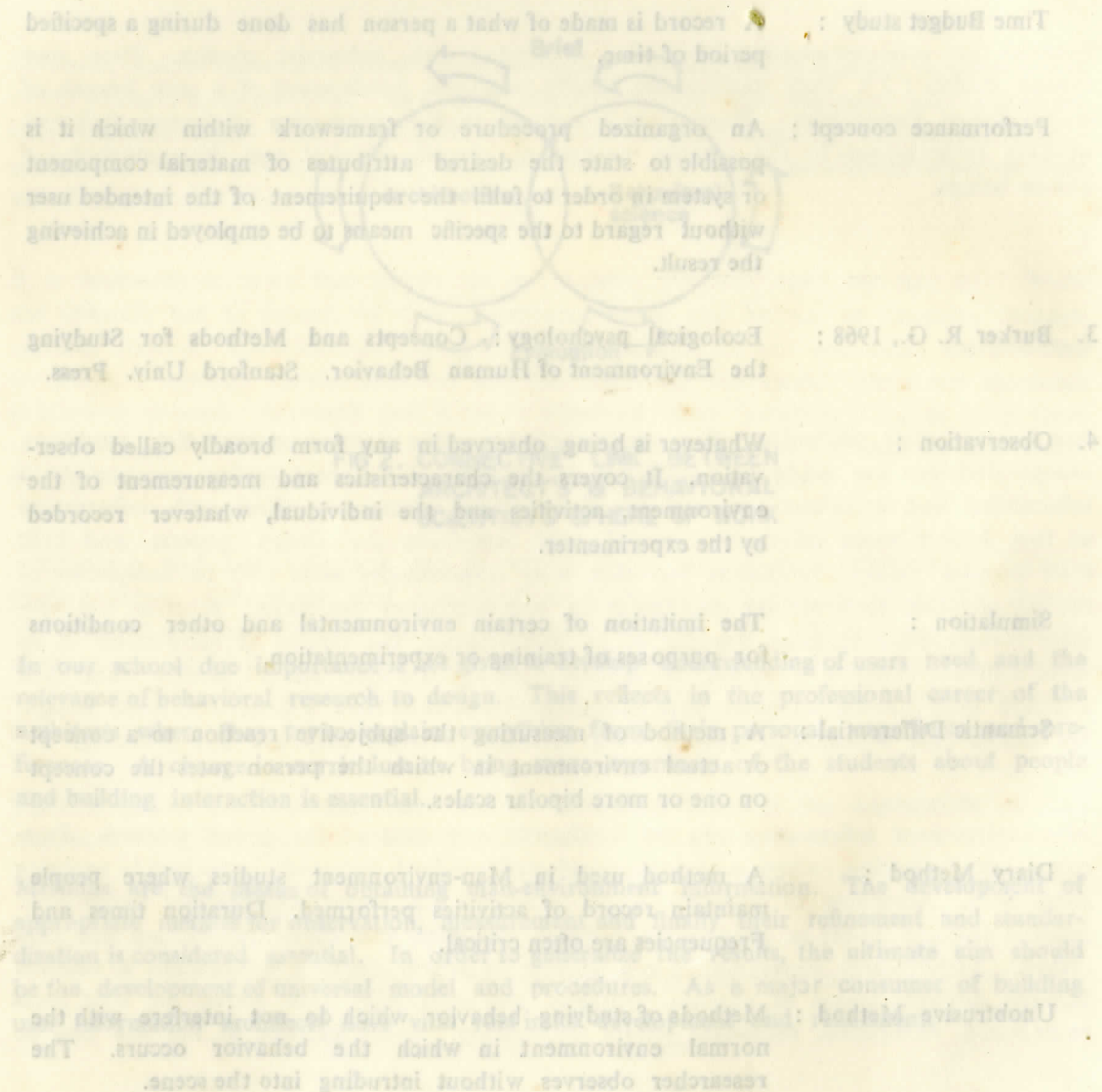
Methods are the means of obtaining man-environment information. The development of appropriate method for observation, measurement and finally their refinement and standardization is considered essential. In order to generalize the results, the ultimate aim should be the development of universal model and procedures. As a major consumer of building user information architects have vital role in its development and refinement.

## Notes and References :

1. Maslow A. H., 1954 : Motivation and personality, New York : Harper
2. System Analysis : An organized arrangement in which each component part respond in accordance with an overall design. It includes all equipment and personnel integrated in a manner to perform a function.
- Task Analysis : Task analysis is used to determine the psychological and physical factors essential to the adequate performance of a task.
- Time Budget study : A record is made of what a person has done during a specified period of time.
- Performance concept : An organized procedure or framework within which it is possible to state the desired attributes of material component or system in order to fulfil the requirement of the intended user without regard to the specific means to be employed in achieving the result.
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4. Observation : Whatever is being observed in any form broadly called observation. It covers the characteristics and measurement of the environment, activities and the individual, whatever recorded by the experimenter.
- Simulation : The imitation of certain environmental and other conditions for purposes of training or experimentation.
- Semantic Differential : A method of measuring the subjective reaction to a concept or actual environment in which the person rates the concept on one or more bipolar scales.
- Diary Method : A method used in Man-environment studies where people maintain record of activities performed. Duration times and Frequencies are often critical.
- Unobtrusive Method : Methods of studying behavior which do not interfere with the normal environment in which the behavior occurs. The researcher observes without intruding into the scene.



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## SOCIAL ASPECT OF MULTIOWNERSHIP FLAT: THE PROBLEMS OF OWNERSHIP

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Meer Mobashsher Ali \*\*

### Abstract

Ownership of flats has become a new issue in our legal system. The basic objective of a legal institution is to uphold the social welfare. Today's legal institution is a product of gradual developments caused by social changes throughout the ages. Multiownership exposes certain issues that are needed to be resolved by a compatible legal system.

In a case study, five multiownership housing areas were investigated. It was observed that there were three types of ownerships that had been adapted for the real estate. They were Co-operative, Condominium and Free-hold ownerships. All these ownership patterns are found inadequate in meeting the needs of the owners. In this paper some of the inadequacies are discussed for further critical evaluation.

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## 1.1 Background

It is a known fact that the progress in urban housing in our cities particularly in Dhaka is far from satisfactory. The population pressure, shortage of developed land, resource constraints and lack of appropriate policy have resulted in continued haphazard urban growth, uncontrolled sprawl of slums and squatter settlements. In these growing inadequacies urban dwellers specially the fixed income group (the middle and lower middle income group) face a very limited ranges of choices for housing.

It seems now with a low 'affordability' the majority urban families can hardly dream of having a single unit, detached home of their own. How to meet the demand for housing in urban areas is a dilemma shared by the experts, the Government and the users. However, there are many reasons to believe that multiownership flat housing may be considered as a desirable alternative in the present situation.

There is no doubt that the standard of accommodation offered by a flat is much inferior to the separate cottage of detached house. Yet there is a strong demand for it in the main city area. The main forces that caused it may be identified as living close to the working area and service facilities and high land price, scarcity of developed land and prospect of cost savings in building construction. It seems perhaps for the above reasons multistorey flats are being socially accepted as a solution. There are many developers trying to sell flats in the different areas of Dhaka city. Many more are coming up due to the secured nature investment prospects.

The characteristic feature of a flat is that, no single dwelling unit is self sufficient in access, vertical circulation, service facilities and structural identity. These features necessitate the need for greater sociability and preserving certain restriction on some activities that might cause inconveniences to other dwellers. Although rental flat housing more or less gained social acceptance in our cities in the recent years but multi-ownership of flats are just beginning to come out as a fresh issue.

The issue of sharing the common facilities and services impose certain limitation on the rights of the owners. The change in ownership pattern from traditional 'Freehold Estate' to 'Tenancy in Common' or 'Co-ownership' rises certain basic questions regarding all the fundamental rights of 'use', 'exclusion' and 'disposition'. The following discussion will be mainly concerned with the legal problems of multiownership flats.

There has been some works going on in Dhaka city on multiownership flat housing. From a recent study (1) it is found that there are basically two types of multiownership prevailing in the flat housing projects. They are Co-operative housing and Condominium (Table 1-A)

Table( 1-A ) (2)

The ownership pattern of multiownership flats

Name of the Project	Location	Type of Ownership	Year of Completion	Number of Storey
Siddeshwari Ispahani Housing ( new )	Siddeshwari	Condominium	1980	4
Eastern Housing	Siddeshwari	Condominium	1982	5
Aziz Co-operative Housing	Purana Paltan	Co-operative	1985	8
Hasanabad Housing	Moghbazar	Co-operative	1972	3
Hafizabad Housing	New Eskaton	Free hold ownership	1965	3 to 4

Ispahani and Eastern housing projects have condominium type of ownership. The condominiums may be defined as multifamily building which has individual ownership of the single unit and an undivided ownership of the common areas and facilities serving the structure such as halls, stairs, elevators, lobbies, drive ways and so forth (3). Condominium type of ownership is comparatively a very recent concept of ownership. It gives the owner something like 'free hold' ownership status in a 'tenancy in common' type of ownership.

