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THE EVOLUTION OF LOW-INCOME HOUSING ALTERNATIVES IN THE CONTEXT OF RAPID URBAN GROWTH: A CASE STUDY OF BOGOTA, COLOMBIA

by
James R. Mackenzie

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
MASTER OF ARCHITECTURE
IN URBAN DESIGN

APPROVED, THESIS COMMITTEE:

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HOUSTON, TEXAS
MAY 1987
The Evolution of Low-Income Housing Alternatives in the Context of Rapid Urban Growth: A Case Study of Bogota', Colombia

by

James R. Mackenzie

Abstract

In Bogota', demand for low-income housing outgrows the supply by the legal and illegal sectors, therefore imposing a great burden on the process of urbanization, and the urban poor's residential environment. To improve this situation will require alternative physical and programmatic urban design solutions in order to reduce the impact of uncontrolled physical growth, social alienation and a mere quantitative view of the problem. Hence, a reinterpretation and changes in the formulation of government policy, the structure of public expenditure and the manipulation of the agents of change at the urban design level will be a necessity.

The magnitude of current problems in the provision of low-income housing and their impact on the process of urbanization was first established. Strategies and policies employed to resolve these problems were then documented. The outcome of low-income housing provision developments were analyzed and alternative approaches suggested.

While there are many lessons that can be drawn from the analysis presented, what emerges is an understanding that efforts within the urban core of Bogota' need to be directed towards a greater optimization of urban land resources by densification, human manpower, materials and organizational ability of low-income groups.
ACKNOWLEDGEMENTS

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I would like to thank my friends Joseph Bartoszek, Daniel Motta and Alberto Saldarriaga (C.E.A.M) for their friendship, support and helpful advice.

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URBAN LOW-INCOME HOUSING IN LATIN AMERICA

I. DEFINITION OF THE PROBLEM

A.- Urbanization in Latin America

One of the most pressing problems of urban areas in Latin American countries is the provision of housing for the increasing number of people in need of shelter. Existing residential environments for the urban poor are inaccessible to the neediest, inadequate in terms of standards, and insufficient in meeting the increasing demand.

Urbanization in 19th century Europe and North America was accompanied by industrialization and rapid economic growth, but the urbanization of the rest of the world is taking place in the 20th century, with lower levels of economic growth, industrialization and employment. The poor physical conditions, and the unsatisfactory working and living environments experienced by many people in nineteenth century Europe are well known (1). The conditions of life for the three hundred million (2) urban dwellers living in the developing Latin American countries in the twentieth century are less well known.

In 1970, there were just over three and a half billion people in the world. By the end of this century there will be about six and a quarter billion, half of them living in urban areas. During the same period, the population of developing countries is expected to double, and the urban population is certain to triple (3). In quantitative terms, the main problems deriving from this increase in population will be associated with the process of urbanization.
Given the present population trends, the continued growth of the urban population due to migration and births in urban areas is inevitable. It is important to note, however, that there are wide differences in growth rates from country to country within Latin America. For instance, "during the decade between 1950 and 1960 the Organization of American States disclosed that Costa Rica, El Salvador, Ecuador, Haiti, Panama, Nicaragua, Brazil, and Venezuela had growth rates of three percent a year or more, placing them among the fastest growing countries in the world. Argentina, Bolivia, Honduras, and Uruguay had the lowest growth rates in the area, under two percent per year" (4). Since the 1950's the proportion of low-income households to total urban populations has risen steadily, so that the vast majority of people are currently unable to afford a permanent home within a conventional market.

"As rural-urban migration gathered momentum and increased the numbers and proportion of the urban low-income groups, pressure on the inner city housing increased dramatically, creating high density, badly serviced areas adjacent to commercial districts and areas of middle and high-income housing. The consequent impact upon environmental quality, pollution levels, and provision of services led, gradually, to the withdrawal of wealthier groups from their previously prestigious locations, towards new suburban locations free from overcrowding and deteriorating living conditions, but still having direct and easy access to the central areas.... Less fortunate groups, however, were forced into living at high densities in the central areas where expansion of business or industry, or even the programmes of road construction, all threatened them with removal. Alternatively, they were offered subsidised housing in the suburbs at rents which, even when subsidies were heavy, generally proved beyond their means. Consequently, those who had sufficient capital, but who were denied access to officially approved housing because of high costs and standards, joined the movement to the suburbs and established large-scale settlements on the periphery of the urban areas on land which was unattractive to the
more affluent. As studies in many parts of South and Central America have shown, the low-income population with stable employment have been able to organize autonomous settlements of almost urban dimensions in their own right on the urban peripheries. Whilst others have moved into housing in the old legally built areas of tenements or compound housing, or squatted in publicly owned pockets of land near the centre. (In some older cities, the impact of the railways effected this transformation at an earlier stage in their growth.)." (5)

B.- The Urban Explosion in Latin America

When rural-urban migration triggered urban growth in Latin America back in the 1950’s the almost generalized approach was to construct public housing subdivisions on peripheral land. While dwellings in these projects conformed to high standards of construction and services provision, they became too expensive for the people intended to house them and required such heavy subsidies that they eventually ended up housing a higher strata than anticipated or intended (6). These projects were usually rooted on western post-war ideas of settlement organization or romantic ideas of a new society; one which was to become totally, unquestionably, and peacefully committed to the process of western civilization. The inevitable evidence of a mismatch was the growth of squatter settlements and the increasing densities within low-income housing areas (7).

The initial attitude or approach towards the squatting phenomenon on the part of the governments was to remove the people from those areas and clear them of this degrading settlement approach. Of course, such areas were growing at a much faster rate than the formally planned parts of the cities which had also failed to provide support for their lowest income groups who were most affected by the rapid process of urbanization. Yet sheer clearance and squatter relocation efforts only wasted resources on
replacing existing dwellings and the poor simply reappeared in other parts of the city. Out of this initial phase, it became very apparent to the governments and agencies concerned, that a reduction of expenditures in housing, both for the users and the governments was necessary. This is how the idea of construction thru self-help, upgrading and site and services, was given considerable attention by governments; ideas that already had advocates (8).

Changes started to occur on the basis of individually tailored programs. The first prototypes regarding site and services were carried out as temporary measures to justify, in most instances, the relocation of squatters from valuable inner-city locations or from physically dangerous locations such as eroded hills, flood zones, or land occupied by power lines.

Slowly administrations started to be convinced, sometimes by evidence of few examples, other times by scholars on the subject, (8) that people were the best judge of what housing they needed and that in most cases they were perfectly capable of housing themselves (2). Then the role of the government shifted towards supporting such initiatives by providing inexpensive land, security of tenure, and basic services; site and services as a viable solution to the exploding problems. This approach was adopted not only from a desire to eradicate the unpleasant inefficient use of land and services, and chaotic physical aspects of squatter areas but also from a desire for a social redistribution of housing resources.

Governments also saw the opportunity once again to control such aspects as location, layout, code, and land uses which they had lost control over to squatting settlements. Simultaneously with the recognition of the need to redistribute housing resources, upgrading the large and increasing
numbers of slum and squatter areas was also recognized. A U.N. Seminar on
the improvement of slums and squatter settlements in Medellin, Colombia
1970; identified the objectives of upgrading settlements as: "...incorporating
the initiative, organizational ability, and capacity for work of the marginal
population in the urban community, and achieving the greatest social
benefits with the limited resources available" (9). Site and services and
settlement upgrading were not only attractive to governments. For
low-income households they often became the only alternative to squatting
or other unconventional forms of development and enabled them to
determine how much they spent on housing, what they spent it on, and when
they spent it. Finally, for scholars, consultants to international lending
institutions and the lending institutions themselves (e.g. The World Bank,
the Interamerican Development Bank, the U.S. Agency for International
Development, .......) the approach provided the only realistic way to equate
limited funds with the extent and nature of housing demand.

1. Population Growth and its impact on Urbanization

Insights, even with the most optimistic of figures, into today's
deficit of low-income housing in Latin America itself, astonish experts and
laymen as well. A review of such figures will provide a sharper focus on the
problem: Estimates indicate that each year more than 8.7 million new
inhabitants are added – through natural residential population increase and
internal migration – to the population of urban centers in Latin America (10).
A large share of this increase is being absorbed by the region's principal
metropolitan areas, most of which are growing at rates of 5-6% or more a
year (11).
2. Urbanization

The determination of the magnitude and number of slums and squatter settlements in Latin America is usually based on guesses instead of detailed counts, mostly due to the rapid changes within the illegal urbanization process. However, some estimates show that at least one-fifth of the population of economically depressed countries, and in some cases possibly more than half of urban dwellers live in the slums, squatter and illegal subdivisions of Latin American cities (12). By the end of the century, when the number of urban dwellers will have tripled, how many will be living in slums, squatter settlements and illegal subdivisions? It is impossible to know, but much will depend on settlement policies formulated and implemented now. To this respect it is relevant to add, that in most Latin American countries today the political stability and institutional continuity is very sensitive to change. Hence, this instability prevents the long range planning necessary today to guarantee the peaceful solution to the problem.

These related issues show the magnitude of the problem as well as the difficult task that confronts any Government in its attempt to tackle the problem. One thing is certain in today’s economic environment. At the rates of economic growth of Latin American countries, coupled with their lack of technology, infrastructure and able manpower, it is impossible for the Governments of these countries to provide the needed urban housing and services given the other constraints on their economies. Even with rapid economic growth it is doubtful the global urban construction needs for Conventional housing could be met, purely because of the dimensions of the problem (13).
The critical issue is centered on the fact that the housing deficit is accelerating, but the resources capable of modifying such trends are declining. Hence, the problems derived from the magnitude of such urban growth and the realization that they cannot be prevented within the present framework of governmental approaches have determined the central concern of this thesis. Here, the central proposition lies within alternative insights into reinterpreting the problem within a constructive framework of public and private sector intervention, striving towards the creation of social and economic integrating instruments that reconcile the conflict between upper income groups and the urban poor, and encourage governments to move towards changes in, attitudes and understanding with respect to human settlement and low-income housing issues. Hence, control over urban development can be achieved and a big step towards alleviating the social and economic pressures presently in place would be taken.
NOTES


(2). It was only in the 1960's that the dimensions of urban growth in developing countries began to be discussed along with the implications of the mushrooming of inadequate shelter settlements for the urban poor. *World Housing Conditions and Estimated Housing Requirements*, U.N., Bureau of social affairs, Copenhagen, 1963, pg.31. Since the 1970's, a number of developing countries have outlined and began to implement settlement policies that deal with slum, squatter and illegal settlements and the enormous demand for low-income urban housing— for example, Abrams (1964); Mangin (1967); Peattie (1968); Turner (1966); Laquian (1971); Clinard (1966), see bibliography.


(6). Ibid.


(13). By conventional housing it is meant, for the purpose of this study, that notion of a completed dwelling unit which incorporates living and/or social spaces, bedrooms and service areas. This concept will be expanded upon in Chapter II; A.
II. CURRENT STRATEGIES AND POLICIES

A.- Formal and Informal Housing Sector

1. Internal and External Requirements for Dwelling

In general terms, a proper dwelling must provide shelter from climatic conditions, privacy and security for dwellers and promote their health and general well-being. All these internal requirements must be provided with materials and technology that will last a reasonable time at a cost accessible to the dweller. There are other requirements that deal with the broader urban environment as well, that are external to the dwelling. The unit must be located in an adequate site (e.g. outside the bounds of flood plains), serviced with infrastructure, and with reasonable connections to other houses, institutions, work places, recreation, and commercial areas. By such standards informal housing sectors such as: squatter settlements, low-income tenements or illegal pirate subdivisions, by no means, would be considered proper housing. With these concepts in mind, a summary of general approaches to the provision of low-income housing in Latin America follows.

It is important to note at the outset of this study that the government sponsored housing rental market has been neglected by most Latin American countries as a viable solution to the deficit problems, due to restraining factors such as: the economic commitments towards repayment compromise on international loans, and high inflation rates coupled with increases in prices for urban land make it economically impossible for governments to commit already scarce funds towards low-income housing subsidies. In short, this alternative has not been an option undertaken by governments whose economic growth has been at the expense of huge national economic
commitments to international lending institutions.

Hence, the demand for this type of shelter is being fulfilled (as will be explicit later in this study) by the appearance of tenements in the old sectors of the city and the supply of shared housing in established low-income conventional and unconventional housing markets in both regulated and unregulated provision sectors. Renters are commonly in this transitional situation prior to becoming first time buyers in either of the markets mentioned above. In general the trend for those with stable incomes is to acquire housing through conventional and regulated sectors, since they can respond to market regulations. Those without steady incomes generally follow opposite trends, since their instability places that predicament.


a. Conventional housing dictated by government agencies
   without community participation:

The initial approach to the provision of low-income housing of most Latin American countries has been, through the creation of a central housing agency to formulate and direct the policies intended to reduce the existing housing deficit. Such policies reflect the ideology of the ruling political parties or military dictatorship (1). The Agency determines procedures, the type of operation or methodology to deal with the problem, distribution of funds, construction standards and cost, financing and subsidies, and the selection and adjudication of the potential dweller(s).

National agencies are usually centralized in the main capital city but maintain regional offices in the capital city of a given state or department. The main office deals with the establishment of the policy matrix, the
pursuit of international funds to support the policies as well as molding the implementation process of the programs to fit both the needs of the demand and the financial restraints the lending institutions formulate. Local branches, carry out the course of the actual policies established by the national branch. These tasks represent: provision of suitable sites, building designs based on a normative framework, organization of the bidding processes, controls over the construction process, and the final adjudication or sale of the new property. Local branches have a direct relationship with the national branch of the agency which in turn has one with the national mortgage bank, the latter being the institution that provides the construction loan allocations to housing construction sectors, as well as, the long term financing to its customers. Since most countries do not have a procedure to capture local funds to be allocated towards housing programs, they rely heavily on international loans for financing low-income housing. Hence, the National Mortgage Bank becomes the guarantor and the institution directly responsible for servicing such loans (2).

Agencies are in charge of administering a number of alternative housing programs. Although different housing programs may be stressed from country to country, the basic tenants are common to all low-income housing proposals.

1). The Agency as the Planning Institution

One approach by government agencies is the planned unit development program. This approach concentrates its efforts on the complete development of a subdivision for the urban poor. Although the planning procedures of a total project may have some variances, a normal procedure is outlined below:
1. Analysis of regional needs and standards. Determination of norms and appropriate housing typologies.

2. Budget sources and distribution modes.

3. Acquisition of land tracts in accordance with regional plans.

4. Design of the urban layout and the appropriate housing typologies.

5. Preparation of the construction documents.

6. Bidding process and selection of the construction company. In some cases the agency might be involved as a general contractor.

7. Control, certification and payment to the construction company.

8. Acceptance and approval of the finished dwelling.

9. Selection of the future dweller

10. If the project is composed of high-rise apartment buildings, an internal managing committee has to be organized.

11. The administration and management of loan payments.

12. Control of the dwelling and its intended uses.

Most low-income housing agencies prefer to work within this approach towards providing for the housing need. They see advantages such as: the quality of the product can be controlled, the economies of scale are an asset at such large volumes of construction, faster construction allows for time reductions which are critical when considering interest payments on international loans, this approach allows for a construction industry to grow and a potentially efficient use of professionals in the construction field and its related crafts. The final product is similar to the dwelling of the Latin American middle-class, therefore, the material differences between the dominant classes and their poorer counterparts tend to be mitigated.
The provision of housing through a conventional sector is so controlled that a normal construction cost is expected to fall, undoubtedly below their private commercial counterpart. But, due to the very limited segment of the National budget allocated to housing the number of units built, compared to the demand for these, will be much too small. In some cases, the cost of these units might be upset by the rise in prices of materials and workmanship, therefore affecting the service to the initial target groups and finally ending up as housing for the middle-class instead of for the urban poor. An immediate solution to this quantitative problem within this social spectrum would be to promote a housing subsidy. The drawback to such a proposal is that since most housing is financed by obtaining international loans, such a policy would increase an already imbalanced foreign debt in which most Latin American countries find themselves. The risk is such that the International Monetary Fund has placed severe restrictions on countries wishing to refinance their outstanding debt.

2). The Agency as the Planning and Building Institution

The government agency serving as general contractor in the execution of the project. This constitutes a variation to the conventional method of providing housing by the state. In this case the agency acts as both the administrator and as the builder in the construction of the units. Such a government entity becomes the general contractor replacing the construction company. The local municipal government, subcontracts all those jobs that their own public work crews cannot perform. The savings for the agency are derived from eliminating profit margins that otherwise go to the general contractor, and maximizing the work of administrative, technical and trade personnel. This type of approach has drawn attacks from
private construction companies that see their realm of action reduced. Although this argument has some truth, such measures are taken to reduce local social and political pressure, not as a desire to undermine or limit free enterprise.

Although there has been criticism, questioning the cultural, social, and technical adequacy of housing designed and built by the official agencies (3), the main problem with the conventional approach is its failure to decrease and much less eradicate the housing deficit. Undoubtedly, designs and technological applications can be improved, none the less, the basic problem of lack of economic resources cannot be readily solved. The vast majorities will continue to be confronted with the need for a basic shelter for their survival (4).

b. Unconventional unregulated housing by the informal housing sector

The popular approach: The majority of the dwellings in Latin America are built with little financial, or technical help from outside the family nucleus. The units are built incrementally, usually in periods of time averaging 10 to 15 years (5). During that time most of the meager savings are channeled towards the erection of the dwelling. No professional or building contractor will be involved in design, construction or quality control (6). Such a dwelling might be built upon: an illegal market lot belonging to the user; a temporary house is normally placed in the back yard of a family lot until they can progressively improve these conditions by building a more sturdy permanent dwelling, or as is most frequent nowadays, in squatter settlements or shantytowns.

Although, the first and second alternatives might be partially illegal, since local requirements and procedures have not been followed, the
building stands upon a plot of land belonging to his family in the first case and to the government or an unknown institution in the latter case. The latter alternative is the most precarious since no legal rights assist the squatter. The trespasser is affected by the political whims of the authorities. The security of the investment made on the lot is dependent upon the changes of governmental policies (7). The vulnerability increases as the land acquires speculative value. As services and infrastructure are provided in the surrounding areas, eviction is most likely to take place. The physical appearance of the dwelling reflects the high degree of uncertainty. The building materials are precarious, usually discarded objects transformed into new uses, or natural readily available elements like mud, straw, rocks, etc. Although the houses are built of improvised materials, nevertheless, most of them must be purchased. The placement of such squatter settlements almost always coincides with a topographical or man-made barrier which makes the site difficult to transform into a viable marketable property. The sides of a steep hill subjected to erosion, land slides and flash floods, geological faults, coastal land below flood plain, land adjacent to sources of pollution such as factories and garbage dumps, interstitial land between railroad tracks, are the places invariably occupied by squatter settlements and/or shantytowns -see chapter V- (8).

c. Government responses to the informal sector

1). Settlement upgrading

If the conventional government housing projects cannot cope with the scale of the housing deficit, can a shift toward the improvement or upgrading of the environment of the squatter settlement or shantytown dwellers provide a viable alternative? If the energy and initiative of the
people can be harnessed by providing security of their own plot, limited
technical assistance and direct modest financial aid; can the problem be
soothed to obtain larger gains in the battle against substandard low-income
housing?

