

Chapter 25

Community Planning in Developing Nations: Land Use Planning, User Participation, and Appropriate Technologies

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Often, there is a basic misunderstanding of what the real housing needs are, as perceived by the designer and, therefore basic assumptions fail to provide adequately for the individual's wants and desires. When dealing with the needs of those who live in the Third World, there is frequently an arrogance associated with the "helper" towards the "helpee." A corollary to this is an attitude that says, "I know what is best for you," often exhibited by designers as well. Many times, the techniques proposed by aid givers are not within the economic means of those they are intended to protect or help. This reflects a lack of understanding on the part of the "helper," resulting not only in the use of unsuitable materials but also relying on inappropriate technologies.

We will use the community of Highlite View, a squatters' settlement in the hills above Kingston, Jamaica, to explore the issues of user involvement in housing design, appropriate technologies and materials, and community planning. Many of its residents are single mothers faced with raising a family and receiving very little outside help. An interesting phenomenon took place here, one in which the women assumed the role of community leaders in a male-dominated society, and have become the driving force behind the decision-making process. The situation at Highlite View emphasizes the need for First World countries, when offering assistance, to develop appropriate building technologies that are sympathetic to the vernacular architecture of the area. In this case, a mother and her children needed to be able to assist in the construction of the dwelling and to undertake the periodic maintenance with minimal assistance from others. Our involvement in this project has provided us with a rare insight into this predicament.

Designer Biases

When discussing the issue of adequate housing, it is imperative to understand the needs of those who will be the eventual residents, whether in this country or a Third World nation. Many contemporary designers come from a middle- to upper middle-class background. As a result, their aspirations, perceived needs, and desires are often much different from those of a single mother who is trying to provide for her children. Added to this socioeconomic disparity is the fact that, historically, most designers have been white and male, resulting in yet another barrier to understanding the needs of those for whom they are designing, the ultimate user. The designer bias problem experienced in Jamaica, discussed later in this paper, was not due solely to cultural differences between countries. Within the United States, nowhere is this difference in backgrounds and

designer bias better exemplified than in the design of inner-city housing and parks. The public housing projects which had to be demolished at Pruitt-Igo are a well-known example of a complete lack of understanding on the part of the designers of the needs and living situation of those for whom they are supposedly designing living spaces.

A further example of this chasm between the designer's beliefs and those of the true client, the resident, is best portrayed by the history of an urban park designed by a group of white, upper middle-class suburbanites for an inner-city neighborhood. Given the success of the exploratory playgrounds found in their suburban communities during the late 70s, the designers decided, without input from the "real client," that this type of park would be the most appropriate solution. Sadly, the inner-city residents perceived the final product as a reflection of their own plight. Many of the elements used to construct the playground were recycled materials, i.e., tires, barrels, large timbers, etc., which the community equated with junk. These same types of elements were already prevalent in their neighborhood, (i.e., abandoned automobiles, remnants of buildings, etc.). In the end, someone burned the playground to the ground. These two examples serve to stress the necessity of the designer fully to understand the needs and desires of the TRUE clients, the final user, not some domineering public agency.

Global Housing Issues

A critical problem facing many nations today is that of meeting the need for new housing. It has been estimated that the demand for additional housing, worldwide, would necessitate the construction of 53,000 new houses per day to bridge the gap between supply and demand (Hamdi, 1991, p. 4). This situation has far-reaching implications for many countries, given the fact that to provide conventional, formal sector housing on this scale would consume 25–50% of the gross national product of most countries in the world today. To meet this continuing demand, new methods for providing affordable, adequate housing need to be developed. An integral part of this process entails defining not only the needs of the population but determining minimum building standards for the different regions of the world experiencing increased growth.

The Case of Jamaica

To explore these issues, we will relate the situations we encountered while serving in Jamaica in the U.S. Peace

Corps. Both physically and culturally, Jamaica is a very different place from that which is portrayed in the American tourist brochures. This is a society in which there is a huge disparity between the many poor and the few very wealthy. Beyond the well-known beaches, in the mountainous countryside, many people live in wood and zinc shacks and children carry their shoes to school so they don't ruin their only pair. It is a culture in which many families are headed by a single mother, women who must provide for all the needs of their family.

Jamaica is an island located in the Caribbean basin with a land mass of approximately 4,244 square miles, an area slightly smaller than the state of Connecticut. This is a country with a diverse population of 2.2 million people whose ethnic backgrounds include European, Middle Eastern, Chinese, and East Indian, but of whom the majority come from African ancestry. This diverse background is best expressed in the national motto "Out of many, one people." As in this country, there is a disproportionate number of blacks who occupy the lower socioeconomic classes, and a well-defined class system aligned with or seemingly based on ethnicity. Many single mothers in Jamaica are from an African heritage.