Our legal institutions do not recognize this type of ownership. In united states first condominium was built during 1961 under the section 234 of the Housing Act of 1961 (4).

Before that condominiums were extensively used in Puerto Rico and Brazil.

From the Table (2-A) the Aziz Co-operative and Hasanabad are Co-operative Housing. In legal sense the Co-operative home owner is a stock holder that allows him to occupy a certain unit and the land and building is usually held by a Co-operative organization.

The Co-operative type of ownership is being practised in our country under the Co-operative Societies Act 1940. There were around 76 Co-operative housing societies in 1976 registered in Dhaka District. All of them acts as developers

1. Khairul Enam, M. Arch. thesis. The sharing problems of multiownership flats 1984.
2. Ibid
3. Glenn H Beyer, Housing and Society P. 272
4. Ibid



rather than financing institution that advances loan for housing to their members. These societies are basically profit making institutions. Most of the members of Aziz Co-operative and Hasanabad Co-operatives are from rich business communities, who can afford to pay upto Tk. 6,75,000 for a 1600 sq ft flat (1981). There has been also some public institutional effort (HSD) to popularise multiownership flats. Two schemes have been executed so far on an experimental basis. They are joint ownership of flats (4 persons per 5 khata plot) and hire purchase built flats (550 sft and 850 sft units). The projects are located in Mirpur, Mohammadpur and Kallanpur area. The hire purchase projects had good responses and were leased to the aspired owners. But the joint owners of the plot schemes have failed to show any initiative towards flat construction.

The multiownership or Co-operative housing have had some success in a number of European nations. The basic scheme involves Corporate or group ownership of the property. The property may be a flat or a tract of land with plots for single family units with permanent lease hold occupancy. Housing Co-operatives for families of modest income have been successful in a limited number of cases, where they have been sponsored by union groups, with Social and Economic homogeneity.<sup>(5)</sup> The countries like Sweden, Denmark, Norway, United States and Chile have shown some progress in multiownership ventures. Most of them have modified their respective legal institutions to allow property 'liquidity', and housing finance. To meet the housing problems of middle and lower income group, the non-profit strategies of Co-operative Societies have been found to be most profitably utilized. Direct Government involvement in the protection of lower interest rate for housing finance have also added as bonus to the Co-operative ventures.<sup>(6)</sup>

## 2.1 Observations on Legal Scene

The multiownership housing is a new element in our Urban Landscape. A marked shift from detached ownership housing to multiownership housing both in public and private sector have been observed in recent years. Ownership is usually described as a bundle of rights. In the present situation of urban development the institution of property does not permit an individual absolute and unlimited rights in land use. Those rights may be exclusive but as it is observed that society has reserved certain right such as, Taxation, 'Zoning', 'Sub-division restrictions' and other control over the right of use. Thus the bundle of rights from the owners' side has been reduced as the concept of social obligation has expanded.

The real estate ownership may take a number of norms. The rights comprising the complete bundle make up full ownership (Free hold estate) <sup>(7)</sup>. Single right or smaller groups of rights may be distributed or shared by some persons to make

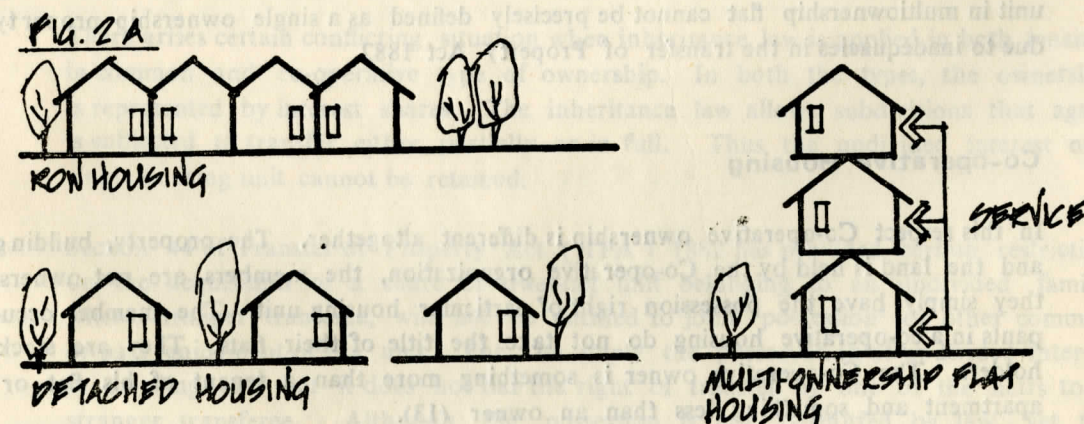
5. Ratcliff U. Richard. Urban land Economics.
6. Glenn. H Beyer, Housing Society.
7. Transfer of Property Act 1882

it a multiownership (Tenancy in Common) <sup>(8)</sup>. The rights and privileges may be shared by two or more persons under a number of possible arrangements, Co-operative <sup>(9)</sup>, Tenancy in Common <sup>(10)</sup>, Joint Tenancy <sup>(11)</sup> and Condominium <sup>(12)</sup>. Broadly, ownership may be noted to consist of the 'right of use' 'right of exclusion' and the 'right of disposition'. The right of use and the right of exclusion are the basis of the right to 'possession', the right of possession is linked but distinct from ownership and it is an attribute of ownership.

## 2.2 The Property Identity of Multiownership

The multiownership may be distinguished from the row and detached (Fig. 2-A) ownership housing in terms of land use and relation of structure to the ground. The two latter types housing possess exclusive right of land on which the structure is built. The distribution or division of exclusive rights may be made by subdividing land. Hence the title of land bears the property right of its holder. In terms of land use the property can be said to be held in severalty. The common walls in row housing may be termed as property walls segregating the two consecutive properties with 'Concurrent' interest of two parties. Each unit with its respective plot may be considered as total property of individual owners.

Here the land and building is considered as a integrated whole identifiable by the title of land in the 'deed'. The building does not have separate entity without the land to support it. According to condition of the relationship between structure and land the type of housing may be called 'Independent' with access and approach facilities.



8. Ibid
9. Co-operative Societies Act 1940
10. The Transfer of Property Act 1882
11. Ibid
12. Western concept of multiownership. Our legal institution does not recognize it as a form of ownership.



The development of our legal institution in the present form have resulted in response to above relationship of land and structure. The title of land is the key factor in the identification of property right of building on it. Land is easier to subdivide with proper identification thus the legal institution considers only the land ownership as the basis of all real estate properties. When the property could not be divided for practical reasons to preserve the exclusiveness then according to legal provisions 'tenancy in common' type of ownership is created where property right is preserved in terms of proportionate share of investment.

The problem is not the land ownership but the space above the piece of land. If the land building relationship in case of multiownership housing is observed it will be clear that upper floor units cannot be linked directly (like row and detached units) with the land so as to identify it as integrated whole. Moreover all the dwelling units occupy the same land thereby generate the need for vertical subdivision of space above the land. The legal institution can only go upto subdivision of land in terms of share (Tenancy in Common) and do not have any provision for vertical subdivision, like first 11' from ground owns by 'X' second 11' by 'Y' and so on. For this reason 'condominium', where the owner takes the title of the flat do not have any legal basis in our country.

Further, it may be seen that the upper floor housing units are supported by lower floor units that framed in a structural system. Any major change of supporting walls or columns in a single unit will damage the whole structure. Similarly any alternation in the utility lines may effect the total service system of the structure. The exclusive rights from structural and utility point of view, that are enjoyed in row and detached units might not be attained by multiownership housing. However it is clear now that under the existing legal terms (Tenancy in Common) dwelling unit in multiownership flat cannot be precisely defined as a single ownership property due to inadequacies in the transfer of Property Act 1882.

### Co-operative Housing

In this respect Co-operative ownership is different altogether. The property, building and the land is held by the Co-operative organization, the members are not owners, they simply have the possession right of particular housing unit. The member occupants in a co-operative housing do not take the title of their flats. They are stock holders. The Co-operative owner is something more than a tenant of his flat or apartment and something less than an owner (13).

### 2.3 Property Transfer

It is seen that the ownership right in multiownership development have two distinct types, the Tenancy in Common and Co-operative. Most of the ownership of private

developer built projects falls into Tenancy in Common category. The legal formalities are that in the event of property transfer all the other co-owners are required to give official witness, because they have concurrent interest on the whole property. This, is often very difficult to organize because of absentee co-owner and the complications resulted due to inheritance.