The advantage of such an approach over institutional self-help
resides in that the participants do not start from scratch, but continue to
add and upgrade their own existing dwelling. This would also mean that the
neighborhoods' social relationships can continue, since families would not
be relocated to new suitable sites. One drawback of such an approach is the
cost involved in upgrading unsuitable sites due to topographical or
ecological circumstances. Such an experience, by a government institution
is documented in Chapter V; case-study "Las Colinas" (8).

2). Insights into Site and Services alternatives

2a. Site Development with limited Services

The recipient obtains an individual lot within a subdivision tract in
which the site will be provided within a street layout -almost always
unpaved-, open ditch surface drainage, and aerial electrical service. The site
might be provided with communal water wells or each individual lot might
be supplied with one. Sewage lines are usually not provided, although the
alternate of a septic tank would be.

The value of such a plan resides in the potential it recognizes for
supplying a minimal serviced lot to the lowest income brackets of the
population. An adequate site, with a clear title of ownership for a low
monthly payment, provides a solid beginning. From there on, the land owner
will have to build a home within his limited economic possibilities.
This alternative has been commonly used in developing illegal subdivisions (e.g. Colombia) with relatively great success in meeting the economic needs of the most disadvantaged urban poor. If a solution with social benefits of this sort would be matched by Governments, (as is demonstrated by the uncommon case-study "La Manuelita" Chapter V.), the urban structure and the growth within the urbanization process would be more predictable, allowing for a planned process to become feasible.

2b. Site Development and Services

Land tenure has become an important issue in the consideration of the low-income housing provision in Latin America (9). Along with the provision of an adequate site comes also the guarantee of a healthy environment in which to live in. Hence the importance of the provision of safe sanitary conditions or facilities. The construction of a bathroom, kitchen and laundry facilities are the most complex technological elements in the construction of a house. The generalized assumption in this regard has been, that if those services are built in each unit, efficient designs, planning and repetitive construction, can trade-off large savings. And, a guarantee to the adequate performance of the service infrastructure. The incorporation of the sanitary nucleus is seen as a positive factor in the introduction of positive socially accepted health habits and standards. The rest of the housing unit can be built by the user progressively -see chapter V for examples- (10). Although the provision of part of the dwelling might seem foreign to the development standards in the developed world today, progressive development building is the most common practice in Latin America.
3. Development Alternatives within the Formal Housing Sector

a. Mutual-Help Development

This procedure provides for the construction of a complete dwelling on a developed site. The difference with the conventional construction procedure is that the potential dweller will become a part of a group effort in the construction of the development.

Normally, the promoting agency supplies an elaborated design of the development and the dwellings, the support of a technical team to supervise and organize the construction process, these being a professional in the construction field and one or several social workers depending on the size of the project and/or groups. The promoting institution may or may not involve the families in the planning and design stages of the project. The alternative decision lies mainly in the promoting institution; sometimes being criticized for inadequately evaluating the needs of the user group. Since the promoting institution is supplying the materials, and the future dwellers the labour, the participation of the social worker(s) is crucial as liaison of the social group. Also, an initial selective process is necessary to determine the attitudes and aptitudes of the participants, so important for the successful completion of the project.

The name, mutual help, implies, the building strategy employed in the process of low-income housing provision. Hence, all families will work on all dwelling units not knowing which house will be theirs. One of the advantages to such a method is that, people with specific knowledge of construction technics will intervene in all houses. Since no one knows which house will be theirs an even effort is applied to the entire project. Family groups or members will develop specific skills and will share their
knowledge with others. The final product will be technically better than those projects built entirely by unskilled labour, such as the case might be if a single family with little or no knowledge undertakes the construction task on their own. The project developed in this manner will tangentially generate a strong sense of community that some experts view as essential to the success of such projects. This is especially true in the process of upgrading the settlement in terms of community services that are most commonly non-existent in these developments at the outset of the projects.

1). Critique

Peter Ward in "Self-help housing, a critique", is fast to recognize the disadvantages of the use of one basic design unit to develop the entire project as is most commonly done. This position is of relevant importance because most low-income families will have a diversity of rural and/or cultural backgrounds, molding the needs of their family's size, social-cultural and decorative habits; hence, the importance of incremental growth within the physical design of the dwellings for the low-income community. He also states that the method extends the exploitation that takes place in the workplace by undervaluing the workers labour contribution. If in order to acquire a minimal dwelling, an individual has to work many additional hours beyond his regular occupation, such a system is abusive; "...self-help allows labour to be exploited twice over; first at work, second in the construction of the home"(11). Payne also argues that, the system proposed is inhuman since it requires heavy physical work during several years.

On the other hand, if one considers the increased administrative work generated by the program, the low-densities most commonly achieved, the higher site expenditures and the inefficient use of materials and manpower,
the relative savings of labour cost is indeed a small economic benefit. Coupled with the fact that in Latin America, labour cost is a rather small percentage of the total building cost, it might sound almost inexplicable that such an approach might be a feasible solution. But, in the light of the users economic capabilities its a very convenient option when a family does not dispose of any economic resources (savings) rather it disposes of the human resources to fill in that economic gap. Furthermore, despite the ethical and technical problems, the programs have worked in small communities, where the distances to the site are small, eliminating excessive waste of travel time and additional transportation cost.

b. Self-Help Development

This procedure has some similarities with Mutual Help. The fundamental difference is that each family provides the labour for their own home, instead of participating in a group effort. The potential homeowner acquires an individual plot of land to build his own home. This plot might have a full range of services or a limited amount of them. In most cases though, except for access and electricity, the services are self contained within the plot. This method requires the future homeowner to select a house plan from a series of alternative designs provided by the local housing agency. The limited variety has the advantage of providing field tested designs and cost estimates. This prevents any future surprises as a consequence of an unproven design that requires greater expenditure than originally planned. The participants must build the best way they can, with the technical assistance of an agency employee. The same professional controls the expenditures allocated by the agency to the homeowners, and sees to it that they are properly invested.
1. Critique

Geoffrey K. Payne in “Urban Housing in the Third World” argues that excessive institutional control over what residents do with their own plot can restrain the potential for providing needed shops or additional rental accommodations, hence expanding the possibilities of a mismatch in meeting user needs by deploying excessive power on the part of the institutions which tend to use self-help logos as a shield to meet other requirements.

“Standardization and administrative inflexibility have also limited the contribution of site and services and settlement upgrading...... The very mention of site and services and settlement upgrading implies an active role for the residents concerned and most programs contain explicit references to its importance. The views of Households are sought through social surveys and public meetings, or they are encouraged to contribute their labor in digging trenches or building houses, but active participation rarely extends to the composition or distribution of project components.” (12).

“...... In developing the idea of individual and group independence from institutional control at all levels, there is a great danger of enabling those who are advantageously placed to exploit new opportunities, to do so at the expense of those who are less fortunate. This, as Wilsher and Righter have noted (2.88) is tantamount to a return to laissez faire, in which ‘the doctrine of self-help is deeply attractive. It appeals to everyone’s belief in human ability, neighborliness, ambition and good sense, as solvents for the most intractable difficulties (yet), it also, less nobly encourages people to believe that there is nothing much to worry about, that the less interference there is with natural forces the better, and that everything will sort itself out in the long run’ (2.89)” (13).

An appropriate point to mention is the fact that a project that has been carried out independently of any communal effort does not draw the same social benefits promoted by mutual help where social cooperation creates a communal atmosphere among the new residents of a subdivision.
B. Theorists; On how to confront the problem

John Turner in "Freedom to build" argues that, official plans should be redirected, eliminating the central bureaucracy and technocracy, "closed systems", creating instead local community networks of self-support, "open systems" controlled by the dwellers; concept known as advocacy planning. In such a manner, the people would determine their own designs, materials, technology as well as realistic scale of investment. The shelter would reflect their physical, social, cultural, and economic needs. Such strategy establishes the control of the community over their own environment. Since their interventions would be within the means and time alloted by the participants, they would not become prisoners of an ill-suited dwelling. A common occurrence, when using official plans is that, the monthly payments of the house are so great, to the extent where everything else becomes subordinate. This prevents the dwellers from making small investments in education, job training, health care and more elementary human needs, such as nutrition. The financial allocations needed by each participant would be relatively small compared to the standard official housing programs. Therefore, a greater percentage of the population could be reached. Turner viewed his proposal as revolutionary because it would give the power of decision to the neediest;

"if housing is treated as a verbal activity, as a means to human ends, as an activity rather than a manufactured and packaged product; decision-making power must of necessity, remain in the hands of the users themselves. I will go beyond that to suggest that the ideal we should strive for is a model in which the users, as a matter of economic, social and psychological common sense -are the principal actors" (14).
Paradoxically, most governments have adopted Turners' concepts with little change in implementation, as integral parts of their programs. Currently, his most staunch supporters are the Latin American governments and their bureaucrats; the forces that Turner wanted to eradicate. The main promotion and financial backing for such programs have been provided by the World Bank, an institution known for its conservative attitudes and pragmatic solutions.

Such apparent contradictory attitudes become understandable if the events of the last ten years are analyzed. The alarming foreign debt has prevented new experimental projects, and therefore Turner's settlement upgrading became a stopgap measure to decrease social pressures by reaching a relatively large number of participants with limited resources and results. The social consciousness of the settlement dwellers was not modified as predicted by the proponents. Research has shown that the network organizations developed during the construction phase, soon disappeared when the buildings were finished (15). People returned to the original individualistic attitudes physically encouraged by the single dwelling. The community organization or network, capable of exerting pressure against the dominant system, was not a lasting by product of the procurement of the dwelling.

Turner, Flitchel, and Grenell (16), the main proponents of settlement upgrading by self-help methods, have detractors from vast sectors of the academic community (P. Ward, H. Harms, R. Burgess, among others). Their criticism addresses a variety of topics that range from the individual urban results obtained, to the quality of the dwelling itself:

- The occupation of sites on the urban periphery is a strong negative factor
considering that this accounts for the increase in unplanned urban growth.
- The isolation of these projects rigidizes an organization of land which lacks minimal conditions for adequate service connections.
- The unorganized physical occupation of the land makes it almost impossible to retrofit water, sewage, and drainage lines; at best it all becomes an expensive undertaking.
- The spontaneity of the development usually means that no places have been provided for institutional and recreational spaces such as plazas, playgrounds, day-care centers, schools, or civic buildings. To provide those services adequately, certain portions of the shantytown are displaced, disrupting the community. Although, such developments might be deficiently organized, such disruptions have high social and political costs (17).
- The squatter sites are usually impossible to defend from the topographical, climatological and ecological phenomena.
- Floods are a usual and recurring problem in many shantytown. In most cases an adequate defense might be more costly than a new site. Hillsides, a typical squatters appropriation, besides the necessary protection against landslides, will require extremely costly land movement to place roads and service lines.
- The geographic nature of the sites prevent the social integration of the social classes, isolating the shantytown and increasing the duality between the city of the elite and the town of the disposessed.
- Little of the advantages of the urban culture are assimilated; a rural worker remains foreign to the urban setting and it may be concluded that the principle of communal integration and collective decision making that
Turner defends might only be applied at the initial elementary level of a simple construction using primitive techniques and crafts. There is no meaningful choice outside "the elementary form of the unit whose poverty of means, precariousness, and lack of typological and formal experience generates an environment of small cultural and human values" (18).

The types themselves, built by the shantytown dwellers, have a rural basis for a cultural model but have no urban antecedents because the dwellers are rural people displaced to an urban setting. Therefore, the forms that have been culturally evolved for their rural home are not appropriate in a much denser conglomerate. An analysis of the units will render as a result a house composed of many rooms without proper light or ventilation, no logical internal organization and with sanitary facilities inappropriate to the requirements of an urban dwelling (19). The replication of the rural vernacular, in terms of form and materials, is impossible in the new context. The inadequate response has been a contribution to the deterioration of the environment.

The romantic, picturesque notion of the vernacular home developed by its own inhabitants, seem to be more of an idealized morphological idea, rather than a thorough investigation of the real conditions. It may unwillingly be an academic rationalization to a "token response". An analysis of the social conditions predominant in shantytowns is rather frightening. The subculture that has to develop is immersed in misery, isolation, and alienation, therefore living marginally with the rest of society.
"They live in a parallel city, with their own social codes, and their own laws. The tangible evidence of their marginality is the high crime rate and the related cases of criminal history; the irregular work; illegal documentation; personal disadjustments such as alcoholism, drugs, promiscuity and physical abuses; the human exploitation such as prostitution; and an extremely high percentage of illiteracy." (20).

It is obvious that a change of housing by itself would not modify the social anomalies. But, it is rather clear that the environment does not contain the necessary spatial, physical and institutional elements to modify the negative behavior. Settlement Upgrading is not a positive long term solution considering the total development of a city, its surroundings, and its inhabitants. At the present time, most housing experts have concluded that such strategy "provided too little, too late, at too high a cost" (21).
NOTES

(1). A Prime Example of this Situation can be examined in Robert North Merrill's Toward a Structural Housing Policy: An Analysis of Chile's Low-Income Housing Program PH. D. Dissertation Cornell University 1971. Alan Gilbert and Peter Ward offer an examination of the role of the state in relationship to the issue of low-income housing provision within the urban context in: Housing, The State and the Poor, Cambridge University Press 1985. pg.61.

(2). It is important to note at this point that some governments have adopted procedures, such as in the case of Colombia where a system of savings by constant value unit is promoted to capture local funds which are then filtered back to the public and private developers. This same system of constant value units was implemented in Brazil with little success, which indicates the vulnerability of the system.


(6). Ibid.

(7). Ibid.

(8). Ibid.

(9). Alan Gilbert and Peter Ward. Housing, The State and the Poor; Cambridge, Cambridge University Press 1985. pg.61
(10). In Colombia these developments are known as "desarrollos por normas
minimas" e.g. Guacamayas, and are usually carried out by private
developers."Normas Minimas de Urbanizacion Bogota" Escala*65 year9
Anibal Lopez Trujillo, German Samper Gnecco, Jorge Forero Velez,
Alfonso Galvis Gaitan, Guillermo Chary Lara.


(13). Geoffrey K. Payne. *Urban Housing in the Third World*, Leonard Hill and
Routledge and Kegan Paul; London, 1977. pg.78

(14). John Turner, Robert Fichter and Peter Grenell. "Increasing Autonomy in
Housing: A Review and Conclusions". *Freedom to Build* Macmillan Co. N.Y.
1972.

(15). Inter-American Forum on Housing and the City, Tulane: New Orleans.
"Workhop-Alternative Approaches to Housing in Latin America" 1986.

(16). John Turner, Robert Fichter and Peter Grenell. "Increasing Autonomy in
Housing: A Review and Conclusions". *Freedom to Build* Macmillan Co. N.Y.
1972.

(17). Lisa Peattie."Settlement Upgrading: Planning and Squatter


(19). Ibid.

(20). Ibid. &"Housing priorities, settlement patterns, and urban development
in modernizing countries." *Journal of the American Institute of

(21). Nabeel Hamdi. "Low-income housing changing approaches"
CASE-STUDY: - ANALYSIS OF LOW-INCOME HOUSING SECTORS IN BOGOTA', COLOMBIA

III. A DESCRIPTIVE OVERVIEW OF BOGOTA'S URBAN CONTEXT AND ITS URBANIZATION PROBLEMS RELATED TO LOW-INCOME HOUSING DEMANDS

A. The Process of Urbanization and the Residential Environment of the Urban Poor in Bogota'

The growth process in the urban core of Bogota' has been caused mainly by two factors. The growth of the resident population and the migration of people from rural areas to the city. These factors have influenced accelerated growth since the mid-19th century, when Colombia opened to international markets and began an industrial and commercial revolution on a scale never before realized (1). Although it was not until the mid-1930's, when the urban population of Bogota' reached approximately 300,000 inhabitants, that the acceleration has seriously had an impact of the magnitude we read of today (2 & fig. 1,2). A 6.7% annual growth rate for the city of Bogota' was registered in 1981 (3 & fig. 3); 2.9% of which corresponds to the growth of the resident population and the rest to rural peasant migration (4).

As staggering as the size of the city, which reached in 1985 a total population of just over 5 million within an area of 210 square kilometers (5), is the evident poverty of much of the urban population. Contrasts between wealth and poverty, between 'modernity' and 'traditionalism' are sharp. Modern skyscrapers, sumptuous shopping, office and banking facilities coexist with squatter settlements, illegal subdivisions and
Figure 1

The Development of the City; 1539, 1791, 1885
Figure 2

The Development of the City; 1932, 1960, 1980
unsanitary living environments; e.g. open sewers (6).

Internal migrations (7) to a city, unprepared to feed, shelter, and care for the resourceless rural peasant, have affected the urban core in various ways. It generates blight areas within the city limits mainly as residential environments for those who find it most difficult to adapt to new socio-economic demands, and it generates proliferation of illegal low income subdivisions beyond the city limits; to name a few factors of concern to this study. These pressures demand large quantities of land for shelter and generate not only socio-economic but political pressures within the urban environment.

Some of the explanations for the peasant migrations can be viewed as patterns in which motivation is provided by a combination of 'push and pull' elements. Limited employment opportunities and other push factors away from the original place of residence, work, with the real or expected job opportunities and other factors at the intended destination. In Colombia the rapid population growth, the large number of sub-marginal farm plots, and the extreme shortage of social infrastructure services (e.g. schooling and medical care) are of primary significance as push factors. Family ties and friendship rank high in importance among the pull factors.

Other general facts, of concern to this study, focus on the urban environment in terms of spatial structure, social distribution, the character of the city, population, and the distribution of urban space.
1.- The city of Bogota'

a. Location & Background

Bogota' lies on a plateau 2600 meters (7800 feet) above sea level with steep mountains all around which have defined the character of the city from the beginning. The location in Santa Fe' de Bogota' of the main government that would control one of the largest territories in the colonial domains of Spain in America, is hardly easy to understand. The isolation of the place, the incredible difficulties in transportation both for human beings and for cattle, goods and products, the distance from the seas and the main rivers, as well as other factors, seem to be enough as to make the place inadequate for a capital city (fig. 4, 5).