The physical character of the island consists primarily of a mountainous terrain, half of which lies at or above 1,000 ft. above sea level. There are more than 100 hundred rivers and streams flowing from the mountains, carving their way through the plains and finally into the ocean. As a result of serious deforestation across the island, the fisheries just off the coast have been seriously damaged due to the increased sediment transported by the rivers. The Jamaican Agricultural Ministry estimates that throughout the island areas that have been cleared, either for agriculture or settlements, lose approximately five tons of top soil/acre/hour/inch of rain (May, 1988). Evidence of this claim can be found whenever it rains in the "rivers of mud" that flow from the mountainsides.

One of Jamaica's most hospitable natural characteristics is its climate, a climate very forgiving to the homeless and those with substandard housing. Temperatures range from the 80s to the 90s throughout the year. The rainy seasons (of which there are two, May-June and September-October) are the most destructive times of the year for land that is cleared. As discussed previously, erosion is a very serious problem facing this nation, resulting in very complex planning issues which will be discussed shortly. Furthermore, due to the rainy season, there is a greater need for satisfactory housing

because of the dampness which causes increased illnesses.

In the sixteenth century, when Europeans discovered the island, they found a peaceful and healthy native population, that of the Arawak Indians, who numbered over 100,000 people. In less than a century, the new inhabitants from Europe managed to decimate the Arawak nation completely. This genocide was the result of both the introduction of disease and the hunting of the Arawaks for sport. During the next 400 years, the Europeans took the most productive and flatter lands for the development of plantations to grow sugar cane, bananas, and coconut. The attitudes of these "absentee landlords," who never had any intention of settling on the island permanently, set a precedent that would shape future attitudes toward the island's natural resources. In addition, since the European land barons confiscated all of the most productive lands, the other inhabitants of the island, mostly slaves from Africa, and indentured labor from India and China, were left with the marginal areas that should never have been cleared or developed for subsistence farming. When slavery was abolished in the year 1834, many of the emancipated slaves moved into the mountain areas and set up small farms. The vast majority of present-day Jamaicans are descendants of slaves who worked for the British land owners.

Current Land Use Concerns

This historic pattern of land ownership has led to the current situation in which a very small number of people own over three-fourths of the most productive lands in the country, again, leaving only the marginal areas for the majority of the population on which to eke out an existence. The land ownership patterns are the result of the deeding of properties before Jamaica obtained its independence from Britain in 1962. Less than one hundred years ago, Jamaica was still an island paradise, with dense forests covering the mountainsides. In recent years, large areas of mountainside have become barren slopes due to deforestation and the ensuing erosion. Concern has been raised that Jamaica could follow the same disastrous path that Haiti has taken, the result of which is that there are now large areas of desert unable to support plant life. Haiti's experience is the direct result of deforestation—"in order to survive people have cut down 91% of the island's trees" (Callwood, 1988). The resulting erosion depleted the topsoil over much of the island so that large areas can no longer support plant life.

Socioeconomic Conditions

As of 1988, the average Jamaican family, many headed by a single mother, consisted of 4-5 people. Sadly, there is a current trend where the father of the children will leave the family to fend for itself, creating a poverty class of young, single mothers or grandmothers with small children. Often, a grandmother will raise the grandchildren while the mother is away at work, either on another part of the island or in another country. This has resulted in a situation not dissimilar to conditions we find in many large cities in this country today. These women often find themselves living in substandard and unsafe housing. This socioeconomic group is often not represented in the political arena nor does it participate in funded programs sponsored by countries such as the U.S., Canada, or Great Britain.

Currently, there is a great deal of pressure on both public and private land by the disenfranchised, those who can neither afford to own or rent a dwelling place, where whole communities of people have been drawn together by the common thread of homelessness. Frequently, these people will erect a shack on government or unattended private land, and if they live there for seven or more years, it is very difficult to evict them legally. In 1989, the ruling government was at odds with itself about how to react to squatters using public property, and turned a blind eye to the situation. Usually, the people inhabiting these settlements are the working poor, those holding jobs in places like Kingston or one of the resort communities but unable to afford the high rent demanded by the landlords in these areas. In addition, the ownership of land is highly prized and a sign of status; therefore, Jamaicans will go to great pains to procure a site for a dwelling. The pressures on squatters' land are great. Besides using the land for their housing, many families must raise some type of crop to supplement their income. It has been found that it takes approximately one-quarter acre of land to sustain one family (May, 1988). But this agricultural use also contributes to the erosion problems facing the island today.