This is a serious disadvantage of multiownership property that makes it an 'illiquid' investment.

Similar problems are there in Co-operative ownerships. Restrictions are there due to section 153 of Co-operative Societies Rules 1942, related to the transfer of shares (Property). A member of a co-operative society cannot directly dispose of his share without going through elaborate formalities of auction conducted by the office of the Co-operative Society. The auction will take place provided the interest on the transferable share is cleared by the nominees and the mortgage bank. The process may require long time before any settlement could be derived.

Unless simpler methods could be found out for the property transfer the multiownership will remain in the less priority list of the prospective home owners.

### 2.4 Inheritance

The rules of Islamic law is applicable in our country regarding the inheritance by the legal heirs. According to the law any property, if case arises, could be subdivided among the heirs, in a proportion as provided by the Islamic law of Inheritance (14).

There arises certain conflicting situation when inheritance law is applied in both tenancy in common and co-operative type of ownership. In both the types, the ownership is represented by interest shares. The inheritance law allows subdivisions that again is subjected to transfer either partially or in full. Thus the undivided interest of a single housing unit cannot be retained.

Section 44 of Transfer of Property Act (TPA) 1882 has provided certain restriction on the acquisition of a share of dwelling unit belonging to an undivided family, where stranger transferee, will not be entitled to joint 'possession' or other common or part enjoyment of the unit. The law imply the preservation of undivided interest in dwelling unit but it does not bar the right of transfer by one of the heirs to a stranger transferee. Although the possession is not permitted by law, yet the claim on the sold part of the property remains and that may create a social problem.

13. Lewis M. Isaacs, Jr 'To Buy or Not to Buy :  
That is the question what is a Co-operative Apartment? The Record of the Association of Bar of the City of New York. Vol 13 No. 4 April 1958, P. 207
14. Ghazi Shamsur Rahman, Islamic Law 1981.



Inheritance in Co-operative form of ownership is performed through nomination. Section 103 of Co-operative Societies Rules 1942 refers that all the members will nominate their nominees who will inherit the undivided interest of the respective shares. In this case Islamic Law of inheritance is in direct conflict with the Co-operative law.

It is necessary to retain the undivided interest of a housing unit. The legal formalities becomes less complicated when inheritance is executed through nomination.

### 2.5 Legal Instrument and its Implication upon the Transfer of Property

The transfer of multiownership (Tenancy in Common) may be performed by legal instruments 'Sale' and 'Lease'. The two instruments have differences regarding certain rights both from the side of seller and buyer. The property transferred by sale produces ownership right of 'free hold estate', while lease produces 'lease hold estate' that may be for a period or in perpetuity.

In broader context it may be observed that conditions of sale do not allow any future interest on the part of seller while in lease certain right of the lessor may be preserved through mutual agreement of lessor and leasee.

Building insurance securing the investment are not practised in our country. In case of fire, flood or any other manmade or natural calamities if the multiownership property partly or totally damaged and becomes unfit for use, without insurance security all the investment incurred may be lost. For security reasons, for all the parties, the lease, lessor and the financing institution, the building insurance may be made mandatory.

### 3.1 Summary of Discussion and Conclusion

The western countries who have successfully used multiownership or Co-operative form as system of housing 'delivery' have in some way solved the problem of property liquidity, housing finance and property transfer through new legislative measures reforming the existing legal frame works to accommodate the changed social needs. Our legal institution of property transfer is outdated and cannot meet the present social needs. It has been pointed out that 'Tenancy in Common' type of ownership fails to define the flat ownership in a multiownership development.

The absence of proper definition of 'right of ownership' in multiownership development and lack of legal recognition in the building subdivision without corresponding land subdivision may be pointed out as the key issue responsible for the problem in property transfer. All these more importantly effects the financing aspect of development.

### 3.2 The Suggested Modification in the 'Tenancy in Common' Form of Flat ownership

When the individual ownership in multiownership property cannot be defined precisely then the legal institution may recognise it and define it accordingly. This will enable the individual ownership to sense the property ( Dwelling Unit ) as an independent asset and that may be used for hypothecation or mortgage collateral.

There may be legal provisions which will simplify the existing formalities required in the transfer of multiownership property and thereby ensure the liquidity of the property similar to that of other home ownership properties.

The provisions may be made to allow financing agencies to advance loan to an individual for the purchase of built flats as well as for construction.

There is a need for mandatory building insurance policy that may be enforced to safe-guard the interest of financing institutions as well as that of occupant owners.

### 3.3 The Co-operatives

Much of the legal problems of multiownership are resolved in co-operative development, through the involvement of the organization. It is an well accepted form of multiownership development. The success of a co-operative project apart from the financial issues are significantly dependent on the proper management, group homogeneity and objective of the organization. These aspects are usually developed and formulated in the Co-operative by-laws in a setup as provided by the legal institution. The performance of the Co-operatives are controlled, regulated and motivated by the by-laws.

The Co-operative Societies Act 1940 has provided the basic format for the development of Co-operative Housing Societies in our country. The Act was introduced to promote agricultural Societies for increased production and economic benefits with a basic objective to make profit. In most of the Co-operative Society Projects, the reflection of this profit motivation have been found to be in practice. A non-profit objectivity have been observed to be successfully utilised in other countries for Co-operative development that primarily included lower income housing (15).

Apart from the objectives there are other confusions prevailing in the Act. Those are unspecified qualification (16) of key persons in-charges of the management, elaborate auction (17) procedures for property transfer, limitation on 'fund procurement' (18) from non-member sources and absence of provisions for 'mortgage security' (19)

15. Khairul Enam, M. Arch. Thesis
16. Section 35, Co-operative Societies Rules (CSR) 1942, P. 17
17. Section 153 CSR 1942
18. Section 67 and 68, CSR 1942
19. Khairul Enam M. Arch. Thesis



However, it may be said that Co-operative Societies Act 1940 is not appropriate for the nature of Co-operative Societies that required for the middle and lower middle income group.

When middle and lower middle income group is considered as the target population it may become important enough to regulate the activities of Co-operative Societies in a more precise manner so that most of the Co-operative Societies have non-profit motives. The interested housing Co-operatives may be supplied with pre-determined by-laws prepared with certain flexibility only to insert special interest that would not conflict with the non-profit objectives

There may be certain restriction on the transfer of a dwelling unit to a complete stranger non-member. The prospective buyer should be among the members of the co-operative society. The dwellers of the respective building block may be given the option to choose their new neighbours.

There may be provisions for mortgage insurance that would enable the societies to receive deposits from both members and non-members and loan from financing institution without showing land holdings as Security.

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02	Fuerst J. S	Public Housing In Europe and America, Groom Helm. London, 1974
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11	Voorhis Jerry	American Co-operatives New York, Harper and Bros 1961
12	Ratcliff U. Richard	Urban Land Economics Green Wood Press, Publishers 1972
13	Khairul Enam	The sharing problems of Multiownership development, M. Arch. Thesis 1984







have to be reckoned with. The broad system approach which seeks to deal with causes of problems has replaced 'physical determinism'. Conceptual shifts presage change in the planner's role. This is not the whole truth. The roles planners play are as diverse as the settings they operate in. The planner's role in an one-to-one client-consultant relationship is different from that of a planner in government employment. A comprehensive, all inclusive list of planners' roles is perhaps not possible.

### **Planner, the Technician**

Whether planning is 'decisions which lead to a more desirable future', (Terry Moore) or 'the technological analysis of means to specific ends' (Lisa Peattie), the underlying assumption is the concern for people. The AIP Code asserts it clearly, 'A planner serves the public interest primarily'. But in real world situations 'public interest' is an abstract notion subject to dubious interpretation. Absence of consensus, conflicts of values and interests of individuals and groups confuse and complicate the concept. Where such is the case it is only proper to let the people decide on their interests. Davidoff and Riener put it succinctly:

..... we maintain that neither the planner's technical competence nor his wisdom entitle him to ascribe or dictate values to his immediate or ultimate clients. .... Public decision making should reflect only the will of the various elements.

No matter who actually draws the plans, owns the land or finds the money, the people are the ultimate beneficiary or victim of planning actions. It is for the planners to advise and help the citizens perceive the technicalities and implications of different issues and solutions. Techniques and resources of the planners are to be used to analyse problems, devise alternatives or evaluate actions but the decisions rest on the citizens or their representatives.

In this sense the role of the planner is reduced to that of a technician.