Bogota' did not develop as other main cities in Latin America did. Isolation and scarce resources for building and public works from the very beginning defined a sense of smallness and of austerity. No large palaces or churches were built. No trade markets and trade places were present in the life of the city. Instead, a very vigorous and strong agricultural base was developed in the magnificent lands of the plateau and in the neighboring highlands. This eastern regional culture was, from the beginning, different from the Colombian western culture of gold mining and plantations and from the northern development of the Caribbean coast with its strong commerce and amphibious culture. The southern part of the territory was influenced by Inca traditions, with its cultural center in Quito. These four domains have been the basic cultural areas in the country and their identity is still alive and characteristic (see fig. 5).
Relieve de Colombia

Cortes del relieve
Cortes longitudinales del relieve de Colombia a la altura indicada por las líneas horizontales.

Colombia: Its Plan, Section and Surrounding Countries
b. History of its urban structure

The city was founded in 1539 (8) and had the appearance of being only a temporary settlement (fig. 1). Physical growth of the city was not noticeable during the first two centuries of Spanish Colonial regime. During the 18th. century, the city grew considerably more than in the two preceding centuries. The growth took place around the original core, in almost all directions. The grid was expanded and when crossing natural barriers as creeks, slopes, etc., it was simply adjusted and continued. The maps of the city show a very small increase in size between 1791 and 1885 (fig. 1). In the same period the population grew from 18,000 to 78,000 inhabitants (8). The difference between the two phenomena is due to the fact that the older city was able to accommodate most of the new population. Large houses and parcels of urban land were divided in two or three parts; new structures were built in the open space of gardens and orchards. Urban density increased noticeably through this method of urban re-development, the public space was tightly defined by continuous buildings two or three stories high.

The plan of the city by 1900 shows an extension due to the new railroad lines and a light rail line linking the village of Chapinero to the central nucleus (fig. 2). This small village was first a stop in the main route that ran north towards Venezuela (fig. 5). Later it became a summer resort for wealthy families, because of the qualities of the landscape and climate. Finally it was developed as a permanent residential area, with the character of a second city. The empty land between the old city and the new development was gradually filled with residential areas for the middle and upper classes.
Growth in the southern part of the city took on another character. Popular quarters of diverse activities and incomes arose in the peripheral areas, also following the direction of roads and rail lines. The location of some industries in that area contributed to this definition. To live in the north was a proof of social standing and a symbol of wealth. To live in the south was a symbol of humble blood, manual work, poor income and vulgarity.

The isolation of the city gradually changed and ended with air navigation during the early 1930's. This phenomenon is very particular in Colombia and specially influenced the city of Bogota. Airplanes changed the pattern of spatial relationships that, so far, had been strongly led by geographical obstacles. The primitive, confined character of the city of Bogota opened to a national and international flow of business, culture, politics and other influential aspects of 20th century life. Changes were not remarkable compared to other cities of Latin America, but in terms of its own history, Bogota was transformed considerably. By 1938 Bogota reached a peak of 300,000 inhabitants (9) and had a system of streets, quarters and open areas almost adequate to its scale (fig. 2).

In the last fifty years Bogota has gone through a real mutation process. The city has changed from a small scale spatial structure with strong traditional components and a simple social structure, to a large metropolitan scale, with a complex social stratification and no defined spatial structure. The city in 1938 had a center clearly defined, and a secondary center in the north equally clear in location and performance. In 1986 the city has no center or, rather, it has a large center that changes its social character according to the spatial location of activities. The city can
be understood as a continuous urban tissue, with shading degrees of density and a large patch of commercial activities with shades of intensity and social segregation. The limits of the urban tissue are expanding, invading agricultural lands and changing the landscape.

c. Social Structure

The social distribution of urban space in 1934 was relatively clear, since social classes were defined easily. Upper classes settled in the northern section of the city, and lower classes settled in the south. Middle class surrounded the central core and spread both north and south. The central core was the urban articulator. The secondary centre of Chapinero structured a secondary city, linked with the main one through the light rail lines and two linear streets. The segregation of activities was confined mainly to the residential areas. The old center was still the dominating point.

Spatial distribution of the social strata did not change noticeably during the 19th century. At the beginning of the 20th century however, the migration of the upper classes from the old city started a new distribution pattern, also related to the presence of new activities such as industry, and of a new strata such as urban industrial workers. Migration of the wealthy became a symbol of status and a statement of social identity. New quarters were built exclusively for the upper classes and, paradoxically, for the workers. Planning and design were born to fulfill these two social contradictory tasks (10).

Social stratification now is not clearly defined. Wealth is not the exclusive property of the aristocracy; many sources of income both legal and illegal, have created different groups of higher income. The same is true
for the low income population, that includes industrial workers, and other legal and illegal activities. The middle class is also divided in sections, but its trend is more homogeneous according to the character of urban mass ruled by media. Spatial distribution of this wide range of strata is also complex and subtle. The trends to north and south are not valued in the same way. In the northern areas there are large sections of low income group settlements; southern areas mix middle and low income groups. The poverty has expanded its range and housing has become a very expensive item, not easily acquired. The city can thus be seen as a continuous surface of inner cities whose boundaries are blurred. The city as a whole is internally segregated but there are some places that allow mixed urban participation.

Social distribution of the population within the urban space could be described in terms of four economic classes - upper, middle, lower and masses (fig. 6) - or in terms of elite, urban mass and marginal groups, or again in terms of established and transitional population according to the degree of involvement in the formal activities of society.

The city must be seen as a field of competition between the different cultures that inhabit its space. The idea of a homogeneous urban culture in Bogota', is not an accurate one. There are many urban cultures, according to the different economic and cultural features of the population. Hence, the planning and control of urban development in the city should be an integrating instrument that mediates in the conflict between the cultural segments of the population. Instead reality indicates that planning and control of urban space is just an instrument to support political and economic interests associated with the power system. This is true in any given political system, but it is particularly dangerous in this case due to
the presence of socio-economically marginal groups in the city (10).

Bogota' has a social and spatial structure different from European and American cities, and even from other cities in the third world. The events in its history and the constitution of its cultural strata do not form a sequence in a continuous process but a chain of changes with different degrees of violence. The model of a capitalistic city is not adequate to establish similarities with cities in the United States or Europe. For example, cities in the United States, do not have socio-economically marginal groups as such, there are segregated minorities secluded in ghettos. In some European cities these minorities are small while in others there are groups similar to the marginal sections of Latin American cities, but they have a cultural background that belongs to the local or regional tradition developed through the centuries without a sudden presence of foreign conquerors.

The total population in Bogota', reaches today just over 5 million inhabitants. More than 80% of the people are in the lower income strata and about 8% in the higher income stratum (fig. 6). This distribution is projected in urban space in many ways. Upper classes take much more space than the lower income population. According to this pattern, urban space is distributed in a very particular way: there are zones of very low density, with less than 20% of the population and more than 40% of the urban surface, and areas of very high density with 80% of the population and less than 50% of the surface (11 &fig. 7, 7a).

The mutation process of the city of Bogota' that has taken place between 1934 and 1986 can be divided analytically in three main phases. The first one spans from 1934 to 1948 and is the birth of the modern city.
Figure 6

Colombia, Social Class Structure; in percent of total Population

Upper Class 5%
Middle Class 15%
Upper Lower Class 15%
Lower Class 50%
Masses 30%

(Schematic)

Transitional groups
This birth represents the change of the existing urban structure through planning and architectural design, under the scope of modern ideas about urban life. The conflict that was not perceived in this period was that the structure of the society was far from being modern, that the conditions of the country were rooted in the past and that changes should be more profound than the physical surface of buildings. The second phase started in 1948, after political riots that followed the death of Jorge Eliecer Gaitan (a popular leader). Rural violence in the country had been happening before this event, but increased after 1948. Migration from rural to urban areas was one of its consequences and Bogota received a large amount of this migrant population. The third phase of this process started around 1965, after the great migratory process had settled. National economic policies increased the importance of the building industry as a source of urban employment and of capital investment. Housing became the field of large profits and urban development took a principal place in the order of economic preferences. After 1970 this system became a monopolistic structure, ruled by corporations and directed exclusively to profit-making. This system changed completely the direction of the urban development from land costs to housing distribution.

d. The Housing Market

The housing market in Bogota is now divided in four different groups: 1- exclusive, catering to the elite, 2- commercial private development, catering to the middle class, 3- Government sponsored public housing, catering mainly to the middle and low-income sector, and finally 4- spontaneous unregulated housing development, catering to the urban masses in the form of 'Barrios de Invasion' (Invasion settlements) and
"Barrios Piratas" (Pirate subdivision settlements). This thesis will place emphasis on the latter since invasions in Bogota' are uncommon. Planning and design operate mainly in the first three groups; planning for the fourth which is the income group of main concern in this thesis, will be the subject of our attention within the spatial and socio-economic context of Bogota'.

e. The Renters and Sharers Market

Before undertaking an overview of the low-income housing market, it is important to note some general characteristics of the renters and sharers market in Bogota'. Renters and sharers tend to be among the poorer and more disadvantaged members of the urban community. The illegal and mostly the illegal housing market in Bogota' extends its provision to the better-off low income people, hence those who form the lowest income bracket and are unable to participate in self-help construction become part of the renters/sharers market. On the other hand families may effectively choose to rent or share. They may choose these options based on grounds of preference, their lack of responsibilities, a wish to live in areas where ownership is difficult, the need to invest savings in a business, desire to spend money on goods rather than housing, because of family characteristics and so on. Hamer states it very clearly by saying:

"Shared housing plays an important role in cities such as Bogota', insofar as it gives access to housing for families whose age, income, size and degree of residential mobility suggest that, on average, they are in an early stage of their housing cycle, when flexibility counts most. This is due to a combination of undefined preferences with respect to future employment and residential location, of relative inexperience of the functioning of urban markets, and of limited resources that make it very difficult to acquire assets... As the guest family units get older, accumulate savings and increase in size, the attractions of acquiring a home increase and they tend to become owners." (12)
B. Government Regulated Subdivisions "Minimum Standards"

Minimum Standard Subdivisions "Normas Minimas" are essentially planned and approved *sites and services* projects. Special District Acuerdo 20 of 1972 (13) permitted not only the lowering of minimum design standards for residential developments but also the participation of the private sector. The example of pirate subdividers undoubtedly influenced the drafting of Acuerdo 20, which makes it possible for lots to be sold as soon as infrastructure plans are approved, thereby allowing subdividers to realize immediate returns on investment. Acuerdo 20 was followed in 1973 by Decretos 1259 and 1260, which set out detailed design and engineering specifications for vehicular and pedestrian access, lot sizes, open and communal areas, and public services.

In practice the chief problems with minimum standard subdivisions have been:

1. **Restrictions on Minimum Standard Subdivision development**

   Between 1973 and 1977 the District Planning Department (DAPD) granted final permits (resoluciones) to 28 minimum standard subdivisions averaging 10 hectares in gross area each.

   The approval process consists of two stages, a preliminary review (consulta previa) which results in either rejection or clearance to begin drafting formal plans, and a final design (proyecto general) which results in either final approval (resolucion) or denial of the proposal. Preliminary and final approval are awarded by the Public Services Committee (Comite de Servicios Publicos), a group composed of representatives from DAPD and the public utility companies plus members of the City Council. If a resolution is granted, the minimum standard subdivider must still obtain permission from
the Housing Division of the Superintendencia Bancaria (permiso de venta) before he can begin to sell lots.

DAPD records show that, of a total of 253 minimum standard applications received over the 1973-77 period, 28 were given resolutions (11 %), 97 were rejected (38 %), and 128 were given preliminary clearance only (51 %). The three major reasons for rejection related to location: 1) the tract was outside the urban perimeter; 2) the tract was in a restricted development zone (e.g. a flood area); and 3) the tract was in an area zoned for industrial use. It is not clear, though, why 128 proposals, about half, received only preliminary approval. It is very probable that some of these subdivisions -no one knows how many- have gone on the market illegally.

2. Lack of Land

According to the regulations, Minimum Standard subdivisions may be built only on land with the proper residential zoning classification ("high density"). DAPD reports that the supply of this type of land has practically dried up in Bogota. Although the city's Planning Board (Junta de Planeacion) may rezone land, so far it has not increased the supply of high density areas. Apparently a significant number of minimum standard proposals have been submitted for tracts on residential land having the wrong zoning class; these have tended not to be rejected outright, but to remain in limbo.

3. Delay in official approval

The minimum standard approval process takes at least one year and often two, which is viewed as excessive by most developers, especially when coupled with the uncertainty over whether a "resolucion" will be granted. This gives the minimum standard system the character of a lottery; subdividers lucky enough to win approval are rewarded with permission to
earn high profits. The odds of winning, are low, however, and it appears that other types of investments, mostly speculative but including the pirate subdivision business, currently provide the opportunity for faster turnover of funds by investors.

Technical and financial objections have been raised against the minimum standard concept itself. The Bogota’ Water and Sewerage Company (EAAB), for example, reportedly has not been comfortable with the lower-than-standard engineering specifications for water supply and drainage under the minimum standard regulations. The company feared that the infrastructure would be of inferior quality and create excessive maintenance expenditures in the future. Under current practice, water company clients pay installation and connection fees, but all subsequent maintenance costs are borne by EAAB.

4. Social opposition

Some argue that the minimum standard concept implies giving official approval to substandard development (“legitimizing slums”), thus undermining the normal subdivision and building codes. It has been difficult to promote the idea that lowering standards through minimum standard produces significant benefits, namely lower unit costs and hence wider affordability for lower-income families, in addition to more efficient use of land and public resources as a result of planned development. The minimum standard label has not eliminated the fears that tend to segregate income groups in Bogota’. Opposition from neighboring land owners and residents may have defeated several minimum standard subdivision proposals, based on the belief that their presence would lower property values and reduce neighborhood quality.
C. The Unregulated Housing Market

1. The Unauthorized "Invasion Settlement"

Unlike many of the large and mushrooming urban centers of Latin America, Bogota has not experienced a large number of invasion or squatter settlements. While the officially recognized number of 7 such settlements may be too low, there is no question that the phenomenon is relatively rare in Bogota. A study published by the I.C.T. -Instituto de Credito Territorial- (National Housing Institute) suggests that less than 1% of the housing stock of the city is composed of invasion settlements (15).

Two factors explain in part why invasion settlements have failed to develop in Bogota, where migration rates and income levels are comparable to such invasion-plagued cities as Lima, Mexico City and the Colombian city of Cartagena. The first of these factors is the physical environment of the city. Surrounded on one side by highly valued land and on the other by steep, eroding mountains squatter settlements have had very little room to develop. In fact, those that have developed usually rise at the base of the mountains (Juan XXIII and El Consuelo), in the industrial zone on the western fringe of the city (Nuevo Chile), or on long unused public land (Policarpa Salavarrieta). A second factor which has no doubt served to limit the number of invasion settlements in Bogota is the "safety valve" effect of the pirate subdivision settlements. While the price of land in such settlements is often quite high (especially in terms relative to income) and the interest rates of the extra-legal financial system are usually usurious, the increase in security of tenancy, the lower risk by avoiding open defiance of the authorities and the prospect of eventual legalization offered by these settlements probably have channeled away many potential invaders.
2. The Unauthorized Subdivision "Pirate Subdivision Development"

The "pirate subdivisions" of Bogota', differ from invasion or squatter settlements in that land changes hands through purchase. Modest income families buy small lots from entrepreneurs who acquire tracts of land and subdivide them without conforming to zoning laws, subdivision regulations, or service provision standards -- hence the term "pirate"(16). The subdivisions spring up where land is inexpensive, generally on the periphery of the city. The lots usually provide only a bare minimum of services, often nothing more than some bulldozed streets and a few water standpipes. Buyers typically make down payments of between a quarter and a third of the lot value and pay monthly installments over one to four years (17). Families build their houses, often incrementally, according to their capacity to pay. For years the city government has been granting legal status to well-established pirate subdivisions, thus allowing residents to obtain better public services and clear tenure.

The extent of the pirate land business in Bogota' reflects a high demand for inexpensive residential land and the lack of alternatives available to lower-income people. Commercial and government low-income housing in the city is generally occupied by families with incomes at least twice those of pirate subdivision dwellers.(Lopez and Jimenez; Bender 1975). Two basic conditions have allowed pirate subdivisions to flourish in Bogota': the existence of a large supply of inexpensive, privately-owned land close to the city and a history of lax enforcement of land use and subdivision regulations. While the authorities have traditionally used strong measures to suppress land invasions, they have exerted little effective control over land sales between private individuals; officials in Bogota' tend
to feel that a crackdown on the large pirate subdivision business would invite more land invasions, a prospect far worse than pirate development.

Several reasons may motivate a land owner to sell to a pirate subdivider:

1.- A pirate may simply offer the highest price. Land in certain parts of the city may be unattractive to legitimate developers for the middle-class market because the neighborhood is undesirable, the parcel is too small, drainage is bad, or the land cannot be serviced properly.

2.- Pirate subdividers are often willing to buy land whose development value is otherwise restricted by zoning laws. As a result pirate subdivisions have sprung up in areas of the city where there should be no development, such as flood zones and steep slopes.

3.- A problem that encourages illegal land subdivision is the long delay, often one or two years, posed by the legal development approval process. Pirate subdividers are known for the speed with which they transact business, and a parcel on the margin - one that could be developed legally or illegally - may be tipped in the latter direction if the owner is in a hurry to liquidate his property.

4.- A factor is that not all tracts of land become pirate subdivisions in arm's length transactions. Pirate subdividers have sometimes coerced land owners to sell by hiring squatters or making physical threats.

While the purchase of the original tract is usually a legal transaction, the sale of lots is always illegal. Because pirate subdividers ignore zoning laws as well as minimum lot size and servicing standards, the ownership documents (escrituras) given to lot buyers are invalid and cannot be legalized until the District government "regularizes" the subdivision. This
may take many years. It is not clear, however, how much of a burden illegal tenure imposes on lot buyers. There is evidence, for example, that it does not prevent pirates lots, with or without houses, from being resold.