Minimum Building Standards

In Jamaica, as is happening in many Third World countries, there is a dramatic move from the rural areas to the urban centers. As a result, there is increasing pressure on existing housing, creating a need for new development. In many communities around the world,

the use of a "quick fix," deliberate construction of substandard housing, is really only creating a future slum, defeating the basic purpose of housing. Minimum standards must be adhered to at all costs to avoid or these future slums (Payne, 1977, p. 65). Building codes and design restrictions in many Third World countries are rarely geared toward the needs and available resources of either the builder or the eventual inhabitant. They generally tend to emulate those standards found in more affluent countries (Payne, 1977, p. 201). For example, the "requirements in a New Delhi low-income housing competition stipulated separate bathrooms and W.C.'s, something that is not even required in official housing in Great Britain" (Payne, 1977, p. 202). This typifies the lack of understanding on the part of the designer of the needs of the eventual user.

A number of case studies in Third World communities have explored the notion of soliciting advice from the residents in the slum areas during the early phases of urban housing programs and have come to the same conclusion that including the poor in the decision-making process greatly increases the potential for success. Geoffrey Payne, in his study of the Rouse Avenue settlement in New Delhi, India, found that the vast majority of the residents interviewed to be quite capable of developing or planning their living environment. This finding supplants the notion that the "designer knows best" and reinforces the concept of self-help or user involvement in the determination of one's own destiny.

New Concerns

Day Care

Problems are beginning to appear in Third World countries similar to those that developed nations have been grappling with for years. For example, with the disintegration of the extended family, there is a greater need for some type of day-care system in many developing nations today. Third World countries are just now trying to deal with this issue, which, sadly, the U.S. has yet to resolve: the need for an equitable national day-care program that provides for the needs of all families, not just the upper middle class.

Security

Security in one's home, as well as in the public spaces, has become an increasingly more urgent issue in many cities worldwide. Many Third World countries are now facing rising crime rates and increased drug use that is

changing the social fabric and character of these societies. In the U.S., when middle-class neighborhoods begin to deteriorate, the residents either move further out into the suburbs or fortify their homes with security systems. This is a luxury that few residents in developing nations can afford. What is the appropriate response by the designer to these phenomena? Many Jamaicans live with the fear that their unsecured homes are easy prey for thieves. It is not uncommon for robbers to cut through the walls of a stick frame structure with a saw to gain access. As a result, the housing type of choice is a concrete-block structure with iron bar grates covering all windows and doors.

Appropriate Technology

Many developing countries face the problem of inappropriate technology; that is, when countries such as the U.S. offer assistance, it is often in a form which the host country is unable to use. Furthermore, as Payne notes:

Recent developments in this field [housing] now make it unnecessary (and undesirable) to continue applying capital intensive, inappropriate, and expensive techniques in the field of housing construction. Such technologies are not only beyond the resources of most developing countries but frequently represent a source of environmental pollution and a high degree of energy waste. (Payne, 1977, p. 205)

As a result, these projects are doomed to failure even before they are implemented.

The following case studies epitomize this notion that designers and aid organizations are often misguided in their assumptions concerning their client. The first was a program sponsored by both the U.S. and Canadian governments to help residents in the Caribbean Basin make their homes more hurricane-proof. The program was entitled "GO STRAPLESS TODAY, TOPLESS TOMORROW" and the solution, according to the building consultants who studied the problem, was to install galvanized metal straps tying the roof joists to the top plate. The problem with this strategy was that the recommended piece of hardware (wood connectors) such as joist hangers or hurricane anchors (twist straps) cost \$.89 to \$1.50 in this country, an acceptable cost in any building construction. However, in Jamaica the same hardware would result in great financial hardship to the average home owner, given the cost of living and the average rate of pay.

Attempts to find other more appropriate solutions included the use of tin snips to cut the straps from any

available metal, e.g., sheets of zinc-plated metal used for roofing. Here again, the dilemma was ready access to the required tools. A pair of tin snips necessary to cut the heavier metals would cost up to \$100 Jamaican, totally out of the question for the average family. Eventually, it was found that a can, such as for vegetables, could be torn open and used as a pseudo hurricane strap, a technique more in line with the economy and technology of the country. This solution is an example of the approach Ortega *et al.* suggested, that of "exploiting whatever resources are at hand and applying basic ingenuity to exploiting their potential" (Payne, 1977, p. 205). Ortega's notion should be the basis for problem solving in most, if not all, design or planning situations, since it implies that the most appropriate solutions should employ the proper technologies and techniques for any given circumstance.