### **Planner, the Broker**

Traditional theories of planning suggest the role of technician as being sufficient and appropriate for effective planning. This, however, is a conceptual over-simplification. Planning cannot be effective unless tied to political power. Planner, the technician, can be effective in a 'cohesive' community with strong leadership working towards coherent goals. But in a 'competitive' community with multiple leaderships and conflicting goals or in a 'fragmented' community without recognised goals or leadership, technical planning alone cannot provide political sanctions to make plans effective. The goal of effective planning imposes on the planner a series of roles that require increasingly heterogeneous skills as the political integration of the community decreases.

In a 'competitive' community two or more strong groups vie for influence and resources to further their conflicting objectives. Decisions on non-controversial issues are routine but controversial issues—unless a group has stake in them—are avoided for fear of conflict.

The planner can no longer function as mere technician limited to information processing and administrative roles. The planner must seek out issues of common interests, encourage bargaining, specify alternatives and negotiate solutions. Consequently, the planner has to "translate his professional skill and knowledge into tools that would direct the flow of choices towards (desired) outcomes". (Rabinovitz 1979). The role of the planner in a 'competitive' community is analogous to that of a broker.

### **Planner, the Mobilizer**

The 'fragmented' community is characterized by the absence of clear goals or leadership. The system is too weak to support actions and is noted for its inability to act on anything. Persuasion of the dominant group as in a 'cohesive' community or the knitting together of existing groups, as in a 'competitive' community, is not possible in a 'fragmented' system. The role of a planner in such a diffuse and open-ended system is complex and difficult. It is for the planner to initiate programmes, block actions contrary to planning principles and inact programmes in the face of opposition. The planner must mobilize those who might have interest across a broad spectrum and co-ordinate them, form alliances and muster resources for generating energy to support change. The role of the planner in a 'fragmented' system is that of a mobilizer, seeking and mobilizing support for plans or actions to which the planner himself is committed.

### **Planner, the Educator**

While an outline of all possible roles of the planner is virtually impossible, the range examined here brings out the 'core' functions required in almost all systems of decision making. The technician-planner advises elected or appointed officials. As broker and mobilizer, the planner reaches out to attract the attention of the interests likely to support his aim. The broker-planner establishes a position from which to mediate, while the mobilizer-planner takes a stride further. The mobilizer stirs the community into alliances for action. Inherent in all these roles—technician, broker and mobilizer—is that of the educator. The importance of education or explaining plans to immediate or ultimate clients is well established. Baron Hausmann's 'an act well explained, is an act sanctioned' is echoed by John Dyckman:

The importance of explaining has long been recognised in city planning, for the tradition of city planning as public persuasion was well-established by early consultants and continues in the advisory function of public agencies, as well. This is the significance of plans that stir men's blood.



Planners seek ways of helping clients or some of them to come to terms and work towards an approach to a common future. Planners enhance the citizens' or their representatives' competence to deal with their situation, articulate their own values and interests, invent their own solutions and follow them through to implementation.

It is the planner's responsibility to liberate, inform and empower the client to deal more aptly with itself (John Friedmann). The planner's role is common with the educator who seeks to reduce the dependence of the clients on the professionals.

### Conclusion

The situational variables of community systems are too numerous for an exhaustive account of possible roles. Barring a few 'core' roles—technician and educator—the roles planners play are contingent on the nature of the systems in which they operate. Performance of these 'core' functions do not grant political sanctions to formulated plans. In the words of Herbert Gans, 'city planner is no longer a non-political formulator of long range ideals'. Discovering grounds for coalition, negotiating solutions, maintaining and manipulating alliances into actions require tasks, skills and diligence demanded of politicians. Loathsome, as it may be to professionals, the demands of effective planning and professionalism as taught in schools, are contradictory. Professionalism based on 'high principles' is an ideal, having little relevance to reality. Stephen Bailey's comment captures the spirit :

..... 'politics' and 'self-seeking' are frequently synonyms. But self-seeking' and 'high principles' are antonyms. Only the naive would suggest that there is no self-seeking in the (profession). But professions cannot exist without public support. If a profession wishes to gain support, it surrounds itself with words and symbols which elicit public favour. That it feels constraint to do so is one of the moral wonders of the universe.

Effective planning dictates on the planner roles that are clearly political. Planner, the technician, the broker, or the mobilizer—are roles where the line between politics and profession is non-existent. Expecting actions on plans without political sanctions is dreaming the impossible. Apolitical plans are destined to collect dust or affect minor changes.

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### Introduction

The Government has placed great emphasis on development at the Upazila level, and part of this has included the preparation of Land-Use/Master Plans for the Upazila Headquarters (HQs). These HQs are mostly large, dense or small-to-medium towns and till now most of them have never had master plans prepared before.

The preparation of these plans for the HQs is a major programme, being supervised by Urban Development Directorate (UDD) under the Ministry of Works and carried out by local consulting firms. The objectives of these plans have been spelled out in the Terms of Reference (TOR) given to the consultants, and in summary are aimed primarily at providing a framework and phased development of the Upazila centre, as well as providing facilities and services to the surrounding rural areas, by helping to attract the rural migrants who would otherwise go to the large cities.

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## SOME PROBLEMS AND PROSPECTS OF PLANNING THE UPAZILA HEADQUARTERS

Robert Gallagher \*

### Introduction

The Government has placed great emphasis on development at the Upazila level, and part of this has included the preparation of Land-Use/Master Plans for the Upazila Headquarters (HQs). These HQs are mostly large bazar or small-to-medium towns, and till now most of them have never had master plan prepared before.

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In other words the master plans are primarily town plans aimed at ensuring a good future urban environment. The means of achieving this is to be through a land-use map (similar to a zoning map), which is to be implemented through building and land-use controls, and also the provision of infrastructure (roads, electricity etc.) and the acquisition of land for public purposes (eg. parks, schools, roads, hospitals etc.). In fact, the implementation can be linked to a 'stick and a carrot to move an animal'—the building controls are the 'stick' and the infrastructure and land acquisition are the 'carrot'.

But inspite of the priority being given to these master plans, and the genuine efforts of Government administration and consultants alike, how effective are these plans really going to be, and what are the prospect that they will achieve the aim of good future urban development in the Upazila Headquarters (HQs).

### Some Key Problems

One of the key problems which these plans will face is that of compensation for loss of land rights through planning control. In their plans the consultants are zoning private land for different future uses: road layouts, parks, schools, health centres and so on. But what will be the likely reaction of the land owner when they find their land has been allocated, say, for a future health centre? They certainly will not be happy. They may build on it quickly—at worst they would get higher compensation when the government purchases their land; at best, the government may be forced to abandon the idea of a health centre there altogether. Alternatively, the owner may demand that, since he is not allowed to build, the government must immediately purchase his land so that he can build at some other location. But in nine cases out of ten the government will not have the funds available to purchase, so they will have to drop the zoning and let him build.

We could say.....“but the Upazila Nirbahi Officer (UNO) has legal powers to control all building” activity within a one mile radius of the HQ. But why should we expect that the UNO will be better at controlling building activity than organisations such as Dhaka Improvement Trust (DIT) and Dhaka Municipal Corporation (DMC), which have not managed to regulate new building development in many parts of the capital city. Rayer Bazar, Basabo, Gandaria, and Old Dhaka are all areas which have grown up almost entirely without any form of control, inspite of the Dhaka Master Plan of 1959.

A second key problem is that of forecasting future land-use. The consultants have been given guideline planning standards to help them in allocating land for future population, for example the TOR suggests one acre of open space per 1000 population, 2 acres for primary schools per 5000 population, and so on. But there are problems in applying these standards. Firstly, an uniform standard does not allow for variation between one HQ and another, or between inner neighbourhoods (where land is expensive) and outer neighbourhoods (where land is cheaper). Standards do not recognise that land can be used more intensively, for example through vertical building, or introducing a shift-system (in schools), or multi-use of offices and community centres.

Further more, it is very difficult indeed to forecast future land-uses and land requirements for 20 years ahead. Just because a master plan says land will have a certain use does not mean that it will necessarily happen in practice. It is hard enough to forecast the future population, let alone where the future population, will locate. (Will it be within the existing area, or in new fringe areas?) It is also difficult to predict how much land different government departments will require in future. Take health for example, will the government emphasis a main central health centre, or prefer smaller sub-centres dispersed in the neighbourhoods? Either approach has different land requirements.

Hence forecasting future land requirements is a very hazardous and approximate business, and the assumptions on which these forecasts are based are soon out of date. The Dhaka Master Plan of 1959 predicted that Dhaka's population in 1978 would be 8,94,000 whereas in fact it was 16,80,000 by 1974. So the master plan for the Upazila HQs should not be a rigid blue-print specifying each and every land-use for the next 20 years, but a document with some flexibility that can be modified from time to time. The British Planning system encountered these same problems in the 1950's and 1960's, and consequently the Structure Plan and Local Plan approach were adopted.