Public officials and the press often portray pirate subdividers as exploiters and criminals. They are blamed for cheating the poor and creating slums. The findings of some studies (18) suggest that, whatever their motives, pirate subdividers fulfill a useful function by providing tens of thousands of families with plots of land that they could not otherwise obtain without resorting to invasion. Buyers rarely lose their lots, despite their illegal tenure. Families build homes on the lots, often upgrading them substantially over the years. Missing services gradually arrive, and over time some "barrios" begin to take on a middle-class appearance (19). On the other hand, it is not uncommon for lot buyers to be left without promised services, for services to fail due to faulty construction, or for lots to become uninhabitable because of poor drainage. Indeed, the social costs of uncontrolled development, by pirate subdividers, are probably large. These include installing services in unsuitable places such as steep slopes or flood zones; building service networks for inefficient lot layouts; providing transportation services to inaccessible areas; revising street and utility construction programs to take account of unauthorized development; and coping with erosion, pollution, and destruction of natural amenities as a result of development in ecologically sensitive areas.
D. Pirate vs. Minimum Standard Subdivisions: A comparative view

Because all minimum standard, subdivisions are by law hence, by definition inside the urban perimeter, it is more accurate to compare them only with pirate subdivisions located inside.

Pirate subdivisions outside the perimeter are much larger and cost less, as might be expected, than those inside the perimeter. In general, land development outside the perimeter are subject to different regulations and institutional forces.

Minimum standard developers pay an average of about 28% more per square meter initially for their tracts of land than pirate subdividers (20). This reflects the fact that the minimum standard subdivisions are better located, on flat land in the near western zone of the city. It is also due to the legal requirement that these be built on land zoned for residential use and accessible to public utility connections. Minimum standard developers spend a greater proportion of their total costs on infrastructure than do pirates. They also spend almost twice as much on infrastructure per lot in absolute terms, and their subdivisions are better-serviced (table 1). Thus, the average minimum standard buyer pays about one-third more than he would in the pirate market for a lot that is about 25% smaller; he receives however, more services, a better-than-average location, more open space, and a greater probability of acquiring legal tenure.

For the most part the pirate market successfully and competitively supplies a relatively low-quality good for which there is a high demand at a modest price and for which there is no satisfactory alternative.
E. General Characteristics of Regulated and Unregulated Subdivisions

1. Basic Features

Size and Density: The subdivisions range widely in area; The average gross subdivisions size overall is 49,475 m², about 5 hectares or 12.2 acres.

On the average, pirate subdivisions outside the urban perimeter have the same number of lots as those inside, but their average lot size is about 2.5 times larger (125m² vs. 315m²). The average lot size of 125 m² in pirate subdivisions inside the urban perimeter implies a density of about 56 lots per hectare, taking into account average street and open space area. Minimum standard density works out to an average of about 62 lots per hectare. Assuming six persons per lot, gross residential densities are in the range of 300 to 600 persons per hectare. (table 1 & fig. 8)

2. Location

As Figure 9 shows, pirate subdivisions cluster in the far southern and western areas of Bogotá, with a significant but much smaller number located in the north-northwestern zone. Subdivisions outside the urban perimeter are substantially larger overall.

There is no evidence on why minimum standard subdividers create much larger subdivisions than pirates. One possible explanation is that minimum standard subdividers are likely to have better access to financing, enabling them to obtain more capital and to invest in larger tracts of land.

3. Distribution of Land Uses

Across all subdivisions an average of 70% of the area is devoted to saleable lots, 11% to communal area and green zones, and 19% to streets. (21, acuerdo 1260 Distrito Especial). Because of the legal standards they must meet, minimum standard subdivisions provide about twice as high a
Table 1

(all prices in 1976 Col $)

<table>
<thead>
<tr>
<th>Average:</th>
<th>Pirate Inside Urban Perimeter</th>
<th>Normas Minimas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tract size (m²)</td>
<td>50</td>
<td>64</td>
</tr>
<tr>
<td>Number of lots</td>
<td>156</td>
<td>585</td>
</tr>
<tr>
<td>Lot size</td>
<td>125</td>
<td>92</td>
</tr>
<tr>
<td>Lot price per m²</td>
<td>253</td>
<td>456</td>
</tr>
<tr>
<td>Total lot price¹/²</td>
<td>31,625</td>
<td>41,952</td>
</tr>
<tr>
<td>Subdivider expenditure on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>infrastructure per m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>salable (usable) area</td>
<td>22</td>
<td>64</td>
</tr>
<tr>
<td>Subdivider expenditure on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>infrastructure per lot</td>
<td>3,256</td>
<td>5,955</td>
</tr>
<tr>
<td>Percent subdivision in open space</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Open space per lot (m²)</td>
<td>26</td>
<td>39</td>
</tr>
<tr>
<td>Total number of subdivisions</td>
<td>109</td>
<td>14</td>
</tr>
<tr>
<td>Total number of lots subdivided</td>
<td>16,994</td>
<td>8,191</td>
</tr>
<tr>
<td>Total number of lots with sale data</td>
<td>11,540</td>
<td>5,916</td>
</tr>
</tbody>
</table>

1/ All *normas minimas* subdivisions are inside the urban perimeter.

2/ The term "tract" refers to the whole parcel of land that is purchased for subdivision.

3/ Total lot price here is the sum of undiscounted installments plus the down payment, as per standard practice in the pirate subdivision business.
Figure 8

Average lot size across rings and sectors of Bogota'
proportion of communal and green space, at the expense of about 20% less saleable area, than pirate subdivisions. The proportion of usable area in most of the minimum standard developments is between 50% and 60%. Among pirate subdivisions, however, the proportion varies from over 80% to 100% of the tract surface. Regarding the amount of land devoted to streets, the average is 19% in pirate subdivisions and 22% in minimum standard. Minimum standard subdividers offer greater amounts of open and communal area. The somewhat higher average street area per lot in minimum standard subdivisions reflects their smaller average lot size (22, &table 1)

4. Purchase of Tracts

Most pirate subdividers behave like businessmen with discount rates - they want to obtain returns as soon as possible - a substantial number seem to be either inexperienced or in no hurry to develop their parcels of land. Figure 10 presents average prices of subdivisions tracts in Bogota for the northwest, west and south.

Within the urban perimeter the average per square meter of tracts is consistently highest in the north, Bogota’s higher income area. Land prices are about twice as high in the west as in the south. In all sectors lands prices decline with distance from the center of the city, although in the southern zone the gradient is small (23).

5. Infrastructure and Development Costs

While in the minimum standard subdivisions all the infrastructure was paid for by the subdividers, in the pirate subdivisions some infrastructure was financed by other sources. Infrastructure investments usually occur well after acquisition of the tract and initiation of the subdivision. The lag in infrastructure provision suggests that: 1) subdividers
Figure 10

Average lot Prices per M2 across rings and sectors of Bogota'
generally cannot afford to make infrastructure expenditures "up front"; hence they wait until after returns from lot sales come in; 2) some subdividers are unwilling to install infrastructure at all and do so only after lot buyers and/or the municipal authorities force them to at a later time; 3) Lot buyers who are unable to convince or coerce the subdivider into installing infrascture at his own expense often choose to compromise by sharing costs with him, paying for the services themselves, or obtaining services financed directly by the public sector. Pirate subdividers most frequently finance sewer, standpipes, electric lines, streets, and curbs. Lot buyers pay more often than pirate subdividers for telephone lines and sidewalks, although they seldom pay for sewer and electric lines. The public sector pays a minor role and does not seem to finance certain infrastructure types more often than others. On the average one would expect minimum standard subdividers to pay higher prices, assuming that they supply higher quality infrastructure. At the same time, pirate subdividers may pay higher prices for some types of infrastructure because they purchase inefficiently.

6. Sale of Lots

According to the data (24), it takes an average of 47 months to sell 90% of the lots in a pirate subdivision. For Minimum standard the period is 17 months. This large difference may reflect excess demand for Minimum standard lots. It also may suggest that minimum standard subdividers are more efficient salesman or that they are catering to an income level which can afford the luxury of constant income without fluctuations.

It is widely believed that buyers of pirate lots are unreliable in their payments. This is offered as one reason why "legitimate" developers are reluctant to go into the lower-income housing market. An average pirate
subdivider working within the urban perimeter can expect about 30% of his lots buyers to fall behind in their payments. Of those, more than half will eventually lag six months or more. A minimum standard subdivider can, on the average, expect a slightly lower rate of late payments as well as a somewhat larger proportion of serious delays.

Clearly the problem of lateness in payments and long-term default is significant in the lower-income lot business. On the one hand, these results do seem to reflect the riskiness of the business from the subdivider's point of view.

The prices of both pirate and minimum standard lots have been rising faster than consumer prices overall in Bogota. At the same time, the average size of pirate lots has gradually been decreasing. From 1972 to 1977 the average pirate lot had diminished in size from an average of about 180 m² to about 105 m². This reflects increasing costs of land development, as well as continuing high demand for pirate lots (24).

Having discussed related physical issues affecting the urban development process, the need to a complete framework for understanding the forces of development of the present state of affairs leads this discussion towards issues of public policy.
NOTES

(1). This was the result of the appearance of 'Coffee', which did not disappear over time but rather increased in importance and production over the years up until today. See also, Luis E. Nieto, "El Cafe' en la Sociedad Colombiana". El Ancora Editores, Bogota' 1981.


(3). The third largest city in the world behind New York City and Tokyo is Mexico City, which grew by ......a remarkable 8.6% compounded annual growth rate. see RICE CENTER, Research Profile 1, May 1984, U.S. GROWTH CITIES.

(4). see Nueva concepcion de una politica urbana, Departamento Administrativo de Planeacion Distrital, Bogota' 1981.


(6). The urban poor are defined, for the purpose of this study, as those who fall on the bottom 30% of household income per capita. see fig. 3 Edwin G. Corr "The political process in Colombia", Denver ,1972. Cited in Colombia, a country study; Foreign Area Studies- The American University, Coauthors Howard I. Blutstein, J. David Edwards, Kathryn Therese Johnston, David S. McMorris, James D. Rudolph 1983 Pg. 109.

(7). Ibid Pg. 11
The flow of immigrants into the country has been scanty since the end of world war II, and it is estimated that only .4% of the population is an alien resident.


(11). "According to available sources, it appears that the area of Bogota city has been successfully redefined along with its growth, with the surprising result that overall density has remained roughly constant at 100 to 110 persons per Hectare.... In comparison, the central cities of New York (covering the boroughs of Manhattan, Bronx, Brooklyn, and Queens) and Tokyo (each about 8 million to 9 million people) have densities of about 110 and 150 persons per Hectare (Mills and Ohta 1976, p. 685);... Bogota is more densely populated than comparable Latin American cities if similar definitions are used but less so in the central area. It is of interest that its density is not very different from New York City (including Staten Island)". Rakesh Mohan and Rodrigo Villamizar, "The Evolution of Land Values in the Context of Rapid Urban Growth- A Case Study of Bogota and Cali, Colombia". World Bank reprint Washington 1980.


NOTE: Minimum Standard “Normas Minimas” refers to a legally-set package of minimum standards for services such as water, electricity and streets (as well as for lot and dwelling size) which developers of low-income subdivisions must meet. The Minimum Standard law, first passed in 1972 (Acuerdo 20 of the Bogota Special District), was designed to lower the cost of required infrastructure and thus encourage the creation of legal subdivisions for the lower-income market.
(14). "Normas Minimas de Urbanizacion y de Desarrollo: Consideraciones a su aplicacion", op. cit. P. Paredes "Colombia's Urban Legal Framework" draft report, city study project, April 1980. Most of the material for this section was drawn from the above.


(17). Ibid.

(18). Ibid.

(19). see the case of Policarpa Salavarrieta in "Settlement Upgrading: Planning and Squatter Settlements in Bogota, Colombia"; Unpublished M.I.T. Lisa Peattie


IV. PUBLIC POLICY APPROACHES TO LOW-INCOME HOUSING IN BOGOTA

A. The Effect of Public Policy on the Problem of Increasing Demand for Low-Income Housing

A set of factors to be considered here comes from the realm of public policy in the form of a mixture of "by law" political decisions and "by right" non-decisions that have influenced the development of the city over the years. These policy outputs are so diverse in terms of origin and impact as to defy categorization so we will examine only some of the most important of them to have come from the political system at the national and local levels in recent years.

1. Public Policy at the National Level

One important influence on low-income housing in Bogota' has been the National Plan of Development. Two of the strategies of the Plan call for policies to stimulate personal savings and investment in construction, especially in urban areas. (1) To implement these policies the government has created a system of constant value (i.e. the return on investment is adjusted for the rate of inflation) savings and loans, which has sought through a number of means to channel the savings stimulated by this system into investment in urban construction, primarily in the area of commercial buildings and upper-income housing. In terms of low-income housing in Bogota', these policies have had two important results (at least in the short run). First, by encouraging construction and employment in the urban areas and to a large degree discouraging them in the rural areas (2), the policies being implemented in the name of the Plan have served to stimulate
migration of low-income groups to the cities, thereby increasing the demand for low-income housing. Secondly, while the system of constant value savings and loans has served as a stimulus to personal savings, it has also resulted to a large degree in the exclusion of low-income groups from the home-loan market. While the Plan may have served to stimulate construction, in general, in cities like Bogota', its positive impact on low-income housing has been negligible and from some points of view its impact has been negative.

A correlative influence on the rate of migration (and thus indirectly on the demand for low-income housing) in the realm of national governmental policy has been the rapid and marked decline in recent years in efforts by the national government to implement agrarian reform. While attempts at agrarian reform were much lauded in the early years of INCORA, (the Colombian National Institute for Agrarian Reform) efforts at redistributing agricultural land have been drastically reduced in recent years. There is little doubt that the failure of the agrarian reform program in Colombia has stimulated migration to cities like Bogota'.

One final influence of note from the national level has come in the form of a series of "non-decisions" in the area of urban reform. Since 1960 no less than eleven pieces of major legislation dealing with urban reform have been introduced in the Colombian National Legislature. (3) These bills have dealt with a wide variety of issues directly related to problems of low-income housing, including such matters as rent controls, expropriation of urban land to be used for the purpose of housing construction, provisions for transforming tenants into property owners, value limits on future housing construction (to reduce the low-income housing deficit), taxes on
unimproved land, the nationalization of savings and loan associations, and many more (4). Despite support from a number of governmental and non-governmental groups including planners, legislators and pressure groups, and despite the need for some such legislation to help resolve some of the problem that rapid urbanization has brought, not one of these attempts at urban reform has passed the legislature (5). Thus, the inability of the National Legislature to act has had an important influence on low-income housing.

2. Public policy at the local level

Public policy at the local level has had an impact on low-income housing as well. Areas related to this study where this impact has been the greatest are:

Zoning.-

Over the past thirty years zoning laws have served to reinforce the environmental features already mentioned to severely limit the supply of land available for low-income housing in Bogota'. The development of zoning regulations in the city corresponds to a large degree to the increase in the city's population and the housing problems it has created.

According to Peter Amato:

Prior to 1944, Bogota did not have any official zoning regulations. New urbanizations were springing up all about the city, particularly during the period after 1938. The elites became alarmed that their new residential areas might be undermined by the encroachment of undesirable use. They were particularly concerned that the mushrooming 'obrero barrios' (worker subdivisions) should be confined to specified areas within the city. The elites found support for their position in German Zea, the Mayor of Bogota' for 1936-41. Zea called for regulations which would divide the city into sectors which would be zoned according to the class of inhabitants living in various areas or according to its activities.(3)
From the first zoning ordinance of 1944 to the Plano Oficial de Zonificacion General de la Ciudad of 1968, which has been revised several times to date, zoning ordinances in Bogota' have effectively served to segregate and limit the land available for low-class housing.

As a result of the Ordinance of 1944 the elite residential areas to the north of the city were fixed as zones which were to be strictly for residential use. These areas were zoned for large lots and virtually excluded workers, housing and industry. On the other hand, the obrero areas south of the city were zoned for the lower income groups. The early zoning of the city permanently fixed the spatial distribution of socio-economic groups and bears testimony of the desire and their own interests.

**Standards**

For the purposes of this study it is sufficient to note that statutory housing standards, "norms", have had an important impact on housing in Bogota'. The laws of the city stipulate two types of requirements for new "urbanizaciones" (subdivisions).

First, that developers provide streets, parks, water, sewers, electricity and other services before their land can be used for the purpose of housing. A second and related requirement is that before registered legal title can be awarded to those building homes in new subdivisions they must meet these minimum standards.

To this respect key policy issues addressed how to encourage the private sector to increase the supply of adequately serviced lots for the lower and moderate income market. The Bogota' District has pursued this goal in two ways: 1.- bringing sanctions against the most exploitative pirate subdividers to force him to provide services and 2.- making it possible for the private sector to enter the legal lots-with-services
business by way of the minimum standards.

The first approach has involved freezing the assets of pirate subdividers, a procedure known as "intervention"; Law 66 of 1968 (Article 12). To implement the intervention, a lien is normally placed on the land and on the subdivider's bank accounts. The goal is to hold the property until the subdivider upgrades services to a satisfactory level, or if this fails, to arrange for upgrading by the public sector.

The problem with this approach is that violations are too widespread. In effect, any illegal subdivision is eligible to be seized under Law 66. The practical result is that intervention is used only in extreme cases, normally situations where the subdivider and buyers are deadlocked over the continuation of lot payments versus the installation of services. In addition, the ICT has reportedly done little to upgrade the pirate subdivisions it has taken over under Law 66. The agency is said to lack the administrative capacity to absorb this responsibility. By 1978 the ICT has seized 100 subdivisions under this law and 85 of them were in Bogota' (8).

The second approach, encouraging the private sector to supply higher-quality lots through minimum standards, has produced mixed results. Private entrepreneurs demonstrated their interest in minimum standard development investment by submitting 253 minimum standard subdivision proposals to the District Planning Department between 1973 and 1977. At the same time, the District government has strongly restricted the supply of minimum standard lots by granting few final permits. This restriction probably accounts for the very high minimum standard profit rates---on average two to three times higher than for pirate subdivisions in real terms. (9)
The impact of these statutes on low-income housing in Bogota has been monumental. First of all, given the structure of the lending institutions within the financial market, new legal low-income housing is simply out of reach for almost all the neediest low-income families. Without some form of subsidy these families cannot qualify for a loan to pay for fully developed land and dwelling. Secondly, the requirement that minimum standard be met before title is awarded has seriously affected mobility and transferability in the low-income housing market. As is noted before, the response to these statutory requirements has been the development of illegal settlements in Bogota. While these illegal settlements often become legalized over time, homeowners in these settlements not only face many years of precarious tenancy but also a long period of time when their home is excluded from the home loan and mortgage market. This essential credit market is closed to these individuals not only because of the structural problems in the financial system but also because, lacking registered title to their land they are legally proscribed from participating in it. These "legal bottlenecks" then, not only limit the amount of new construction that takes place in the low-income housing market, but also affect the process of "filtration" whereby the existing housing stock is made available to new groups of consumers.