After Hurricane Gilbert: Aid with Conditions

As previously discussed, designer bias is an insidious threat to the design process, often resulting in failure of a project. This need to exert control often accompanies offers of aid as well. Historically, those giving aid to Jamaica have imposed conditions that disregarded the needs and desires of the people. There is a history of having been coerced into embracing First World ideas regarding their way of life, from the crops they should grow to building types they should use to the method by which they should run their schools.

Hurricane Gilbert swept over the island on the morning of September 12, 1988. This was the strongest hurricane ever recorded in the Northern Hemisphere. It caused a catastrophe of monumental proportions, resulting in severe damage throughout the island, washing out many of the roads and destroying large numbers of buildings. There was an outpouring of international aid, but much of it came with conditions attached. For instance, a Canadian philanthropist hired an architect to design replacement housing for the people devastated by the storm. This designer, who was trained and lived in a very different climate, culture, and socioeconomic situation, was expected to develop the most appropriate housing type for a foreign situation. A prevailing attitude among the "helpers" or aid-givers was that "any housing was better than none"; "I will help them," an attitude that does not recognize the needs, desires, or rights of the recipient. Based on the architect's design, the philanthropist arranged for donated building materials to be sent to Jamaica. He then offered to help rebuild the community, but the design decided upon was a stick frame structure clad with fir siding (over stock and

seconds) donated by a wood products firm. The problem? As mentioned earlier, security is a major concern and this type of building is easily broken into by cutting through the wood siding with a simple hand saw. Furthermore, the preferred building type (concrete block) is able to sustain the impact of a hurricane with less damage, making it more suitable for the climate. The residents expressed their concern to the philanthropist, concerns that were echoed by volunteers who had been working on the island for sometime. The philanthropist became incensed at the notion that his design was inappropriate for these conditions, proclaimed that he would not change his plans, and then took his aid elsewhere.

A Squatter's Community in Jamaica

We will use the experiences of Highlite View, a squatters' community outside Kingston, Jamaica, as a vehicle to explore the issues associated with housing and planning. Many people living in Jamaica are so poor that not only is owning land or a house out of the question, but they cannot even afford to rent a home. As a result, there is a growing trend toward squatter settlements. As mentioned earlier, if an individual has lived on a piece of land for more than seven years, it is very difficult ever to evict him or her from either private or public property. Many of these communities have a disproportionate number of single mothers, resulting in a new set of needs associated with this type of development. These developments need to deal with many of the same issues that are confronting communities throughout this country, such as affordable, safe day-care and secure housing. Something atypical is happening here; the women are taking control of the planning and decision-making process, a role traditionally reserved for the male leaders of the community. A small core of women, assisted by a British community development person, is taking responsibility for making the decisions that affect their community. They confronted a number of potentials and problems. A cornerstone of the community was to be a community center that would include:

Day-Care Facility

Many of the single mothers must commute to various areas in Kingston and often have no one with whom to leave their children. As a result, there was a great need for a community day-care center where several of the mothers who do not work in the city could take care of the children who live in the community.

Concrete Block Production

An area needed to be set aside for the production of concrete blocks used to construct new housing in the community. As mentioned earlier, the most secure homes are made of block, and since many of these women commute to work, their homes were easy prey for thieves. In addition, the blocks' price made their purchase from local manufacturers out of the question.

As an aside, we would like to point out that the traditional building technique employed in these types of settlements was wattle. This technique involves the use of poles or sticks interwoven with slender vines or branches. Stones are then worked into the weave. Finally, multiple layers of concrete are applied to create an exterior surface. The stones worked into the wall provided additional security from both intruders and the elements. Sadly, this type of structure is no longer prevalent due to the stigma associated with it, since it was widely used by the poor and the fact that only a few of the older men left in the country still know how to do it.

Biogas (Methane Gas) Production Facility

There was an interest in developing a biogas facility with a 4,000 gallon tank for storage. It was to be constructed of a wire mold frame and then rendered with a thin wall of cement and used to produce biogas (methane gas), derived from manure, to provide a ready fuel supply for cooking. It was believed that the proceeds from the gas could be used to supplement their incomes.