A third key problem is that of checking and approving the Upazila HQ plans. Since these will try to regulate all future land uses and therefore affect people's property rights, there has to be provision for checking the plans in a proper manner, and allowing people (individuals) to appeal if they think they have been unfairly treated. Indeed, all of the planning laws of Bangladesh contain a provision allowing appeal.

But how far is UDD, the supervising and approving authority, in a position to properly check all of the plans? There are so many plans to be checked, and only a limited number of staff available, and in any case it is difficult to approve or disapprove if one is not familiar with all the land in question (which of course is not possible). Hence people's land rights are being affected by these new plans, but the mechanisms for ensuring that fairness and legality as observed are very weak.

### Prospects

How far these Upazila master plans will succeed in ensuring a good future urban development, therefore, depends crucially on whether the problem of compensation can be tackled, and also whether an appropriate building and land-use control system can be introduced where, till now none has existed.

It would be unwise to assume that the level of building and land-use control practised in the West, for example in United Kingdom (UK), would work here in Bangladesh. In the UK the local government has very extensive powers to control the type of land-use and the type of building permitted, and they do not have to pay compensation if permission refused. Hence if a farmer, for example, wishes to build some urban houses



on the edge of a town, the local government can if they wish refuse permission, if there are good planning reasons for doing so, and it is the farmer's hard luck. No compensation is paid, for he has not lost the land, simply he was not the lucky one chosen for getting the urban land-use and hence the urban land value.

But this system in the UK of not paying compensation has only operated since 1947. Before compensation was payable for the loss of building rights. \* Hence in the 1930's the British planners had to make master plans which never said 'no', they made excessively generous allocations of land for urban development so as to avoid having to pay compensation. Hence the 1930's plans were quite ineffective.

In Bangladesh today, most of the plans are not implemented except where the Government owns the land. Hence in Dhanmandi the roads are 40' wide, but the moment you enter Rayerbazar the road width shrinks to 12', because the land is privately-owned and government has not got the owner in practice to enforce set-back.

For the growing Upazila HQs it seems unlikely that the proposals for future public land-uses such as parks, schools and roads will be implemented unless the Government also purchases the land.

A 40' wide road will not happen by building controls alone. But Government purchase of land for public purposes also introduces the problem of betterment. The public facilities provided greatly increase the value of the surrounding properties (ie. the properties enjoy 'betterment'). Their land value goes up (without any expense from the owners) while the Government incurs, a huge cost of providing the land and facilities. The obvious solution is to make a change on the beneficiaries (ie. a 'betterment tax'), and provision for such a tax exists in Bangladesh law. But in common with most other countries, it has proved difficult if not impossible to administer in practice.

However, even without 'Betterment' urban land values will still escalate rapidly. In Savar the land values increased 40-fold in eighteen years (1960 - 1978) on average, and 100-fold in some places. So the cost to the Government of purchasing land for the necessary roads, parks, schools etc. will become more and more prohibitive, and 'Rayerbazar' will be the rule rather than the exception in the future.

One step to tackle this problem (among several possible) might be as follows: to declare when the Upazila Master Plan is published, that land shown in the plan as being for a

\* In the early 19th century in Britain, however, there was no compensation paid for building controls which demanded 'good neighbourliness', for example proper drainage, limits to over crowding etc. Gradually through the 19th century the definition of 'good neighbourliness' for which compensation was not paid was widened and widened, until finally in 1974 the right to determine land-use was made a local government prerogative.

future public use carries with it the commitment and requirement that the government (ie, the appropriate department) must purchase the land. However, the value of the land thus shown is frozen at its existing use and present value. Whatever the value of the land has at the time of publication of the plan, this is the value (adjusted upwards for normal inflation) which the government will pay when it acquires the land plus a 20% bonus for the forced nature of the sale, as required by the current land acquisition law of 1983.

This way the landowner receives a fair price for the land, but the government is able to designate land in advance of requirements while it is still non-urbanised and relatively cheap, and then purchase it later when the funds become available.

However, under this system there might be a temptation on the part of the government departments to designate more land than they need, and it would be unfair to landowners if their land was designated for public use, and then the government did nothing to purchase land and finally dropped the designation. One way of curbing this temptation would be to make compensation payable by the Government for non-purchase. But a better alternative would be to put a maximum 'life' on the designation—say 10 years—after which the designation lapsed and could not be renewed. In other words, once a master plan is published, the land for the different public land-uses shown (eg. bus station, roads, parks, new government housing estate etc.) can be acquired within 10 years at the present value, \* but if not purchased within 10 years, owner would have the right to develop the land himself for a reasonably suitable land-use.

It would be fair for landowners to have the right to insist that government must purchase their land once it is designated, and there is a risk that when the plan was published owners would demand immediate purchase hoping that the government would-n't have sufficient funds. But quite probably this would not be a widespread occurrence because landowners would be able to enjoy the full use of the land until acquisition, and in any case the value of compensation would increase in line with the cost of living, so the owners would not lose much by waiting. And if they held on to the land there would be a chance that the Government would not purchase it anyway.

Linking the designation of public land-uses to a requirement of purchasing the land would encourage the Government departments to be economical in their proposals for public land allocations. (Many of the consultants' master plans, following the standards recommended in the TOR, have made unrealistically generous land allocations for schools, roads, parks etc., which have little chance of being implemented in practice.) Freezing the land compensation value at its present value takes out the element of betterment while still giving the owner a fair price. It makes land cheaper for local government and other departments to purchase and therefore holds out a prospect of achieving better standard of environment. Designating suitable sites for public land-uses is something which local government can do quite well (as they know the land) and as it would be their funds that were used for the land purchase, it also helps to decentralise responsibility to the local level.

\* Plus normal cost of living inflation plus 20%



Such a measure discussed above would require legislative changes. It would require the setting-up of a central government fund from which local governments could borrow or receive grants (depending whether the public land-use was remunerative or not). Nor would such a measure prevent other government land acquisition in the normal manner as and when necessary, and building controls (eg. set-back, height units, density limits, water and sanitation connections. etc) would continue to operate.

There are other approaches to the problem of compensation and betterment (eg. reconstitution of plots, land banking, taxing capital gains etc.), which are not discussed here. But if the Upazila HQ master plans are to be a success, this problem has to be grappled with, and a decision has to be made at the top level, HOW MUCH CONTROL OVER BUILDINGS AND LAND-USE CAN BE EXERCISED WITHOUT PAYING COMPENSATION? At present the law says 'full control with no compensation', following the current British model. But since building control in most places in Bangladesh is simply not taking place the question of compensation does not arise in practice. But now is the time we should decide.

## INDUSTRIAL NOISE : A CASESTUDY IN DHAKA

Dr. M.A. Muktadir \*

Mr. Nizamuddin Ahmed. \*\*

### Introduction

Man is inescapably immersed in sound fields althrough his life. Some sounds are useful and desirable while others are disturbing and annoying and still others are harmful and damaging. Historically for a long time noise used to be viewed only as a disturbing or annoying element in the man-made environment and its quite extensive range of bodily harmful effects did not draw our serious attention. It has been discovered in recent years that in addition to causing annoyance and hearing loss noise can have other detrimental effects on human bodies and mind. Research has shown that when the noise level exceeds 70 dB which is about the level that prevails in a common city street, it begins to affect the human body adversely. Thus noise higher than 70 dB can cause an increased rate of heart beat, an increase in the body temperature, a slowing down of the digestive and the respiratory systems and so on. As a result the blood vessels of the body contracts, blood pressure increases and blood circulation in the heart decreases. If the noise level increases further, the resulting ill

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effects on a person become more pronounced and more diversified. All these happen automatically and one can not escape from such consequences under any circumstances because unlike most environmental elements, noise is independent of the process of 'acclimatization' in relation to its perception by a person. Even in sleep, a person can not escape the consequences of high noise levels. It has been experimentally observed that a relatively low level of 55 dB produces in a person the same effects when he is asleep as when he is awake. Although such a noise level may not interrupt his sleep decisively, it will none the less have the effects of a series of unsatisfactory 'cat naps' instead of a satisfying and refreshing sound sleep. If a person, particularly an aged or an ill one, suffers from such interruptions constantly for a long time then he may not only become seriously unstable but also he may even develop schizophrenic, homicidal or suicidal tendencies.