3. From Comprehensive Policies to the Development of Illegal Housing

The subject of statutory housing has another important aspect. That is, that while statutory minimum standards exist in Bogota, and indeed produce the effects discussed above, they are rarely implemented rigorously or, more accurately, they are selectively implemented. This has given rise
to the famous illegal settlements of Bogota', pirate settlements whose impact on the low-income housing market and the problems connected with it cannot be overemphasized. Because of the immense and ever increasing demand for low-income housing in the city and the prohibitive effects of the statutory housing standards, a majority of the low-income families of Bogota' live in this type of illegal housing.

According to the Departamento Administrativo de Planeacion Distrital, (10) in 1972 an estimated 59% of the population of Bogota' resided in these illegal settlements which accounted for 38.45% of the total area of the city developed for housing.

4. Public policy and the phenomenon of pirate settlements

Public policy in this respect has had an important impact on the low-income housing market in Bogota'. First, their shear numbers (11) and the number of people involved indicate that these settlements have the "by right" approval, or at least consent, of local public policy makers. Thus, Bogota' is faced with the unusual situation of a public policy which according to law has established a fairly rigorous set of housing standards (unattainable for the majority of low-income individuals) and which sanctions a low-income housing market that is essentially harmless and is characterized by a brutally usurious financial system and all of the shortcomings in the way of public services, construction standards, etc., noted here earlier.

Another important feature of this "by right" system of illegal housing is that a large number of these pirate settlements that develop illegally eventually become "regularized". This term means that through
"spontaneous" incremental development (12) these settlements eventually come to meet the statutory standard, thereby enabling residents to acquire registered title to their homes (13).

The three factors just discussed; statutory standards, "by right" standard-ness, and the gradual regularization of illegal settlements, have combined to produce a developmental dynamics whose impact on the character of the low-income housing market has been very significant. As it has been discussed at length, it can be noted here that for several years these factors have served as a "safety valve" function in a city which has felt the pressures of a high and increasing demand for low-income housing combined with a very limited supply of such housing. The dynamics of the process involved and a revealing view of the degree to which it is officially recognized by policy-makers in Colombia, are seen in the following statement from a document published by the National Planning Department:

"A simple, largely unplanned solution of providing a site (or consent in the illegal acquisition of a site unlicensed for building) and permitting the owner to build as, how and when he could, and providing services later in one way or another. In the course of time many such neighborhoods which started out as ramshackle and unsanitary slums became acceptable settlements and the original occupants built up a patrimony, and an additional income by renting rooms or setting up small shops. A sense of neighborhood was preserved and services gradually improved..... Most such building has occurred in pirate subdivisions. The original land owners of, say, a hill unlicensed for building, are enabled to secure high prices for tiny lots. The self-builders have, in time, gained from valorization and services (usually supplied below cost) but their gains have often in turn been at the expense of later families who have rented a room or purchased a still smaller space to put up a shack" (14).
5. Public Policy and Invasion settlements

Almost all land invasions in Bogota\' have met with firm police action. Of those that have succeeded, several attempts at invasion were usually needed before the settlement was established. (15) Finally, it should be noted that of the seven invasion settlements officially identified, only one has been regularized. This is a far poorer average than that attained by the much more favored pirate settlements. Because of the combination of these public policy responses to invasion settlements in Bogota\', pirate settlements have clearly become the illegal housing solution of choice in the city.

6. Urban Renewal

Finally, the impact of urban renewal of low-income housing should be mentioned. Two such projects are worthy of note here. The first renewal project took place in the 1960\'s and resulted in the eradication of many of the shared and rented low-income housing tenement units "inquilinatos" that were located in the central commercial section of the city. The second major urban renewal is the current "Plan de Desarrollo Integrado de la Zona Oriental para el Distrito Especial de Bogota" which includes, among other things, the much discussed "Avenida de los Cerros", a major expressway which is to carry traffic from the upper-income settlements in the north of the city through already-settled low-income neighborhood to the central business district of the city. This plan also calls for the eradication of housing units in some of Bogotas\' poorer settlements. While both of these projects have had or will have other impacts on the city (new multi-story commercial buildings, modern highways, schools and health facilities, etc.),
in both cases they have also served to remove urban land from the low-income housing market; thus, decreasing its already limited supply.

B. Supply and Demand and the Characteristics of Low-Income Housing in Bogota

Having discussed a number of factors related to the development of low-income housing in Bogota, it is important to turn to the related questions of: 1) how these factors have influenced this housing market and 2) the nature of their influence.

The supply for low-income housing is low and fixed, at least under present circumstances. As was noted earlier, because of certain environmental characteristics and public policy responses, the amount of land available for low-income housing is relatively fixed at a low level. When combined with the increased demand for such land this fixed level of supply is manifested at least in part by the housing deficit noted earlier.

Understanding these basic aspects of the supply and demand for low-income housing in Bogota, we may now examine their impact on the low-income housing market of the city. The following are some of the more important characteristics of the low-income housing market.

Cost,

As is noted by the National Planning Department of Colombia "the rise in land values is a reflection of a rise in demand and of ability to pay a higher price." (17) Thus, with the increase in demand for low-income housing brought on by the growth in the number of low-income families in the city and the fixed supply of land available, low-income housing is relatively expensive in Bogota. Because of a lack of accurate data, just how
expensive housing is relative to family income is difficult to calculate. In "Mercado de Tierras en Barrios Clandestinos de Bogota", the District Planning Office cites four somewhat representative surveys of low-income settlements that report the cost of housing for families both renting and buying (18). The amount of family income spent on housing reported in these studies varies from 17% to 25%. These figures do not include initial down payments or monthly expenditures for services. Considering that low income families must spend upwards of 50% of their income on food and, therefore, may spend one half or more of what remains on housing, the relatively high cost of housing for low-income families is seen.

According to the data, the average pirate lot buyer makes a down-payment of about 30% of the lot price and then pays 36 monthly installments. The average down-payment for a pirate lot is about Col $9500 and the average monthly installment is Col $615 (1976 prices $65 to the U.S. 1.00). An average minimum standard lot buyer faces a down-payment of about 35% and a term of 39 months. The minimum standard down-payment averages Col $14,700 and the installment Col $700.

Affordability of Lots – According to the 1977 Bogota’ Household Survey (DANE EHL5), median monthly household income in that year was slightly less than Col$5000, and 26% of households had monthly incomes under Col$2,500 (1977) prices. This means that for a family at the median income level, the down-payment for an average lot would cost between two and three monthly incomes. For a family at the first quartile, earning around Col$2,500 per month, the down-payment would equal four to six months’ income.
The affordability of shelter based on a pirate or minimum standard lot also depends on the cost of building a structure. Since not even the highest-quality lots come with core dwelling units, lot buyers must spend substantial additional sums to provide themselves with minimal shelter.

Becoming a homeowner in this market thus means having access to a large lump sum, which suggests that families without savings may be largely excluded. In general, home ownership through purchase of a pirate or minimum standard lot seems accessible to families around the median level of income, but not to those in the lowest 1/3 of the income distribution (19).

Density.

The density of housing may be discussed in terms of the concentration of either families or individuals in housing units. The previous study indicates, the high cost of housing has resulted in high density in the low-income housing market of Bogota'.

While low-income families spend a relatively large amount for housing, they consume a relatively small amount of housing in terms of space and services. Thus, we note the prevalence of shared housing in tenement units or "inquilinos" in Bogota'. According to the 1977 Bogota' Household Survey (DANE EHL5), 35.7% of the families of Bogota' live in "rooms" (20). In the usual case this means a room (of these families 65% live in only one room) or rooms in a larger housing unit where such services as water, sanitary services and cooking facilities are either shared or non-existent.

Services.

If housing is relatively expensive for low-income families and if the demand for non-essential housing (21) is elastic, we should expect to find
low-income families consuming relatively little in the way of non-essential goods and services, preferring instead to spend what remains of their income on goods and services such as food and clothing.

The figures cited show that in fact large numbers of families in Bogota' are foregoing a number of housing-related services that in other contexts are considered "basic" or "essential". The following figures aggregated at the settlement level, of 202 clandestine settlements, and collected by the Instituto de Credito Teritorial, the Departamento Administrativo de Planeacion Distrital and the Departamento Administrativo de Planeacion Nacional further serve to illustrate the dimensions of the problem of services in the low income housing market in Bogota' (21):

74 barrios with water from shared community fountains only
40 barrios with no water service
139 barrios with no sewage
38 barrios without electricity
63 barrios without telephones
69 barrios without trash collection
200 barrios without paved access roads

Legality -

"Legality" may be considered as one of the housing-related services for which there is a relatively elastic demand within the low-income housing market in Bogota'. Legality as a service provides not only security of tenure but also mobility by facilitating the sale and transfer of title and the acquisition of mortgage loans. Large numbers of families in Bogota' are willing to invest in "essential housing" while foregoing this service in favor
of other necessities. Although housing acquisition becomes a long term investment process, many families living in illegal settlements eventually acquire the service of legality.

**Self-Help "Auto-Construction"**

A matter related to both services and legality is the prevalence of the phenomenon of "auto-construction" self-help in the low-income housing market in Bogota. Because low-income housing is relatively costly, to the point of prohibiting the own-account construction of both essential and non-essential housing in the majority of cases, and because the demand for non-essential housing and related services is relatively elastic, we find that much of the construction of low-income housing in Bogota is "spontaneous" and "progressive".

**C. Public Policy and the Urban Poor**

Those government policies that probaly have had the greatest impact on housing have been designed for purposes other than solving housing related problems. For example, the decision to de-emphasize the agrarian reform program in Colombia (which has resulted in increased migration to Bogota) was most certainly made to develop large scale agriculture, encourage urbanization for economic reasons and to placate influential landowning groups. The National Plan of Development which encourages urbanization (and thus migration), construction (but not for popular housing) and seeks to alleviate urban unemployment was likewise designed with little or no consideration made for the major problems in the area of low-income urban housing.
Nor have public policies on the local level been directed towards a frontal attack on the housing problems of the city. Neither the zoning regulations of the city nor the regulations dealing with construction and other standards were designed to solve the housing problems enumerated here earlier. But as we have seen, all of these government policies have had a dramatic impact - a negative impact in each instance - on the low-income housing market of the city which seems to still supply housing in its ignored condition of *benign neglect*.
NOTES


(2). Mainly due to lack of definite efforts in implementing the Agrarian Reform Program. Hence, minifundium rapidly turned into latifundium.


(4). These issues have never been of primary concern among politicians in charge of legislature in Colombia despite of political pressures from local interest groups.

(5). In fact only one of these bills has even cleared committee. In effect Law 66 of 1968 empowers the housing Division of the Superintendencia Bancaria to seize (though not confiscate) the assets of illegal subdividers and to turn over the administration of their subdivisions to the Instituto de Credito Territorial (ICT), Colombia’s public housing agency.


(9). "Normas Minimas de Urbanization y de Desarrollo: Consideraciones a su aplicacion", op. cit. R. Paredes Colombia's Urban Legal Framework draft report, City study project, April 1980. Most of the material for this section was drawn from the above.


(11). Quantitative studies of low-income housing deficit vary depending on the sources used and the parameters of each study nevertheless an analysis of their numbers, of pirate settlements and the people affected can be found in "Desarrollos Clandestinos: Consideraciones a su legalizacion", Informe, Comision de Mejoramiento Urbano, Unidad de Mejoramiento y Coordinacion de Barrios, Division de Coordinacion y Programacion, Departamento Administrativo de Planeacion Distrital, October 1980.

(12). e.g. the gradual improvement of individual dwellings, often by the process of auto-construction and the eventual acquisition of public services.

(13). Alan Gilbert and Peter Ward, Housing, the State and the Poor Cambridge: Cambridge University Press, 1985 pg.46 offers an extensive analysis of this process.

(14). La Actividad Constructora Popular: Analysis General y Elementos para una Politica de Apoyo Bogota' Departamento Nacional de Planeacion 1972


"Approximately half of the families in Bogota' rent homes in public housing (these being mainly housing for government employees; 11%), commercial(43%), and irregular housing areas (46%)...The high incidence of renting tends to increase occupancy levels and overcrowding..." Alan Gilbert and Peter Ward, Housing, the State and the Poor Cambridge: Cambridge University Press, 1985, pg. 81.

(18). Ibid.

(19). This conclusion is supported by a 1978 survey of 212 households in illegal settlements on the periphery of Bogota', which found that the median income of homeowning families matched the median income for the city as a whole. Andrew M. Hamer, Bogota's Unregulated Subdivisions (Washington: The international Bank for Reconstruction and Development/The World Bank, 1985), n.p.

(20). D.A.N.E.; Colombia, 1977:52 cited in Alan Gilbert and Peter Ward, Housing, the State and the Poor Cambridge: Cambridge University Press, 1985 pg. 121

V. THE PROVISION OF LOW-INCOME HOUSING IN BOGOTA:

THE REGULATED AND UNREGULATED SECTORS

In the following chapter this study will focus on an analysis of two government sponsored regulated settlements; each settlement under scrutiny will offer a different approach towards the implementation of government policies discussed earlier in this paper. Secondly, a review into the recent history of two different instances in the process of development which illegal/unregulated settlements face in their attempts towards providing low income housing. And finally, a review of the process of upgrading an invasion settlement by a government institution.

A. The Regulated Housing Market Provision in Bogota:

1. The Subdivision “Barrio Garces Navas” by the Instituto de Credito Territorial, I.C.T.

The subdivision is located along side the Freeway towards Medellin with 105 Avenue in a plot with an approximate area of 35 Hectares. It was built between the years 1971 and 1974 in two stages, with an approximate total of 3300 dwellings. The first stage consisted of 2400 dwelling units and the second 900 dwelling units. An execution plan by self-help construction and indirect labour was adopted; a concept of collaboration between qualified labour and homeowners (Fig. 11).

a. Institutional Policy Approach Governing the Development

The subdivision “Garces Navas” was developed during a period in which the I.C.T. operated under the slogan of “the social front”. It aimed at providing solutions to the problem of housing the least favored social sectors of the stratification pyramid.
Figure 11

Location of the Subdivision "Barrio Garces Navas"
One of those proposed solutions was to use the system of self-help "auto-construction". Yet another proposal was to follow the suggestions of a study on "Minimum standard for subdivisions and public and community services" edited by the institution. In addition to the above, the programs through self-help were involved in a national project called Colombia 216, ICT-PMA. This program encouraged the direct participation of the community in the solution of their own housing problem through their participation in the construction process in exchange for food compensations (1).

b. The project

The proposal consisted in the construction of complete, conventional dwelling units as far as space for shelter, services and urban infrastructure was concerned.

1). Urban Proposal

A basic nuclei of lineally grouped dwellings serves as a generating element for larger groupings. These are characterized by a common park area and vehicular road which provides a perimeter limit between each other, totally or partially (Fig. 12). The parks were planned for recreational use or varied services. The vehicular roads are developed from a main central axis with several stems branching out to cover the entire neighborhood and in some cases, creating loops within it (Fig. 13). All pedestrian routes stem from the vehicular roads leading towards the dwellings and the park at the core of the grouping module (Fig. 14).

2). Architectural Proposal

The I.C.T. produced initially various types of housing solutions which included one-story houses (Fig. 15), two-story houses with the possibility of an addition on first level or second level. For the second level addition
the design incorporated a structurally bearing roof which would facilitate
the process. The organizational scheme was as follows: access into living
area, adjacent service areas (stairway), and bedrooms (Fig.16, 16a, 16b).

3). **Project Construction Management**

For the construction of the urban development phases such as
connection of service tubes to the dwellings and in general those items
regarding the entire urbanization plan, a process of bids was undertaken.
The project was handled entirely by the I.C.T., that is, from the programmatic
stages to the construction management phases. In some cases the I.C.T. also
provided the homeowners with materials for self-help construction to be
carried out. Security for materials was a problem even though the
homeowners themselves were to carry out the watchdog tasks.

c. **The Homeowners**

The I.C.T. ruled resolution # 398 in 1971 which was the subject of
requisites for the concession of credit lines to possible homeowners within
their housing programs. It is of particular interest to this study to note that
the desired minimum monthly income level required was $1200 pesos/month
as family income; at a time when the U.S.$ 1 was at an exchange rate of $35
pesos. With those parameters in gear and the high expectations of the
institution in favor of a great number of housing solutions, the institution
proceeded to publish their application formats in all the newspapers
circulating in Bogota'. Using this strategy, the number of applications
exceeded by a great margin the housing supply.
General Layout of the Subdivision
Figure 13

Vehicular Structure of the Subdivision
A "Barrio Garces Navas" Main Vehicular Entry
Figure 15

Initial Housing Type C. Solution by the I.C.T.
Alternate Solution Schemes
Alternate Solution Schemes
Figure 16b

Alternate Solution Schemes
d. Project Evaluation

1) Urban Aspects.

The location of the Barrio Garces Navas, within the city of Bogota' (see Fig 0, page X) is on the west urban perimeter of the officially approved city limits plan at the time of action. This represented a change of action on the part of the I.C.T. Their preference, until this project had been to locate the low-income subdivision developments to the south of the central core of the city; where most of the industrial developments are located. (see Fig. 0)

The main reason for this change in location was due to land costs, as well as the availability of land in the area. Since the project was in a sense a pioneer within this location, the inhabitants of the project experienced initially not only being surrounded by open fields, but also inconveniences due to the inavailability of public transportation service.

Changes in the location policies of the I.C.T would have been favorable to the dwellers if they had contemplated the location of industry and commerce which are the main sources of work for the lowest income groups that inhabit at these subdivisions. At the time the I.C.T made the decision to initiate housing development in the north-west there were no industrial areas nearby that could generate employment for the dwellers of such subdivisions. As it may be recalled the city was mainly divided in two for a long period of time. The north, residential areas for the rich and upper middle-class and the south, residential areas for the lower income brackets in Bogota' and industry and interregional commercial areas.

Today, this picture has changed somewhat. The recently developed Medellin Freeway has increased accessibility through the area, at the same time, the initial population for the most part has moved south and
southwest closer to the industrial areas by their work places. Hence, the area has been slowly reinhabited by blue collar office and commerce workers. The main vehicular axis which is used mostly by the public transportation network has been transformed by the appearance of offices and commercial activities. Although the community still finds itself without some basic services such as a market place, which is held occasionally in an open lot, since it is not permitted to hold public markets. This situation has been compensated by the appearance of small minimarkets within private houses. This service though does not necessarily fulfill the need of a weekly market food supply (Fig. 17).