Community Tree Nursery

Several of the community leaders wanted to develop a tree nursery to grow fruit-producing trees to be planted throughout the immediate area to supplement their diets. This involvement in the planning process is an important departure from historical attitudes which fostered a dependency on aid from other countries, not only money, but also advice and decisions. A prevailing attitude has developed in Jamaica over the years that stresses the need for aid in order to help oneself, emphasizing participation, not dependency. These women believed that they could and should take a responsible role in planning their futures. This is an uphill battle in a male-dominated society where women are not typically allowed access to the resources necessary to complete such projects.

This male dominance prevails throughout all levels of the society. For example, after Hurricane Gilbert, many homes were destroyed in a mountain community northeast of Kingston. One project involved the rebuilding of houses for the elderly and infirm with funds from foreign aid organizations. In one instance, an elderly woman in her 80's, known as Auntie, lived in a zinc structure in very poor condition. She was practically bed-ridden and had a number of health problems, including a severe case of diabetes resulting in very poor vision. Her home, for all intents and purposes, was destroyed during the hurricane. When locals tried to build a new block house for Auntie, her son, who lived in Kingston, flatly refused. Furthermore, he had no intention of improving her living condition, claiming other commitments necessitated his attention. He was simply too busy to help and did not want anyone else to help her either. The reason for this was rooted in male pride and by the prevailing traditional attitudes "that it was up to the men of the society to make this kind of decision and take care the women." It must be noted that the offer of help came not from outsiders but rather, from locals of the community who wanted to help. Unknown to him, only the funding was to come from outside sources. This is another example of an injustice against women by society. The root of the problem in this case was not designer attitudes but an underlying collective male ego exerting control over the destiny of women.

Planning Problems at Highlite View

Soil erosion was another serious problem facing this community. The prevailing mentality in this society is "cleared land is good land" and that included the area around one's house. The problem is that cleared land has nothing to hold the soil in place and, as mentioned previously, this creates a serious erosion problem. The immediate hazard to Highlite View was that of mud slides, which threatened many of the homes already built on the steep slope of this squatters' community. Erosion due to slope clearing had already washed out the major road and a number of trails in Highlite View.

The people had previously tried employing their own method of erosion control called tire bonding, which entailed building retention walls made of old tires (abundant throughout the island) to hold back the encroaching slope. The tires were fastened together with old steel cable and then filled with rocks and soil and planted with deep-rooted trees, such as ackee and sour sop. Tire bonding stops erosion temporarily at the

original trouble spot but typically can worsen the problem in adjacent areas, causing even greater threats to the inhabitants. The only real cure to this problem was to reforest the slopes above and around the houses. Sadly, there was not much support for this plan of action.

Carrying Capacity

Good management for the squatter communities is essential but hard to enforce due to a shortfall in the supply of land given the demand. Studies have shown that this problem is only getting worse worldwide (Hamdi, 1991, p. 3), despite all the innovations and investment with regard to providing housing for the poor. Determining and enforcing density limits in a squatters' community are very difficult for several reasons. First, none of the home owners typically own their lot, so they cannot tell others looking for a place to live that their community is "full." Secondly, there are usually no zoning regulations governing these areas, no government enforcement, and, as a result, no control over how many people can settle in the area. At Highlite View, despite early squatters, siting buildings with adequate setbacks between houses, as densities increased, houses were put in between the existing homes. This led to increased erosion, due to runoff from roofs, and more extensive trail systems that threatened the community as a whole.

So what is the point of discussing Highlite View? The traditional strategies associated with improving the living standards of those in need, whether in this country or in a developing nation, need to be drastically altered. The women at Highlite View needed outside assistance but did not need someone to come in and take control of their destinies. They required a "consultant," someone who would provide expertise in a problem area and would recommend the best course of action. The critical issue here is that the decision-making power remains in the hands of the community.

Conclusions

We believe that a common agreement should exist amongst all rational design professionals concerning the value of "user involvement" in the design and planning process. Sadly, when budgets are tight and scheduling is a problem, this is one of the first elements to be cut. And what a travesty. How can we develop the most appropriate solution to a problem without understanding all the issues? We find a similar mentality with the aid organizations; the experts know best and asking the

recipients what they want and need is of little value. Another problem occurs with the economies of scale. It is much easier in most scenarios to get a very large grant for development, hundreds of thousands to millions of dollars, than to obtain funding for small communities to improve their living standards. This mentality serves only to emphasize the lack of respect for those who have little political power, whether it is a single mother in a developing nation or in this country. Designers and planners need to take a leading role in defending the right to participate by those who are affected by these decisions.

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