Perhaps the largest single group in any country of the world exposed to the hazards of high levels of noise is formed by the industrial workers. The problem is of grave nature in the developed nations where life is greatly mechanised, industries are many in number, large in size and noisy in character. In a developing country like Bangladesh, the nature and extent of the problem may not be that serious but it is serious enough to merit attention from architects, engineers and others concerned. The situation here is potentially more alarming because of the fact that the industrial workers in Bangladesh as in most other developing countries are totally unaware, unlike their counterparts in the developed nations, of the dangers of working continuously in a noisy environment. Bangladesh is not an industry based nation but the number of industries is increasing every year. There are several industrial townships in the country namely, Tongi, Khalishpur, Narayaganj and so on. Besides there are numerous small scale workshops in most of district towns and a sizable number of workers in this sector are often exposed to very high level of impact noise, if not steady level of harmful noise. There are no laws, regulations or codes of practice pertaining to the level of allowable noise in the industries. But then none is aware of the havoc that noise is actually playing. It is high time for us to take up the matter of noise in the industry seriously.

### Objectives and Scopes of Investigation

The broad objective of the study and investigation was to collect information by noise measurements in a selected industry with a view to develop an understanding concerning the prevailing industrial noise scene. More specifically the objectives and scope of the study may be enumerated as follows :

1. Measurement of environmental noise level in dB(A) at work stations in the selected industry.
2. Measurement of environmental noise level in octave bands at work stations in the selected industry.

To make an assessment of whether noise problem exists in an industry or not one may take dB(A) measurements in the environment at different stations and compare the values with the following standards in different countries :

Table 1 : National Standards For Steady Noise Levels

Countries	dB(A)	Countries	dB(A)
Germany	90	Sweden	85
France	90	USA	90
Belgium	90	Canada	90
UK	90	Australia	90

If the results of these simple measurements and comparisons indicate a noise climate beyond the level of acceptability then a further set of measurements should be made for octave band analysis because noise reduction measures are frequency dependent.

### Measurement and Analysis Techniques

The most common noise measurement is expressed in dB(A) level. It is measured with a Sound Level Meter using the A-weighting filter to simulate the frequency response of the human ear. The sound signal is converted to an identical electrical signal by a high quality microphone. Since the signal is quite small it must be amplified before it can be read on a meter. After the first amplifier the signal may pass through a weighting network (A,B,C or D). An alternative to the network is an octave or third-octave filter which may be attached externally. After additional amplification the signal will now be of a high enough level to drive the meter — after the audio-frequency voltages are fed to a rectifier giving a DC output proportional to the RMS or peak value of the signal at a defined time constant. The value read on the meter is the sound level in dB. The sound signal is also available at an output socket so that it may be fed to external instruments such as recorders or noise dose meters. The microphone choosen for a particular noise measurement will generally have to fulfil two rather different groups of conditions :

Firstly, it must operate satisfactorily over a range of environmental conditions such as humidity, temperature, air pollution and wind.

Secondly, it must also meet the technical constraints such as frequency response, sensitivity and directivity.

Generally speaking, the condenser type microphone is best able to meet these conditions and has therefore, become the most widely used type.

Before commencement of the experimental measurements, the SLM needs to be calibrated. This was done using a Pistophone which operated at 250 Hz and produced a sound level of 124 dB with an accuracy of  $\pm 0.2$  dB.

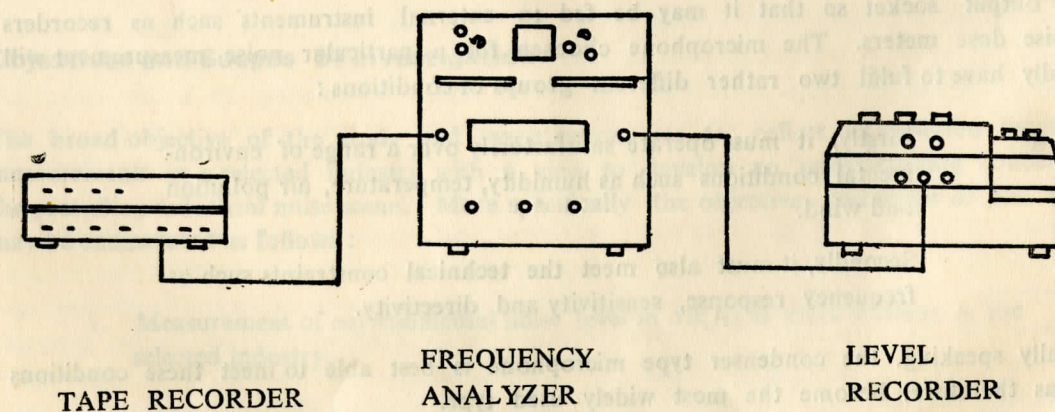


In the experimental measurements of sound levels a Precision Sound Level Meter with a high sensitivity 1/2" diameter free-field condenser microphone was used giving it a measuring range of 26 to 140 dB(A) and a wide frequency range, both in free and diffused sound fields due to its excellent omnidirectivity. Measurements were taken at the nodal points of a grid-iron plan superimposed on the space under investigation and the spot values of dB(A) were recorded.

Once the quick and simple dB(A) measurements were done, the next step in the experimental work was the frequency analysis of the measured noise in octave or third octave bands. Frequency analysis is required to predict the necessary insulation/absorption characteristics of noise barriers and space enclosures and to measure noise reduction between common walls of adjacent spaces. Frequency analysis is also invaluable when a noise control system must be reworked because it assists in defining the minimum modification that will enable the system to meet the desired specifications. Frequency analysis is performed with a combination of Precision Sound Level Meter and Frequency Analyzer which can be a battery operated, compact and portable device for direct measurements in the field.

In case of non-availability of such a compact and portable device a battery operated portable taperecorder may be used in conjunction with the SLM for recording and storage of field noise data for later processing in the laboratory and we had to adopt such a means in our case. The measurement setup was used as per the standard operating procedures and continuous reading for a period of approximately two minutes was recorded on the tape at the two selected stations in the factory which belonged to the noisiest sections of the industry.

Having done the field recording of the noise on the magnetic tape of the recorder, the equipments were brought back to the acoustic laboratory for processing of the noise through a Frequency Analyzer and recording the levels at various third-octave bands in a level recorder. The instrumentation for this phase of the investigation was as follows :



The Frequency Analyzer was a constant percentage bandwidth analyzer for use in the frequency range 2 Hz to 20 KHz in conjunction with the internal filters. The level recorder

was basically a recording voltmeter designed to accurately record the RMS, Average or Peak levels of an AC signal in the frequency range from 2Hz to 100 KHz. Recording as a function of time or frequency could be made on pre-printed, lined or frequency calibrated stripchart paper, 50 or 100 mm wide. In our case 100 mm wide recording paper was used and the experimental setup was operated as per the standard procedures.

## Results

The results of the dB(A) spot values measured were as follows :