Community services within the settlement are scarce. The policy of site and minimum standard services provides space for community services that are seldom developed. In the case of the barrio "Garces Navas" (Fig.17) community services are non-existent therefore overloading nearby services like day-care centers, schools, community health centers etc. This circumstance has become a generalized problem within the institutional policies towards low-income housing projects. The result is translated in the construction of an incomplete urban fabric which acts as a pressure focus over the overloaded physical and social infrastructure of the city. The irresponsibility of the proposal indicates a quantitative emphasis disregarding a qualitative emphasis. In other words, placing some of the disposition of the investment to obtain an urban insertion, acceptable and complete with respect to its minimum requirements.
2) Urban Design Aspects

The vehicular and pedestrian networks of the "Barrio Garces Navas" are intimately tied to the concept of maximization of usable land as proscribed in "Minimum standards" adopted by the I.C.T in 1971. The design of the vehicular system follows the idea of minimizing the extent of it through the complex, and the pedestrian system is to be the system of support to provide access to the dwellings (Fig.13 & 14).

The result evidences some problems. Some blocks are completely surrounded by vehicular roads presenting inconsistency of criteria with respect to the appropriate relationship between house and vehicular road vs. house and pedestrian path. Relationship criteria between house and vehicular road reflect disadvantageous situations for those farthest from these. Hence, presenting unclear relationships for those who own private transportation means and find themselves two blocks away from the nearest parking stall. By the same token, a symmetrical distribution of the vehicular network would encourage equilibrium between maximum distances from the dwellings to the closest vehicular access, throughout the entire complex. The lack of regularity in the development of the vehicular network is one of the factors that affects over the layout of recreational open areas. In the same fashion as the vehicular network distribution, there is lack of consistent criteria with respect to distances between dwellings to be served by these areas and the location and distribution of them. Hence, the physical effect over these areas is one of considerable unattachment to the rest of the activities of the subdivision. These spaces have the appearance of being left-over spaces (Fig 12,13,14).
The five spaces designated to community services, are of irregular physiognomy and receive indiscriminately facades and/or closed end walls of dwellings. In other words these spaces don't generate a criteria of dwelling distribution within it's surroundings. The rest of the open spaces are formed by resulting corners from the lot layout and the vehicular network. The maintainence of the open green spaces within the Barrio is null. The urban furnishing, pedestrian paths, hard and soft areas and finally landscaping are non-existant. Some of these open green spaces have been occupied by small buildings housing pre-schools or activities of communal character. Independently of their use, architecturally, these buildings have not attempted to consider their surroundings in their site planning neither their best appropriate use. In general they are "land of no one" (Fig.12). On occasion (particularly in corners) these spaces have been incorporated by homeowners to their property without any respect for the communal character of these spaces.

This whole spectrum of "no mans land" contrasts dramatically with the front lawns of the dwellings themselves which convey an attitude of care and the warmth of human life. The facades of the dwellings also portray the care and warmth of it's inhabitants as they express their individuality through decor and colorful facades. This contrast suggests the direct relationship between the appropriation of the semi-public or virtual appropriation of public open space and the extent of care given to it's maintenance; at least in the social strata in which these projects are developed.

Public and private Primary and Secondary schools, exist within the complex. There is a community health center and the parochial house
provides some community services. There are no sport facilities. There is a lack of a food market outlet to supply the needs of the community, yet commercial stores are abundant throughout the complex (6 & Fig. 17).

It is important to note that the houses which were planned to include a commercial space are the least used to include that purpose. This indicates that within a community of this sort, popular strata which is regulated spontaneously, the distribution and intensity of the commerce and services obeys to mechanisms linked directly to the economic needs of the community. If there are no controls over the economy as a whole within the community it is useless to try to zone for the location, type and quantity of commercial establishments.

In the “Barrio Garces Navas” there are few infrastructure problems, mainly the lack of private telephone lines. Other than that, the existing infrastructure is acceptable and its coverage and efficiency are guaranteed. It is important to question if the network of infrastructure can assume greater capacity, once the dwellings have expanded fully and the original population has expanded to almost double its capacity.

The urban physiognomy is an important aspect of the analysis (Fig. 18). The urban physiognomy gives evidence of a progressive development and process of consolidation of the dwelling units and by the same token of the entire neighborhood. As was mentioned the public open space is an environmental and aesthetic chaos. Although there are some pedestrian paths which appear well groomed and among carefully maintained dwellings, these constitute evidences of an urban fabric culturally well adapted.

It is evident that the modifications and additions to the dwelling units have given the settlement an elaborated physical aspect, particularly
Figure 18

Urban Physiognomy - Heights
the 2 story additions. Approximately 1/3 of the total amount of dwelling units have contributed additions of 2 and 3 stories to the physical landscape. The spatial distribution of heights is for the most part almost like the one described for the commerce, very homogeneous throughout the entire project. There are not any recognizable clear differences in height tendencies either around those dwellings that face the vehicular roads or those that face the pedestrian paths and likewise for those that face open green public areas. In general terms, the image of the settlement is incomplete, given the amount and diversity of transformations of the dwellings.

2a. The Cluster-module Aspects

Throughout the layout of the cluster-module of the “Barrio Garces Navas” the designers utilized the notion of blocks of plots aligned along the faces of long rectangles. The grouping of plots within the blocks does not follow a consistent design criteria since, obeying to the irregularity of the vehicular network and in general to the urbanistic layout, some blocks are complete and others incomplete with plots of one front, others of two and three fronts. This haphazardous distribution can only obey to the anxiousness of the public policy to fulfill their quantitative standards isolating any qualitative concerns (Fig. 12).

With respect to sunlight exposure, most plots enjoy appropriate orientation since most of them are on the 45° axis with respect to the north-south axis. Nevertheless, there are two factors that modify these possibilities.
1.- The meager distance between front facades of these dwellings within the pedestrian paths, merely 5 meters (16.5 ft), and their proximity among setbacks.

2.- The size of the additions which occupy a considerable amount of the plot and go up to two and three stories. Hence, the possibility of sunlight exposure is reduced considerably and in some cases almost eliminated. This situation indicates that in the urban design phase, particular consideration should be given to acceptable distances so the units may still enjoy adequate sunlight exposure even after additions have been developed.

The problem of distance between units also affects the conditions of privacy among these. The pattern of occupancy of plots that was originally proposed by the I.C.T left minimum rear set-back of 6 meters (20 ft). Most additions developed by the users have eliminated that setback and built beyond the maximum allowed bringing the rear facades closer than the stipulated 6 meters (20 ft). This situation, added to the 5 meter (16.5 ft) distance between the front facades creates the problem of lack of privacy among units.

It is commonly in the urban design development phase, that the visual and social importance of streets constitute the articulating axis of urban life within "Barrios". So what intended to be a one story acceptable pedestrian path connection is converted, by the development of two and three story additions, into narrow alleys. Narrow alleys that are inadequate to provide sunlight exposure to the dwellings, privacy and acceptable urban scale.
3). Architectural Design Aspects

An architectural survey (CEAM LTDA.) shows interesting aspects of the transformations developed in the dwellings of the "Barrio Garces Navas". Initially the survey was distributed among the three types of dwellings proposed by the ICT as follows:

Dwelling type A (one story) 34
Dwelling type B (two stories) 13
Dwelling type C (one story) 119

The type C dwelling was the most used by the institution in their initial development of the settlement. Therefore, their transformations are probably more indicative of the existing tendencies and possibilities. The survey points out the fact that 87% of the sample dwellings had undertaken additions, and 98% had undertaken some sort of facade or interior modifications (Fig.19). The percentage of dwellings that incorporate two complete units is 6.6%; the same follows for those which share services 2.4%. The analysis also concludes that for the most part the additions have been in bedrooms. This reiterates the fact that there is a tendency within the settlement to let rooms.

The average number of persons per dwelling is considerably high, 6 persons per dwelling, with respect to the initial amount of space provided for bedrooms. This reinforces the need to add more space due to reasons generically called "functional or essential". In this respect the survey shows a very high percentage 87% corroborating the need and utility of additions.

Additions have occurred in almost all units originally type C. Of these, most of them have added only on the first floor. This is important because it reiterates the need to complete the family's dwelling before initiating a
second floor addition. This also contrasts with the provisions of the institution which are mainly geared to accommodate a second floor addition. Very few families indeed follow the addition proposal by the I.C.T.

The cited analysis also shows two main issues 1.- the additions tend to saturate the plot; bringing the occupational index to between 66% and 76% of the plot. 2.- the front yard occupies approximately 15% of the plot area, meaning that if the users decide to build on the rest they would be building over the rest of the 85%.

The volume of the additions performed most commonly increase by 100% the initial area. Which translates into a duplication of the initially built area by the users within a period of 10 years. The analysis of the survey indicates that the average investment per dwelling unit to accomplish this built area, has been of approximately 3 times the initial investment/unit.

It is important to note that even with the additions and modifications these dwellings cannot satisfy important rational aspects, such as an organized, well ventilated and lit unit. Yet the level of satisfaction of the users is very high, which indicates a discrepancy between the professional and the popular approach towards the meaning of a "satisfactory dwelling unit".

This difference can be studied through a study of greater depth on the "notion" of the appropriate dwelling for such human groups; study which is beyond the scope of this thesis.
2. The Subdivision "Barrio La Manuelita" by the Caja de Vivienda

Popular: C.V.P.

The subdivision is located in an area called "El Rincon" next to the independent district of Suba, on 126 Avenue, between 88th and 91st streets. It occupies an area of approximately 3,52 Hectares. The project began construction at the end of 1971 and was finalized by the early part of 1973 and offered a total of 291 basic unit dwellings. It was a housing program developed under the criterias of incremental or progressive development and Minimum Standards (Fig. 20).

a. Institutional Policy Approach Governing the Development

The subdivision "La Manuelita" was inscribed within an experimental plan for which the objective was, "to establish a set of general urban standards, integrated within a housing policy that would offer solutions more in accordance with the economic capabilities of the least favorable groups within the low-income class strata and the stimuli of economic and human potentials of those communities towards development" (2).

b. The Project

The aim was to search towards a housing solution that even though economical (departing from an initial minimum nuclei) it would perceive future development possibilities for the dwelling according to the economic capabilities of it's inhabitants; therefore offering within the realm of a legal system alternative solutions to the unregulated invasion settlements "(barrios de invasion") and or pirate subdivisions "barrios piratas".

1). Urban Proposal:

The CVP and the District Planning Office determined a cloister type of grouping module that would permit the creation of communal recreational
Location of the Subdivision "Barrio La Manuelita"
areas along with community services during initial stages. The grouping module contains 30 dwellings, gathered around an open green space, within which there is a sanitary installation with 6 laundering stalls, a large sink with 3 faucets, 3 shower stalls for women and 4 showers for men (Fig. 21,21a). The proposal searched to achieve a housing density of 75 dwellings/hectare, which was increased to 82 dwellings/hectare once the project was underway.

The grouping modules are interrelated through a central pedestrian axis which runs through the complex leading towards an area of communal use; sports and other services, (Fig. 22). This central pedestrian axis serves also as an open storm sewer for the entire complex. This demanded a complete study and construction of it's section including the sidewalks; configuration and drainage (Fig 23). There are no vehicular paths within the complex, but there are a series of streets around the perimeter of the entire complex (Fig.24). The water and sewer infrastructure was built initially to give service to the sanitary installations, but the project was only undertaken once the dwellings were turned over to it's inhabitants, who were then in charge of carrying out the building task.

2). Architectural Proposal

The initial stage of construction turned over to the new homeowners was a space 3.50 mts. (11ft) x 3.15 mts (10) located next to the pedestrian paths and a latrine towards the back of the lot. The lot was 6.00 mts (19 ft) of front x 9.00 mts ( 29 ft) in depth and was to be developed by progressive development not only in the spatial aspects but also in terms of it's own services (Fig. 25,25a). This is the reason why some alternative development schemes were designed by the institution and offered to the homeowners.
Figure 21

General Layout of the Subdivision
Communal Sanitary Installation
Figure 24

Vehicular Structure
A "Barrio La Manuellita" Edge with Rolling Market
G The Center of the Cloister
Initial Stage of Construction - The Dwelling Unit
3). Project Construction Management

Contracts were given to private construction firms and dealings were between the contracting firms and the institution as a client. The institution had the I.C.T. be it's representative during the construction administration process.

c. The Homeowners

Around the time the project was to initiate it's housing offering, a case of housing emergency had arisen in Bogota'. Therefore the C.V.P. decided to give priority to those in need at that moment. This situation accounted for 60% of the dwellings and the remaining 40% were raffled among those regular applicants who had qualified for dwellings within the project.

During the construction process the homeowners did not have to collaborate, but once the homeowners had possession they were encouraged by the C.V.P. to promote a community organization among them with the objective of continuing and finalizing through mutual-help the construction of the domiciliary network (3).

With respect to the characteristics of the initial homeowners, the only information available reiterates the heterogeneous character in terms of it's procedence and homogeneous character in terms of it's economic capacity and social level (4).

d. Project Evaluation

1). Urban Aspects

The "Barrio La Manuelita" was located within a plot of land, that at the time of it's planning and execution, was practically in a rural area. The problems that arose due to this location were considerable: lack of transportation possibilities
lack of possibilities for connecting with the existing public services network. (Fig. 0 page X).

The decision for the location followed, as is to be presumed, criteria of land acquisition for the lowest possible price. It is unfortunate this type of approach only serves the quantitative criteria in the programming evaluation since the relationship of the new subdivision with the existing (1970) urban fabric was not taken into consideration. Again this reflects a lack of concern for qualitative criteria.

The effects of this subdivision over its surroundings are probably more important than those mentioned for the "Barrio Garces Navas" but the development of the area was not undertaken by commercial developers, but by pirate developers that have covered most of the surrounding area (Fig. 20). The initial transportation problems of "La Manuelita" were worse than those of the "Garces Navas". since it was located out of reach of any transportation corridor. Today, this problem has diminished somewhat, since most of the area has been developed extensively justifying the proliferation of public transportation routes that provide the required service.

Public transportation is not perceived as one of the problems of the settlement now. In spite of the location of the settlement, most of the work force settled here, and work in the industrial sector of the economy. Since there are no industrial areas nearby, this presupposes long trips to work.

The scale of the subdivision is not large enough to generate a demand for community services, although the extent of development in the surrounding area has generated such a demand. The old municipality of Suba nearby, at the moment, is facilitating some services: hospital, schools.
Since the development of the surroundings has been illegal, the absence of plans for community services is very clearly felt (Fig. 20).

"La Manuelita" at the urban level is a critical case that illustrates the opposition between the needs strictly quantitative vs. qualitative. It is evident that the original population was, at that moment, the lowest income bracket that could seek to receive a solution to its housing problem. Hence, only an economic consideration can account for the choice of such a distant plot of land and the deficiency in the specifications of the first phase.

2). Urban Design Aspects

Given the reduced scale of the project, the urban layout presents a few points of consideration, since it's area represents the size of a sub-module within a larger subdivision complex.

The location of the vehicular roads with respect to the dwellings does not present the same problems observed in the "Garces Navas". The problem of the vehicle, as is commonly dealt with in the planning and design of low-income housing subdivisions, is assumed to be non-existent, due to the impossibility of obtaining a private vehicle due to the high cost. Despite these general circumstances it is worth mentioning the fact that there is one homeowner that decided to build a garage in his unit and has had to live with considerable restraint and inconvenience since the urban distribution did not contemplate any type of arrangement to that effect. La Manuelita only has one communal private vehicle parking lot (Fig.24).

The pedestrian path network of "La Manuelita" is clear and corresponds to a criteria of economy and optimization of the open free space. The central pedestrian axis is definitely and effectively the structuring axis of the settlement given its distance to both extremes and
the land between the main access road and the most distant point within the pedestrian path. Furthermore, the fact that the public space of the subdivision is distributed in an orderly fashion in "cloisters" around which the dwellings are organized, helps to model a consistent and coherent system of circulation and public spaces (Fig. 22). An apparent advantage of the system is evidenced on the one hand by the diverse manifestations of care and attention of the public spaces (comparatively superior to the findings, in the "Barrio Garces Navas"). Hence, the public space in general does not present symptoms of carelessness or deterance.

The public services network presents a considerable number of problems in "La Manuelita". It must be taken into consideration that at the time the subdivision was established, there were not any public services provided and that all of them were built "a posteriori" (afterward). The sewage lines were built through community action. The water lines were built by the appropriate institution. Today this line presents numerous problems due to its deficient execution. The domiciliary telephone network is non-existant.

The configuration and design of the public spaces of the "Barrio La Manuelita" were initially considered to serve and encourage strong community relationships. This goal has apparently been met although in such a tight community the analysis brings forth that there are conflicts of interest among neighbors and problems of such sorts.

The transformations in the urban physiognomy in the subdivision are immense. From the 3.5 x 3.15 meters (11 x 10 ft.) that were initially awarded, to date, there has been a consolidation of the spatial structure and the residents have accomplished the physiognomy of a completed
subdivision. The architectural expression of the transformations is very heterogeneous but present as constants the use of masonry and considerable advancements in finishes.

2a. Cluster-module Aspects

It is worth mentioning once again the small scale of this subdivision. It could be considered, in itself, a sub-module of a larger development. It is particularly interesting to note the variance on a traditional use of the block, which permits grouping of units around a cloister (Fig 21). The dwellings find themselves surrounding the public space which provides little opportunity to use this space as a dumpster or even neglect it. Given the restriction of the lots the dwellings are to develop on 6 X 9 meters (18 ft. X 36 ft.), the additions have saturated the space, therefore presenting problems of lack of privacy. Although these diminish in proportion depending on the type of public space across from the dwelling unit. Once again the qualitative criteria has predominated over the quantitative, therefore obtaining a greater number of units than adequate for proper separation and privacy would have been possible.

The additions and modifications of the dwellings are considerable and affect aspects such as: access to proper amounts of sunlight and privacy in the same fashion as it did in the "Garces Navas", but to a greater extent far worse due to the limited amount of lot space provided. Two tendencies are distinguishable in this subdivision:

a.-commerce tends to be in the surroundings of the main public transportation corridor (trans. 91)/(Fig.26).

b.-increase in height of additions follows this same trend (Fig. 27). These diminish in height and intensity as distance increases farthest from
the main public transporation corridor.

3). Architectural Design Aspects

The initial dwelling furnished by the C.V.P. to the homeowners of "La Manuelita" was a room 3.5 x 3.15 meters (11 x 10 ft.) and a latrine (Fig.25). Beginning with this initial minimum solution phase, there has been an array of modifications and additions that reach today a very high occupational index in relation with the initiation stage. It is interesting to note, in similar fashion as in the "Garces Navas", the C.V.P. furnished plans for additions in two stories. A survey showed that only 35% of the homeowners have developed an addition and only 28% the two story scheme furnished by the C.V.P, the rest have deviated from the original scheme (Fig. 28). The same survey threw other figures such as:

1.- Single story additions= 61% with an occupational index that ranges between 66 and 99%, this latter saturating the lot.

2.- 97% of the dwellings in the "Barrio La Manuelita" have undertaken additions, while 100% of them have undertaken modifications to accommodate sewer and water, finishes and enclosure of their plots.

The percentage of plots with two dwellings, whether with independent or shared services is relatively higher than the one found in the "Garces Navas"; 17% of the total. The additions once again are mainly for bedroom spaces. The volume of additions built in "La Manuelita" is four times the initial stage. Hence, the total area has developed five times in a ten year period. This means that the total complex has increased in approximately 10,000 sq. meters during this lapse of time.

An analysis of the survey indicates that the average investment per dwelling unit, to accomplish the 5 times the original built area, has been of
Distribution of Community Services and Commercial establishments
approximately 6 times the original investment per unit at the time of acquisition of the unit.

Finally it is important to note that the process of saturation of the plots is consistent and that from the samples it can be deduced that no satisfactory dwelling type could be derived from it. "Barrio La Manuelita" proves once more that the inconsistencies of the institutional approaches towards solving the housing problems for the lowest income brackets of the society. The notion of providing a space where a low-income homeowner would be able to "develop progressively" a standard middle income type dwelling and not a dwelling for the lowest income population who's image and living standards are diffuse compared to our standards socially accepted, is out of focus. The following chapter will intend to provide some suggestions towards filling a gap between those diffuse and complex living standards of the rural migrant, who constitutes the most socially dissadapated group from our socially accepted urban standards.

3. **Summary of salient similarities and/or differences between both “Barrios”**

   a. **Urban Aspects**

   1.- Both “Barrios” were located on the perimeter of the approved city limit plan for that date.

   1a.-settled on land distant from the exisitant urban fabric.

   1b.-distant from public services networks.

   1c.-distant from established transportation corridors.

   1d.-distant from established commercial, institutional or social services.
2.- The settlements facilitated private and/or private land developers to take action in surrounding plots of land.

3.- The user-type was simply typified by an income bracket figure; without consideration of cultural and socio-economic background, places of work, availability of possible job opportunities in the surrounding areas, occupation, etc. Hence, the users' needs were undoubtedly miscalculated as is most common in most institutional approaches.

4.- The lack of communal services in both "Barrios" and of support services such as clinics, markets, administrative services etc. are factors that contribute to the isolation of these solutions, hence, of the population from taking active part in the socio-economic machinery of "modern" urban life.

As a matter of fact this dislocation between services and low-income housing projects by institutional and/or pirate subdividers is a common denominator in Bogota. Therefore most of the clinics, hospitals, markets, and administrative services, are generally concentrated in areas distant from low-income housing projects. The lack of a market place in the "Garces Navas" is representative of this problem.

All the previous findings reflect the deficiency of interinstitutional coordination in Bogota; inconsistencies in the solutions brought about by the different institutions that intervene in the planning and provision of public services and assistancies to the population. It is not acceptable that state entities should assume isolated positions that even reach the point of creating virtual obstacles, hence, sometimes creating more problems than originally sought to solve. It is also important to mention that low-income
housing projects seldom have been sought as means to manipulate political support. Turning the housing responses into quantitative factors, hence, producing in most instances out of scale and incomplete solutions as in the case of the "Garces Navas".

b. Urban Design Aspects

1.- Proper consideration was not given to parking spaces that could provide even a minimal amount of security so they could be used with confidence. This brings a second problem, which is the urge of homeowners to intend to park their cars, buses and/or micro-buses in their front yard. Of course this can only be achieved when the width of the pedestrian paths and roads permit it.

2.- The use of the public space differs so much in these cases that a study on the subject could be easily undertaken. The use of the cloister in "La Manuelita" presented itself as a positive design criteria to achieve some involvement of the community in maintaining the space.

3.- Both "Barrios" present a high percentage of houses with commerce and/or services. In response to the lack of these in the area.

3a. These do not present themselves in any identifiable fashion, they occur haphazardly and indiscriminately about the urban fabric. In "La Manuelita", perhaps because of its scale, there is a tendency to locate near the only main axis.

3b. In both cases food establishments predominate. (grocery stores, bakeries and small restaurants).

3c. Despite the slight income and social differences of the population, the amount of commercial establishments in proportion to the scale of the project is the same. (according to the study cited 13% in both cases).
4. Both "Barrios" present an incomplete urban physiognomy, despite the fact that the "Garces Navas" houses people of slightly higher income than "La Manuelita".

   c. Cluster-module Aspects

   1. At this level there are not many points of comparison between both "Barrios" since both make use of different types of block configurations.

   2. There is a common problem though and that is regarding the meager distances between housing units. These bring about problems related to visual proximity, and audible problems as well, particularly once the additions to the dwellings have been developed.

   3. With respect to the latter "La Manuelita" provides a better scheme since its cloister form reveals improvements in these areas.

   d. Architectural Design Aspects

   1. Transformations of the dwelling unit in both "Barrios" reach similar percentages: both reach over 80%.

   2. Both present similar patterns for their additions; where the outstanding need is for additional bedrooms.

   3. Both subdivisions coincide in the percentage amount of additions, 28% of total and of dwelling units.

   4. Also the percentage of rented rooms is similar in both "Barrios".

   5. The real occupational indexes reflects the degree of lot saturation: "La Manuelita" has reached the possible maximum.

The previous experience in habitational conditions of the new homeowners defines to a great extent their approximation towards the awarded response from the state institutions. Homeowners who in most cases come from tenement occupations and other forms of subnormal
dwelling, for the first have access to a complete dwelling unit or means of obtaining one. They unmistakably will and do adopt a different attitude than those who have dwelled in "normal" units, either on lease or sub-lease.

In the case of "La Manuelita", the image of a completed and stable dwelling is not consolidated by their previous experience and the transformations lack organization and/or a final foreseeable structure. The dwelling is built on a piece by piece basis in which the mix with spaces for rent are indiscriminate.

In the "Garces Navas" in which the previous housing background experiences are more stable, given the slightly higher income level, the transformations are more predictable and tend to reflect standard distributions of functions. It still remains a fact, though, the notorious differences, between the dwelling provided by the institution and the notions of the users.

Hence, some interesting factors begin to be revealed, for example: In "La Manuelita" where most of the populations background come from rural cultural habits and/or tenement occupations, people tend to reproduce their promiscuous habits, without discriminating the functional components. In these case there is a tendency to remain in a stagnant economic and cultural state, maintaining a minimum standard of living. The money obtained through the rental of rooms complements the household income. Although this income never seems to be large enough to improve the economic level of the family. In "Garces Navas" where the background of most of the population is urban, more standard uses of the dwelling space take place. This is a better distribution of the family within the available space, even to the point where one will find an increase in the number of service units
within the house.

The panorama just described suggests hypothetically a "rationale" in the use of the habitable space based on previous dwelling habits or experiences. The possibility of these attitudes to correspond with past background dwelling habits is not absurd. It suggest that a process of assimilation into the urban medium might exist. It would perhaps require temporary and transitional housing experiences before fulfillment of the need for a complete housing unit, separated or independent, with discriminate use and rental functions and with various approximations to the community, temporal or permanently considered as appropriate.

**B. The Unregulated Housing Market in Bogotá**

1. **The Pirate Subdivision "Britalia"-BOGOTA**

Britalia is located in the southwest of Bogotá between the suburb of Bosa and the new wholesale market (Fig. 0, page X). It is on low-lying land which is liable to flooding in winter. It is flanked to the west by open off city limits rural land and to the east by other pirate subdivisions (Fig. 29).

Sales began in 1973 but possession was not granted until 1974 when most lots were in fact sold. The pirate subdivider bought, or at least promised to buy, the land from the two owners. By 1976 he had paid off the smaller debt but still owed the bulk of the purchase price. The subdivider hoped that the settlement would be legalized under the 1972 minimum standards decree, but this was not permitted because one-fifth of the planned area lay outside the urban perimeter and because the water company felt it would be difficult to drain the lower parts of the settlement. The
Location of the Pirate Subdivision "Britalia"
request was formally refused in January 1975. In May of that year the community-action (junta de acción comunal) denounced the subdivider to the authorities. The latter did not intervene, ostensibly because they lacked confidence in the state authority (I.C.T.) to service the community, and signed an agreement with the subdivider to legalize the community providing he brought the "barrio" up to minimum standards servicing levels. He complied with part of the request, paid for the installation of electricity, paid off part of his debt to the original owners, and made considerable efforts to install some water and drainage services. But his efforts were insufficient and in June 1976 the authorities intervened strongly, urged on by the community. The settlement was then run by I.C.T. but little further servicing took place. The community was exerting great pressure on the authorities to improve the services but without great success with respect to water. The community was successful, however, in mobilizing certain government agencies and more particularly private groups to help it. A bus route was initiated in 1978, the city's first UNICEF health centre was located there in 1979, and in the same year SENA established a corrugated room for classes in practical work.

The settlement had approximately 1,650 families in 1979 who occupied 1,450 lots out of the 2,846 total available. The settlement is less consolidated than several of the other settlements in part because of its youth and in part because of the servicing difficulties. As a consequence, there has been a much higher proportion of owners than of renters (7).
2. The Pirate Subdivision „Juan Pablo I“ - BOGOTA

Juan Pablo I is located just beyond the perimeter of the District of Bogota' in the neighbouring municipality of Soacha (Fig. 0, page X). It is on the fringe of a huge area of consolidated pirate settlement which has developed in Bosa, one of the main industrial areas of the city.

In the case of Juan Pablo I, however, there is little sign of consolidation because there are major doubts over the land-tenure situation. Many charge that Juan Pablo I is an invasion and the land-tenure situation is certainly complex and shrouded in controversy. Originally the land is supposed to have been purchased by Father Carvajal's "Asociacion Provivienda de Trabajadores", a non-profit organization selling housing to the poor. He was president of the association until 1956 when he left Bogota for Venezuela. Certain families were invited to live on the land and look after it, but in 1971 three of these families started to subdivide the land to sell lots to low-income groups. The "invasion" was not opposed by the "Asociacion", simply because its new head was not in Bogota' at the time; it has been suggested that he was following his own interests rather than the "Asociacion's".

In the following years a legal suit was initiated and with the help of political influentials linked to the "Asociacion", the police were persuaded to harass the settlement. In July 1977, for example, many houses were destroyed in the "barrio". Police harassment has been inconsistent, however, because the governor of Cundinamarca, who controls the police, has often been at odds with the political authorities in Soacha. It is clear that the three individuals who sold, and continue to try to sell, lots are acting as pirate subdividers, but they are regarded by most of the inhabitants as
fellow strugglers in the fight against the "Asociacion".

The land is low-lying and is often partially under water. There are no community services beyond what mutual help has provided, that is, illegally tapped electricity, an underground water hose and a provisional drainage system. The settlement has received little help of any kind from outside the community, no financial assistance from the council and no legal help.

The effects of uncertain tenure and police harassment are obvious. The level of house consolidation is low, the people have stopped paying for the installments on their lots. There are 130 houses and the vast majority of the inhabitants are "owners". Background on this settlement is presented because it provides a marked contrast with the normal pattern of pirate urbanization in Bogota' and because it provides clear evidence of the problems facing a community which lacks secure land tenure (8).

3. The Invasion Settlement, "Las Colinas"—BOGOTA

Upgrading existing settlements as a "solution" to "the housing question" has its limits. Some of these may be seen in the following case study of a particularly conspicuous, and in many senses very successful, upgrading project. The project of "Barrio Las Colinas" in Bogota'. This program is interesting as an example of the technical and organizational difficulties of a "comprehensive" approach to settlement upgrading.

The land in question, 12.5 hectares which were to become the barrio, was the property of the "Fundacion San Carlos", a charitable foundation. It was the side of a hill and extremely steep. On the other hand, its location was excellent, right next to one of the major traffic arteries in the southeast of the city. The very first invaders were rural families who had
come fleeing "La Violencia" the rural violence which in the late fifties devastated Colombia.

In 1960, somehow the word got around that the lands "had no owner" and a huge invasion took place. According to Pro-Vivienda, this invasion was extremely chaotic. Only about one hundred families actually settled, with all their household goods; others were running around stringing wires and in other ways laying claim to lots. Some of the invaders were residents of the adjacent "Barrio Quiroga", a neighborhood of fairly well-established people, who saw a chance to acquire land and in some cases deployed family members to occupy two of three lots at once.

The area was surrounded by police and the Mayor, via loudspeaker, warned the people to disperse. He also said that the city would develop a Housing Plan to take care of all these homeless people. (This, apparently, was the source of initiative for a subsequent large, U.S.-financed housing project called "Ciudad Kennedy") Most people peacefully dispersed; a small number, on the upper slopes, remained.

In the course of all this, the Pro-Vivienda group, while unable to completely organize or control the invasion, did make rapid organizational strides. The group became established as the spokesman for the invaders vis-a-vis government. It acquired a very large number of new members. And its leaders began to develop the tactic of working with smaller, organized and disciplined groups of families. Pro-Vivienda finally accepted the removal of the invading families, with the exception, extracted from the authorities by bargaining, that those families who had been there before the big invasion would be permitted to remain.
In the subsequent months, the group began to invade in an organized way, bringing in groups of thirty families at a time, and charging a modest fee of three pesos a month to each family. There were some additional charges, reportedly five pesos a month, for clandestine water and light taps. In addition, some of the invasion organizers began to charge for lots to later comers. Dissatisfaction with such charges helped to form, subsequently, a group opposed to Pro-vivienda in the barrio.

The process of invasion continued over a number of years. By 1963 five hundred families had arrived. When a census was done in 1967, in preparation for the rehabilitation project, it showed 6,235 inhabitants, and other estimates were considerably higher.

At the time of the invasion, of course, there were no public services in the area. The electric high-tension lines which traverse the hillside made it possible to get electricity rather quickly; the settlers contributed funds to buy electric cables, and soon ran "contraband" electric lines to the shacks. Water was more complicated. For some time, the settlers, or their children, had to beg or buy water from neighboring areas and lug it back up the steep slopes. (When some communal taps were installed, the practice of "contraband" lines extended itself to these). In 1963, with the land invasion completed, the Mayor of Bogota' arranged to compensate the "Fundacion San Carlos" by purchasing the land from it for approximately 290,000 pesos. Some consideration was given to regularizing the situation of the "barrio" by giving land title to the settlers, but it was argued that this would only encourage further invasions. In the "Las Colinas" project which finally emerged, a central element was the regularization of land tenure by having the settlers purchase their lots from a city agency.
The first factor which made the Barrio Las Colinas project possible was the emergence, within the settlement, of a group willing and indeed anxious to collaborate with the government. This meant, of course, that Pro-Vivienda ceased to control the settlement.

The specific political negotiations which assembled adequate high-level support for the project are nowhere recorded, and can probably never be known. Almost certainly a key basis for the viability of the project was the appeal of taking an extremely conspicuous "bad example" of the appropriation of private property and converting it into a demonstration of the will and capacity of the government to deal with the issue of low-income settlements. The Bogota Mayor apparently extracted, as a condition of his support, that the execution of the following plan be condensed into two and one half years—roughly his term in office—rather than the five originally proposed.

The Centro Colombiano de Construccin assembled an inter-disciplinary team and began in November 1967, to carry out the studies which would serve as the basis for a Plan which would improve the "barrio" both physically, socially, and economically, and integrate it into the normal structure of the city. The concept of settlement improvement, rather than eradication, was seen at that time as a strikingly novel concept.

There was a survey of the topography and a social survey carried on mainly by students in one day which assembled social and economic data on the residents, inquired as to their willingness and ability to pay for improvements and to contribute through their own labor, and even—another innovation—assembled sketch plans of the existing housing. With respect to the housing itself, it seems worth noting that the frame of reference of the
Centro Colombiano was such as to focus particularly on density of occupation. Only 1.63% of households were classified as living under "normal" density (10 square meters per person), 18.16% in "crowding" (5-10 square meters per person), with the vast majority in conditions of "promiscuity" or "inhuman conditions" (9).

A special team developed a zoning plan for "Las Colinas" and determined where the roads should be laid. They also had the task of planning for communal facilities and open areas. Given the topography and the existing pattern of settlement, this was not easy. This team therefore recommended that the community center - and an apartment building projected but never actually built - be constructed on land just outside "Las Colinas" itself, which could be made available through negotiations with the private urbanizer who was developing in the area. They reasoned that the location would even be an advantage; it would help "integrate" Las Colinas residents into the rest of the city.

During the planning stage, the "Centro" team produced a prototype dwelling plan around which they built the concept of the loan "package". In practice, however, since lots were different, people's needs were different, existing structures were different, and since the people in general found the Centro's prototype inappropriate to their needs, families wound up building a variety of structures. The Centro adjusted its operations to conform to this, finally providing the staffing (five architects) to draw individual plans for each family in the program.

Another part of the original program which was not carried through in the stage of implementation was to be an apartment house in the neighboring "barrio" for those families too poor to pay for the lots and
permanent dwellings. Here people were to be charged a "token" rent, which could later be credited to a downpayment for a dwelling in another C.V.P. project. For reasons which are now obscure, most probably having to do with the cost of this particular element in a program for which it was generally hard to assemble the projected funding, this building was never built.

The project was a success in many ways. The neighborhood "works". There are homes, businesses, half the buildings are of two stories, and 11% three or over. The constructed area has doubled since 1967. It has served as a publicizable "demonstration project". Victor Florez of the C.V.P. presented it at a large meeting in Washington, and the film sent to the UN Habitat conference at Vancouver by Colombia dealt with "Las Colinas". The C.V.P. completed its work in "Las Colinas" in 1974-1975, and since that time has had no administrative contact with the area. People are, of course, still paying off their loans, but this financial part of the program is managed by the I.C.T. Only a small part of the population has carried the process through to the point of getting property titles.