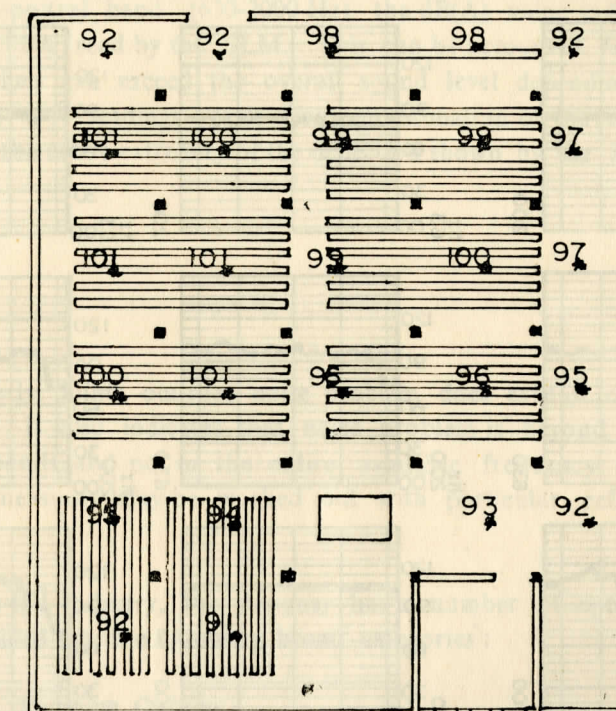


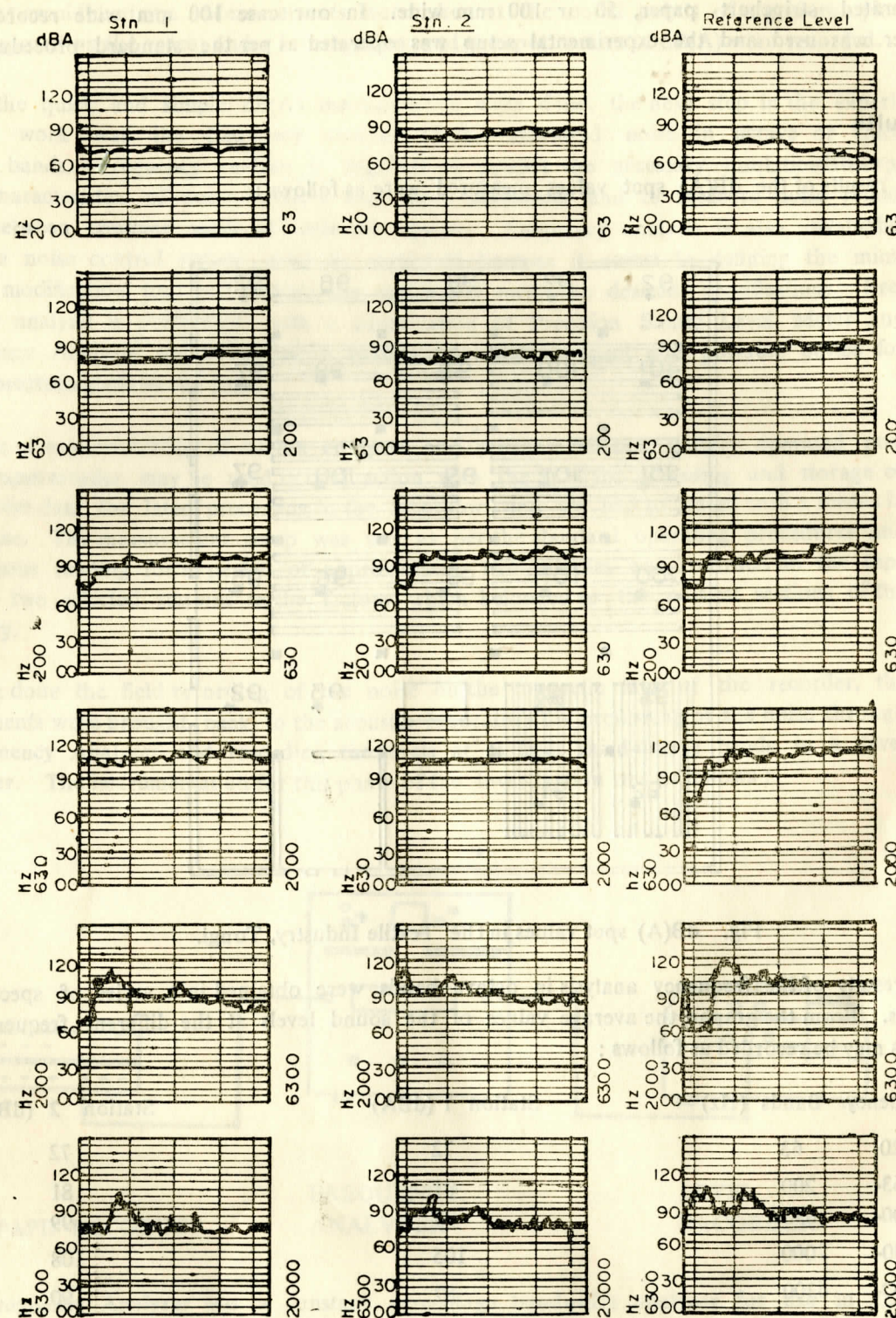
Fig. dB(A) spot values in the Textile Industry, Tongi.

The results of the frequency analysis in octave bands were obtained in a series of spectrograms. From the graphs, the average values of the sound levels at the different frequency bands may be recorded as follows :

Frequency Bands (Hz)	Station 1 (dBA)	Station 2 (dBA)
20- 63	72	72
63- 200	81	81
200- 630	93	99
630- 2000	105	108
2000- 6300	87	90
6300- 20000	78	78



The spectrograms representing variations of sound levels at the different frequency bands are reproduced as follows :



The third-octave analysis of the noise of the industry under study was carried out in order to identify the frequencies where the problem is most serious. It is known that sound absorption by a material is frequency dependent. The octave or third-octave analysis, thus, can guide the choice of absorptive materials for efficiency in the frequency bands where the noise occurs with greater severity.

The general character of the spectrograms obtained from the two measuring stations is more or less identical. They show that the dB(A) levels in the case under study are above the allowable level of 90 dB(A) in the frequencies ranging from 200 to 6300 Hz. At other frequencies the values indicated are below the allowable level.

In one particular spectral band (630-2000 Hz), the dB(A) value is found to be higher than the spot value of dBA read by the SLM. This can be accounted for by the fact that intermittent or peak values can exceed the overall sound level depending on the type of noise source. Moreover, spot readings result from an estimation of the average sound pressure level rather than the entire extremity of the deflection shown by the SLM needle.

## Conclusions

The case study clearly points out that noise problem does exist in our industries in rather severe magnitudes. It also indicates that noise problem is beyond the allowable limits in certain frequency bands and not in the entire available frequency spectrum. This means that noise control measures may be worked out with particular reference to the relevant frequencies.

For noise control in the industry, the designer has a number of options available to him. These may be classified into the following broad categories :

- (i) Planning Options
- (ii) Design Options
- (iii) Construction Options

In each of these categories of options, the question of frequency component of the noise under consideration is of paramount interest because noise control measures and practices are frequency dependent. The study, apart from its technical contribution, will hopefully generate a degree of awareness in the related quarters concerning the issues pertaining to noise problem in the industry in Bangladesh.



Work has not been carried out in order to identify the frequency where the problem is most serious. It is known that sound absorption by a material is frequency dependent. The octave or third-octave analysis, thus, can guide the choice of absorptive materials for efficiency in that frequency bands where the noise occurs with greater severity.

The general character of the spectrum obtained from the two measuring stations is more or less identical. They show that the dB(A) levels in the octave bands are above the allowable level of 90 dB(A) in the frequency ranging from 500 to 8000 Hz. At other frequencies the values indicated are below the allowable level.

In one particular spectral band (630-5000 Hz), the dB(A) values tend to be higher than the spot value of 90 dB(A) and by the 11th octave band the level is 100 dB(A). This may be accounted for by the fact that interior of the building can exceed the overall sound level depending on the type of noise source. Although the readings reflect an estimation of the average sound pressure level rather than the maximum level, the deviation shown by the dB(A) scale.

# BUILDING CONSTRUCTION REGULATIONS 1984 — AN EVALUATION

Khaleda Rashid \*

The construction industry in Bangladesh has been growing rapidly in the last few years. It is a sector which has attracted the attention of the government and the public alike. The industry has been the backbone of the economy and has provided employment for a large number of people. However, the industry has also been the source of many problems, particularly in the area of building construction. The Building Construction Regulations (BCR) 1984 were introduced to regulate the industry and to ensure that buildings are constructed in a safe and sound manner. This paper evaluates the BCR 1984 and discusses the problems associated with its implementation.

## Introduction

Where direction of urban growth depends on numerous individual actions taken without reference to community objectives or what others are doing, urban planning is a frustrating process. While it is generally accepted that we cannot design cities, we can structure or organise it and possibly design parts of it. Master Planning, Zoning and Building Regulations can be used either in combination or separately to structure and guide city growth.

Urban development in Bangladesh has been virtually free — free from encumbrances of regulations and legislations. The East Bengal Building Construction Act 1952 is too elementary to be of any real value. The bye-laws framed by virtue of the powers vested by the Act are illconceived and arbitrary. Architects, planners and concerned citizens have long bemoaned this state of affair. A recent flicker of hope ended in smoke. The Building Construction Regulations (BCR) 1984 published and formulated by the Ministry of

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Works does not merit better credit than the one it replaces. This critique is in no way intended to detract from the sincerity of the public officials who have sought to change for the better the use of our scarce resource — the land. Much hard work and energy have gone into it. But to what purpose? Will the new set of regulations promote a desirable environment? This is the bottom line; the most critical question.

### Regulatory Measures

Construction regulatory measures bear strongly on the physical configuration. In the extreme regulations "do actually design the environment." (1) The banality and dullness of residential and commercial areas in Chandigarh are a function of uninspiring and over-zealous regulations. (2) The setback regulations of New York (1916) changed tall buildings from straight towers to pyramidal mass. (3) Of necessity the visualization of the physical environment is a pre-requisite to formulation of building regulations. What physical forms should be encouraged? Western philosophy of development, colonial pattern of land subdivision, and the alien concepts of health, safety, and general welfare have long dominated our ideas and actions. Can it be that our culture; sense of community; and way of life as manifest in our physical environment are inadequate and devoid of merit? Can we in honesty turn our backs on the past as if it never existed? When conscientious thinkers and experts of the west are extolling the virtues of our indigenous physical environment, we are bent on either destroying it or writing obituary to it. Wholesome environment as perceived by planners, designers or experts is not the same as conceived by the users of the environment. That experts understand the needs and aspirations of the users better than the users themselves is no longer acceptable. Given the chance, the user can make positive contribution towards guiding and managing environmental growth. There are increasing evidence in support of this contention. The planning of Sri Ampang, a squatter settlement in Kuala Lumpur, Malaysia, was done — and done quite well — entirely by the settlers themselves. (4) The positive contributions of the users to the planning and design process is well documented by Jane Jacobs(5) and Christopher Alexander (6). Decisions at any scale have a better chance of success when based on users' perception of the image of the environment. (7) Regulatory measures framed in isolation of the community objectives, breed suspicion and alienation towards the authority. With the growing capability of the disadvantaged to assert themselves planning process assumes the same importance as the outcome. Gone are the days of planning in secrecy. This is recognised even in the Second Five Year Plan. Admittedly there are no easy prescription of doing this, nor can a process be identified and said, 'this is how it is done'. Methodology is useful only within a frame of reference. It loses much of its validity with the change of context. Techniques useful in a developed country may not be effective in Bangladesh. Methodology has to grow from the contextual conditions of culture, society, institutions and economy. There is no 'pure' approach in planning — perhaps the best approach is a 'hybrid' one. (8) Tools such as seminars, surveys, interviews, and workshops may be useful in obtaining community inputs. Information may also be obtained from formal studies on behaviour and attitudes of the users.