In general, the C.V.P. reportedly evaluates the program as an educational, but unfortunate, experience. One C.V.P. informant estimated that 40% of the costs incurred were not reimbursed from any source. Both because of the topography, and because of the difficulty of working in and around the existing buildings, the infrastructure turned out to be enormously expensive, two and a half times estimates. Instead of running up a set of identical little houses, the C.V.P. found itself hiring architects to draw individual plans for eight hundred families. It was not easy to maintain a good payment record in the loan program. There has been great
deal of turnover. It proved practically impossible to charge those who had taken over lots for back payments still outstanding at the time of purchase, and even more impractical to pursue the original debtor. A legal eviction proceeding may easily take years, and it was thus very difficult even to get tough with those who remained on the site, but who had gotten behind in payments. No attempt was even made to recover the costs of the various architects, social workers, and other personnel. The interest rate itself, given the rate of inflation, constituted a substantial subsidy. From the C.V.P.'s point of view, such an investment of resources in one project is a form of social irresponsibility.

The C.V.P. in general tries to organize its finances in terms of three categories of programs: 1) programs for low income families which are expected to run at a loss - i.e., embody a subsidy, (2) self-financing projects; and (3) projects capable of generating a profit which can be plowed back into the first category.

In practice, the system does not balance itself out in this way. A few years ago a study of the C.V.P.'s operations showed that it was becoming decapitalized at a rate that would bring bankruptcy in four years unless changes were made. The proposed solution was a larger government subsidy, and attempts to engage in profit-making projects (10).

A C.V.P. spokesman recognized that the attempt to keep the agency financially viable makes it difficult to meet the needs of the low income population in Bogota. Indeed, he said, a recent study sponsored by Committee for the remodeling of "Barrios" calculates that a quarter of the city's families cannot afford to pay for even a serviced lot.
NOTES

(1). rate for 7 people – each ration consisted of: Corn flour, wheat flour, vegetable oil, pwdeer milk, dry vegetables, fish and canned cheese. Such a project was undertaken by the I.C.T. and the United Nations World Nutritional Program.

(2). C.V.P. La Manuelita como plan de Desarrollo con Normas Minimas Bogota' 1976. On the development principles in the study of "Normas Minimas de Urbanizacion" mimimun standards of urbanization, turned in by the firm of Consultecnicos in 1971 commissioned by the I.C.T. the National Planning Office and the District Planning Office, The C.V.P. developed their program "La Manuelita" even before Minimum Standards were in effect. In that respect, the C.V.P. took the initiative of developing the corresponding decrees: # 1259 and 1260 dated November 20/73. (Source "La Manuelita" como plan de desarrollo progresivo con Normas Minimas, Caja de Vivienda Popular, Bogota, D.E.. Arq. Manuel Combariza 1976.)

(3). in 1976, 94.5% of the dwellings had sewer systems and 52.2% had water systems installed.

(4) A survey was carried out by CEAM LTDA. in 1982 which concluded the following facts:
- No. of resident families 313 (283 permanent residents and 30 renter families).
- Average family size 6 persons and a total of 1818 inhabitants.
- The 62.7% of the population is less than 20 years old and the 89.5% has less than 31 years of age; which accounts for a young population.
- The 34% of heads of household are workers and 26% are employed in the service employment areas, the remaining % are artisans, household employed or varied areas. 30% of heads of household present incomes that are less than the official minimum salary ( $1200 and an exchange rate of U.S.$1.00 = $48.00 ) and 62% was between the minimum salary $3200.00

The inhabitants had organized a committee for community action which was very active. They had also organized a sports committee which dealt with various internal community activities.
(5). this situation has changed considerably, since the opposite holds true today to the extent that some of the public space within the Barrio "Garces Navas" have been filled by buses from as many as 12 different bus routes. Public transportation operates in Bogota' out of private transportation organizations and are not required by law to hold Bus Depots at final destinations.

(6). To this respect, a survey (CEAM LTDA.) showed there are 424 commercial and service establishments and a very particular spatial distribution since it doesn't respond to any recognizable settlement pattern.
TOWARDS COMPREHENSIVE STRATEGIES FOR AN URBANISM OF RECONCILIATION WITH THE URBAN POOR

VI. CONCLUSION AND PROSPECTS FOR THE LOW-INCOME HOUSING PROVISION MARKET

The demand for improved quantitative and qualitative residential units, together with the necessity to consider residents' needs and their changing social activities, is one of the main problems facing the housing industry.

Until recently most governments felt that if they subsidized low-income housing, the problem of a housing stock deficit would be alleviated. If squatter settlements or shantytowns are taken for their physical value and as a reflection of the general economic condition in Latin America, the solution then must go beyond the mere construction of dwellings for low-income sectors of the population as has been suggested in this study.

It is clear that under the present system no Latin American state can provide a modest dwelling for all of its inhabitants. The decrease in economic and physical resources, the increase in population, the increasing concentration of people in the urban cores of Latin America generating a monstrous and increasing problem affecting the process of urban growth, and foreign debt, are constraints impossible to solve under a single faceted viewpoint: the quantitative. Rather, a Comprehensive approach seems more viable.
A - An alternative physical and programatic urban design proposal for Bogota, Colombia

Only an integral and/or comprehensive approach, encompassing the most pressing economic problems of Colombia, can approximate solutions to the housing crisis. If the government continues to view the issue as an isolated problem, applying strategies to solve only critical instances, determined by social pressure, the growth of many more unauthorized and unregulated settlements will be the only possible outcome. Obviously, the present condition is an untenable situation, and a latent social time bomb considering the magnitude of its growth. From an examination of the local situation the main problem areas, within the scope of this work, can be identified as being: the unaffordability of the housing supply by the lowest income groups of society, the socio-economic and cultural marginality of such groups, the lack of community service facilities, the lack of transportation accessibility and the mineal environmental quality of the settlements. Let us examine some of the issues drawn from this analysis:

1. Policy Aspects

There is demand in Bogota for residential lots at a variety of quality and price levels. While the biggest supply gap is in higher-quality lots, there remains a large segment of families who cannot afford lots with adequate service levels. These families will continue to buy poorly serviced pirate lots as long as the supply can be maintained at prices well below those in the "Minimum Standard" market. Hence, pirate subdividers presently, successfully fill the demand for modestly-priced, low-quality residential lots in Bogota.
The demand for modestly-priced, adequately-serviced, and legal lots remains largely unsatisfied. The "Minimum Standard" regulations, designed to permit the private sector to supply higher-quality lots, are being applied very restrictively, resulting in excess profits to the few subdividers able to obtain permits. Removing restrictions on "Minimum Standard" development could generate significant benefits:

1- the market for legal, serviced lots would become more competitive
2- the supply of higher-quality lots would rise, and
3- lot prices would drop. Buyers would have a wider choice of lots.

An increase in the amount of "Minimum Standard" development would probably give greater numbers of families adequate water, sanitation, electricity, and drainage services, as well as security of tenure. Such expansion may also reduce the costs of upgrading poorly planned and serviced subdivisions, bring more land development into harmony with local land use regulations and infrastructure plans, and mitigate the environmental problems associated with uncontrolled development.

2. Socio-economic Aspects

There is a considerable lack of social and economic integration of the lowest income groups within the city, e.g. resources such as: education and urban skills related to productive activities, and home managing activities. This lack of resources generally produces desperate housing decisions, that result in poor utilization of the scarce resources at hand by disadvantaged groups.

If an acceptable level of minimal unit housing is to be reached and indeed it should be sought, two problems are to be dealt with:
1.- people are not ready to accept the social changes in lifestyle demanded by the housing types as developed in "Garces Navas", nor are they ready to undertake the responsibility of providing for themselves in an urban setting foreign to most of them.

2.- intermediate stages of housing and urban societal adaptation processes need to be undertaken so that the existing housing provision strategies can be relieved of the pressures of accelerated demand and the process of urbanization can reach acceptable levels of control.

3. Urban Aspects

A quantitative view towards the problem of housing the urban poor has deprived solutions of any qualitative aspects. Hence, urban design anomalies are found, such as:

1. communal spaces that are totally abandoned both by the community as a whole as well as by the city public works agencies.
2. provision of inadequate dwelling spaces for the intended user
3. lack of adequate services to support the community due to lack of economic resources on the part of governments.
4. The search for low-priced land has implied development of projects outside the bounds of infrastructure and services lines, employment centers for the poor, shopping areas, etc; in short isolated places. Therefore families are obliged to live marginally.
Public space intended for community services, within low-income settlements, is being under-utilized. Its potential as a resourceful factor for an integrated solution is being overlooked or under-estimated. If community services, which are non-existant, possibly because they are being viewed as an economic burden, were viewed as a means for urban adaptation and socio-economic development, they could provide means for capitalization, both for the State and for the communities involved.

With the above in mind two related issues could be addressed:

1- Urbanization should be controlled. Hence, expansion of the city could be halted temporarily if a process of densification is encouraged within these areas of under-utilization.

2- Rationalization over the process of incorporation of marginal groups should be addressed. Hence, the issue of marginality is a key to understanding physical recommendations. Conventional, regulated housing projects have often failed because of a quantitative view towards the low-income housing problem which tends to isolate the phenomenon. The problem of housing must be analyzed within a comprehensive scope, which extends to the limits of socio-economic marginality. The dwelling without adequate jobs, education, and social services will not modify anti-social patterns of marginality.

The construction industry is in a state of under-development. The capacity to pay for the major portion of the population in need, is so low that even the limited quantity of Minimum Standard dwellings produced is
unaffordable. Therefore, it is in the social and economic integration of marginal groups with the urban and national life that the effective solution to the housing problems of each marginal or low-income family is to be found. Hence, a program for social integration through temporary and transitional Housing should be a priority goal.

According to the notion of socio-economic integration, each marginal family pursues its own housing solution through a gradual process of improvement in accordance with the advances they make within the process.

The process is both physical and programmatic:

1- progressive construction programs which emphasize autonomy and self-help, and reinforce and upgrade existing improvised and formal housing processes.

2- Mutual-help, socio-economic integration and development programs which emphasize a gradual self-help, socio-economic and cultural incorporation of the particular family (considered marginal) into a more realistic social participatory position, within an urban environment.

Within the latter concept, the infrastructure of communal services provides a setting for economic, educational, and social integration into an urban socio-economic environment. A self-improvement shelter system starts with a temporary shelter provision (minimum rent in exchange for an economically productive activity), continues into a transitional provision, and prepares the participant for a more realistic incorporation into the formal, progressive, regulated housing market. In the latter stages, a
progressive construction program or any alternate existing program may be more realistically undertaken depending on the needs and capabilities already acquired by each family.

The deteriorated housing environment has been taken as a disease that must be eradicated, and not as the symptom of a complex socio-economic problem within which a large section of the population finds itself; living marginally to the rest of society.

In the current scheme of things, the government has neither the resources nor the administrative capacity to provide traditional mass housing. Therefore it should introduce an approach by which government becomes a facilitator rather than a mediocre provider.

The new government as facilitator approach would promote cooperative projects with temporary and transitional housing programs, in return for increases in productivity not only through economic growth related activities, but also through formal and informal education and training of unskilled laborers in various trades. This program would create a basic economic improvement for the individual, so as to obtain the minimal financial support needed to be able to compete for a modest dwelling within a conventional, regulated low-income housing market. It would also promote social interaction among members with diverse backgrounds, yet with similar socio-economic circumstances. This leads the members to act cooperatively on common problems such as housing and other community welfare issues. Finally, this process provides an opportunity for people to start taking an active stake in their social role as civilians and to participate within responsible urban social activities. In short, it would provide non-existant community services and support structures such as,
training centers and/or workshops where people may be productive and at the same time learn a trade as well as adjust to a modern urban environment and social demands and responsibilities. The transfer of skill, in turn could also have an impact within the latter stages of the program when the individual is ready to undertake full responsibility of providing for himself and his family.

It is noteworthy that the potential macro-economic impacts in other industrial sectors (e.g. construction industry, manufacturing sectors, commercial service sectors) could generate additional income and employment as a consequence of increased activity promoted through the programs. Hence, a more active economic activity could lead a drive for a more competitive market and a diminution of the socially marginal groups might be feasible by incorporating unemployed people or otherwise unskilled labour into productive lines of the economy.

Yet another benefit of the proposal regards the relief of the pressures of quantitative competition of regulated low-income housing such as "site and services" against unregulated development, so the former can improve and be a definite asset to those who come into such programs. A more socially and economically adapted family may be more aware of the significance of the acquisition as opposed to mere acquisition through desperate measures.

By developing a more attractive integral socio-economic improvement program through housing as means towards improved social standards rather than a quantitative end, government housing may improve qualitatively.

The housing problem, that this thesis has attempted to address is one of the major problems within the urbanization process facing Colombia's
main cities (Bogota' being the most affected since it is the capital of the Republic) and other Latin American cities as well. As shown in previous chapters, the mismatch and unsatisfied demand for residential units presents serious problems and affects the livelihood of many people. Hence, this study's thesis is that recommendations must be programmatic with respect to marginality as well as physical with regard to self-help.

B. - Prospects for Latin American States

Housing the vast majorities in Latin America can only be accomplished through a systematic planning of both, economic machinery, as well as, human resources. The world economy is extremely interrelated, and as such, the Southern Hemisphere has become an economic dependent of the developed world (1). Recessions in the economies of the dominant nations produce heavy repercussions on their weak partners, that have a limited number of basic resources to manage as buffers in an economic crisis. Today, most Latin American nations have no possibilities of servicing foreign loans. One of the causes of accruing such loans, although by no means the salient motive, has been low-income housing. But, today the housing problem is more critical than years ago. Hence, attitudes had to change from the construction of large scale projects, reflecting a non-existential living condition, to squatter settlement upgrading, a desperate measure to reduce social tension.

The following recommendations are predominantly political and not technical or architecturally oriented. However "Politics" is the art of the city; the latter being the main theme of Urban Design. They cover two scales of recommendations: the national and the local.
It appears that the only viable approach is a realistic analysis of resources and a sensible use of them. At a national scale there are several strategies that would help deal with the problem. The first and the most urgent need is to modify the demographic trends. Conditions must be created to diminish considerably migration to the dominant city. Ideally, a reverse migratory pattern, encouraged by rural reform, should be established. Such new conditions would require the creation of jobs in the rural areas, as well as, the social infrastructure to support it. These goals can be accomplished with the reformulation of land reforms and the creation of stimulants to establish small industries related to agricultural products, such as the pre-processing of food. The benefits in the housing field would reside in the low cost of the rural land, the possibility of applying appropriate vernacular types, the introduction of enhanced local building technics, and corresponding "urban" models.

Allied to the rural development, favorable conditions must be created to develop middle size cities. Intermediate cities may be made more efficient in the provision of services, such as water, sewage drainage, energy and transportation. The new poles of development can be induced by tax shelters and import-export advantages for those industries that will settle at the selected locations. At the same time, the government would have to create a "land bank" to prevent excessive land speculation, that makes real estate prices so prohibitive in the metropolis (2). These measures would tend to produce a reduction of the demographic pressures upon the capital city, therefore, alleviating the existing living conditions and decreasing the accelerated deterioration.
At a local scale housing conditions in the capital city can only be modified with some major structural changes. Many experts share the idea that the first measure is to stop excessive land speculation (3). The creation of an official "land bank" would be an approach towards meeting that goal. Secondly, the distributional wealth must be more equitable, so that the majority of citizens can become realistically involved with bank loans, as well as, reasonable official housing plans. Adequate financing would be the third item, but it can only be accomplished with the creation of a prosperous economy. Generally this would mean a more diversified economic structure, and not the chronic dependency on one key crop (4), with its price fluctuation. This is necessary to create a positive import-export balance so necessary to furnish a genuine housing fund independent of foreign loans.

Reviewing the ideology of most Latin American political parties or military dictatorships in power, it is rather hard to be optimistic about any progressive or evolutionary structural changes at a national scale. Nevertheless, an architect should be a participant in the process of urban environmental change. The possibility of creating an alternative housing solution lies in the realm of the architect. The architects role can encompass the interpretation of socio-economic needs as a means for re-evaluating current physical approaches of social service structures non-existent for the most part up to date, as exposed previously in this study (mainly as feasible structures intended for temporary and transitional housing for the poor, and other social services), the determination of truely minimal but adequate building codes, the creation of performance standards for materials, and the incorporation of modern building technology compatible with cultural standards.
Whatever governments have been accomplishing or not accomplishing, it is inevitable that the greater part of future urban growth in developing countries, will have the characteristics of informal settlements; most work being carried out by the people themselves. However, it is possible for this growth to take one of two forms. Without positive government intervention, taken in support of the people's own efforts, such growth will continue to be unplanned, uncontrolled, illegal, unhealthy, difficult and costly to upgrade, and unbalanced, thus adding to already massive existing urban problems particularly within major settlements.

Alternatively, if such growth forms part of official human settlement and development policies and programs, prepared in advance of need, it can be planned, controlled, legal, healthy, easy to upgrade with the passage of time, and balanced, forming a recognized and accepted part of communities. The former approach would consider that housing should not be seen in isolation but rather as part of a multi-faceted social-economic integration process. Projects under such a code become multi-sectoral economically and socially, involving: temporary and transitional housing and even permanent housing, community development, income supplementation and delivery of basic social services. Hence, the projects would be managed by a multi-disciplinary team of professionals in active collaboration with local communities. The program would involve socio-economic development of the individual and the community as a whole by promoting cooperative organizations within a variety of productive activities.

Simultaneously, temporal and transitional housing programs are mandatory initiation practices that would encourage, good housekeeping abilities leading the participant towards his own autonomy and a
participatory role within society and the economy. The individual motivation and collective strength resulting from a participatory method of obtaining housing becomes a useful starting point for addressing other problems of the community.

Such a positive role of government would promote the intermediate agencies to extend their efforts beyond advocacy on behalf of the poor, by negotiating between people and authorities, organizing people and mobilizing resources. These activities should extend to include information and experience sharing with other organizations of a similar nature and particularly with those who make policies and design programs.

Considering the critical condition that exists, the most important proposal would have to deal with comprehensive strategies appropriate to the circumstances of each country. Thus understanding the local housing situation will help address and work with the housing problems in the future. The previous case studies illustrate the diversity of the local situation in Bogota, Colombia. Thus, a comprehensive approach that searches to achieve and provide reconciliation options for the urban poor was the emphasis of a proposal derived from the analysis.
NOTES


(2). Alan Gilbert and Peter Ward, Housing, the State and the Poor Cambridge: Cambridge University Press, 1985, pg. 61.

(3) Ibid

BIBLIOGRAPHY

GENERAL SOURCES.


**THEORETICAL SOURCES**


**STRATEGIES AND POLICIES FOR DEVELOPMENT.**


**ALTERNATIVES IN HOUSING PROVISION.**


**STATISTICAL DATA &/OR TECHNICAL REPORTS**


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PROJECTS AND SOLUTIONS.


EVALUATIONS