### Building Construction Regulations 1984

Only on incorporation of the felt community needs can regulatory measures guide an environment to a 'desirable' state. The Building Construction Regulations (BCR) 1984 will not promote a 'desirable' environment. It is not in its nature to do so. The regulations are negative and passive in the sense that they seek to prevent the 'undesirable' but are not designed to encourage the 'desirable' qualities of an environment. Even a cursory glance reveals that the regulations are based on illusory concepts of health, safety, morals and general welfare. There has been no attempt at understanding our environment and culture or feeling the pulse of our people. The message is loud and clear. The regulations are inspired by an alien spatial concept but without the devotion and loyalty needed to translate the concept to reality. The mandatory setbacks varying with size of plots and arbitrary but uniform building coverage reinforce the view. Even on the improbable assumption that the regulations have well conceived deterministic back-up study, one fails to see the wisdom behind many of them. It is beyond the scope of this short paper to touch on all the points of concern but a few obvious examples will clearly show the points missed.

### Setbacks

The setback regulations suffer from absence of qualification. Setbacks have little relevance to environmental quality if height or floor area ratio (FAR) is not specified. Where light, air, and privacy are the aim (which I presume to be so) distance sufficient for light, air and privacy between two one storey buildings cannot be effective when the number of storeys increase. In mixed-use areas too, almost the same setback is prescribed without reference to the nature and the type of use. Will a setback of 1.5 meter or 4.5 meter from the centre of the road, whichever is more, as required for commercial plots, make commercial areas any better than they are now. Setback regulations alone cannot provide a congenial physical environment. Dhaka itself is a testimony to the statement. Form and configuration of the old and the newly emerging commercial areas in Dhaka are an eyesore to a trained eye. Squeezing lots with setback lines wastes land and results in an uniform building location on each lot. This uniformity gives a monotonous 'dentelated' effect as it is repeated down the street. The relation of setbacks to health, and welfare is quite obscure. The use of performance standards referring to access, space, privacy, maintenance and view will permit the abandonment of setbacks without risking substandard arrangement.(9)

### Garage and Porch

How does a direct entry to the garage from the road hamper an environment? Perhaps backing into the road may be 'undesirable' but can this not happen in other ways? Even in countries with established tradition of regulatory controls direct entry into garage from road is allowed. How does one accommodate a garage or a porch within a height



of only 2.5 meters (i.e. 8'-2") from the road elevation? It is common knowledge that road elevation gradually increases in Bangladesh. Finished Ground Level (FGL) of any lot has to be above the Road Level (RL). The adverse consequence of keeping the FGL at the RL or even 6" above the RL is clear in many places of Dhanmondi Residential Area. Even if the FGL is raised to 9" (which too may be inadequate) above RL we are left with only 7'-5" to accommodate the plinth, the roof slab, lime terracing, and the parapet. Allowing 3" for garage plinth, 4" for roof slab, 3" for lime terracing and 3" for parapet we are left with only 6'-4" clearance. This falls short of even the minimum height specified for garage, not to mention the aesthetic and psychological trauma of such a low height. Can a 6'-4" high entry porch of an otherwise lavish house, be considered appropriate? The only practical implication of such an unrealistic regulation is tacit violations which have already begun.

### Car Park

Parking in our commercial area is conspicuous by its absence. During office hours almost half the road is occupied by cars alone. Parking is done without respect for rules or other users of the road. BCR 1984 mandates one parking stall for every 20 users in offices, cinema halls, shopping centres, auditoriums and indoor facilities. Without going into the controversy on the adequacy of the ratio, it may suffice dealing with the anomaly alone. Parking for office, shopping and other activities that do not have fixed seating capacity, is conventionally related to square footage of built-up area. Many regulations even provide for a progressive ratio. (10) Ratio aside, BCR 1984 sets mutually contradictory parking standards. Section [20] specifies a parking area equal to the plinth area for commercial buildings five-storey and above. This seems to imply that for commercial buildings below five storey no parking will be required. How does one reconcile with two standards in the same set of regulations. BCR 1984 erroneously assumes same car ownership throughout Bangladesh. It does not need an expert to see the futility and wastage involved in providing across the board parking standard for all urban areas of Bangladesh. BCR mandates parking requirement but is silent on stall dimensions, ramp gradients and other elements that are sine qua non of parking regulations.

### Discrimination

Regulatory measures should avoid discriminating against individual property owners and to relieve individual hardship, must provide for variance from any particular rule. Consequently regulations tend to be generous and non-controversial except where legislators decide that sufficient and clear public purpose exists for imposition of strong control. (11) This is an established practice necessary to maintain justice and fairplay. But BCR 1984 is biased towards certain property owners and tends to perpetuate injustice. Section [15] of the BCR categorically states that no approval for construction of buildings will be given where road widths are less than 3.5 and 4.75 meters in high and low density areas respectively. Notwithstanding the controversy on density, should property owners be penalised

for no fault of their own? The Town Improvement Act 1953 provides [Section 72 (4)] for compensation or compulsory acquisition in case of refusal to grant approval to a private scheme for development. Will this not over-burden an already impoverished authority? How was the magic number 3.5 and 4.75 achieved? On what criteria is a road width of 3.5 meters adequate for a high density area but not so for a low density one. Instances may be cited where roads below the minimum specified width were constructed by the authority. Kachu Khet in Dhaka Cantonment has many such roads constructed by the Dhaka Cantonment Board.

### Authorised Officer

BCR 1984 requires that certain types of buildings be designed by professionals. This is encouraging but there is a darker side of it. No eligibility requirement is laid down for the 'authorised officers', who will approve or reject the design. In accordance to the Town Improvement Act 1953 an authorised officer may be any official nominated by the government. If past practice is any indicator, an authorised officer may even be a person not competent enough to design. To put it in mild terms, it is a professional affront to submit ones design to examination by a person of doubtful competence. In the interest of the public and the professionals the minimum requisite qualifications for an 'authorised officer' must be spelled out.

### Conclusion

Bangladesh Construction Regulation 1984, like its predecessor, will not achieve anything significant. It is weak and inadequate to foster even the spatial concept that has inspired and nursed it. Based on regulatory concept originated and developed in the west, BCR 1984 takes a very narrow view of controls. The concept is ill-suited to our context of urban development. Using the environment of the west as model will not take us far. It is not self-evident that urban controls should be closely adjusted to the present social pattern and preference. Nor should the social life and our indigenous urban pattern and form be completely disrupted to fit in what the planners and urban designers may believe to be the inevitable future trend. A balance between the two points of view appears to offer the prospect of a viable policy for the present.

The path to devising regulatory controls is painstaking. It requires knowledge, skill, creativity and above all understanding and appreciation of the community needs and desires. There are no room for whims; there are no short cuts. Regulations designed to prevent the 'undesirable' cannot promote the 'desirable'. Both the carrot and the stick have to be used.

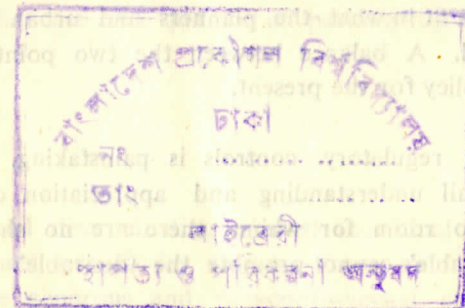
Regulations should aim to preserve, control and encourage sufficiently the activities, forms and qualities that give life and character to our environment. Or else the bland, monotonous, and sterile qualities of strictly regulated environment will overtake us. Lost for ever will be the gaiety, colour, and the lively mix of activities for which our environments are known.

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