AN ALTERNATIVE HOUSING STANDARD FOR DEVELOPING COUNTRIES:
GHANA AS A CASE STUDY

by

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Ghana As a Case Study

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Kwaku Addae Appau

Submitted to the Department of Urban Studies and Planning in January, 1984, in partial fulfillment of the requirement for the degree of Master of City Planning.

ABSTRACT

Ghana's housing problem reveals symptoms similar to those of other developing countries experiencing rapid urbanization. Ghana is experiencing the same migration towards the cities; rise of a renter class; growing disparity between the cost of urban shelter and what the worker can afford; rising pressures of housing shortage and overcrowding; diminishing ability of the urbanizing population to build housing with its own hands as in the old rural environment; increase in squatting and a newly emerging insecurity of urban tenure; conflicts over titles as new forms of tenure replace the old. Finally, there is the same increase in the role of government over land and housing operations which manifests itself in the imposition of housing codes and standards upon the people. These codes, mostly borrowed from the advanced countries have often disregarded local climatic, cultural, technical and economic conditions.

The haphazard borrowing of other countries' codes and standards has proven to be one of the most costly aspects of building code practices. The codes and the standards become too costly for the urban marginal masses to comply with or too impractical to follow; violations are inevitable and the codes and the standards either become meaningless or they limit housing progress. Hence, many experts on housing for developing countries call for No Housing Standards partly because of the above-mentioned dilemma. Whilst the author is also skeptical of the wisdom of borrowed regulations, he however, disagrees with the experts, and rather calls for a Cultural Housing Standard based upon the traditional building practices of the people.

Thesis Advisor: Lloyd Rodwin
Title: Ford International Professor in Department of Urban Studies and Planning
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My particular thanks are expressed to Professor Lloyd Rodwin, Professor Lisa Redfield Peattie, and Dr. J. Mark Davidson Schuster for their counsel in preparing the materials and their constructive criticisms and suggestions which helped to make this topic worth its present status.

I am also very grateful to all the teaching staff and workers of M.I.T. (especially the School of Architecture and Planning, the Financial Aid Office, and the International Students' Office) who had to bear with me in a strange circumstance to finish up my studies. I would like to say "Aseda"* to them.

I am indebted to Carol, Jackie and Mary for their prompt response to type this thesis.

While thanking all the contributors for their most acceptable cooperation, I excuse them entirely for error of any kind which may be found in the text.

* "Aseda" is an Akan word expressing a kind of profound gratitude which no English word can express properly.
INTRODUCTION AND SUMMARY

The provision of housing and related facilities form an essential part of any country's socio-economic development. In most developing countries, the central and city governments have established official building codes and standards, that were borrowed in toto from the advanced countries to regulate the cost of houses of good quality with suitable environment. Yet, the official general philosophy of 'good quality with suitable environment' is being challenged increasingly by the people whose interests the standards are supposed to serve.

Many housing experts for the developing countries call for No Housing Standards. They have some arguments in mind. The borrowed high western codes and standards serve as one of the most costly aspects of building practices because of scarcity of resources. The codes either become too costly to comply with or too impractical to follow. Violations are inevitable and the codes either become meaningless to the majority of the poor or limit housing progress. I also being skeptical of the wisdom of some of the official housing standards, disagree with the new school of thought for No Housing Standard, and I call for a Cultural Housing Standard based upon the traditional building practices of the people as a more appropriate alternative solution.

Related closely to the housing standards, are some propositions which, as I see it, have dominated the thinkings, writings and plans of many experts and observers in Europe and the U.S.A.

One sole issue has overwhelmed research amongst the foreign experts dealing with urban planning issues in the developing countries. This is the issue of slums and squatter settlements. Apparently, a dominant
picture has surface from such activities concerning research and urban planning. The general outline of this picture which can be termed the conventional belief, is summarised as follows:

The shanty towns support the welfare and well-being of the urban poor. These settlements are a form of pioneering and a triumph of self-help and must be regarded with respect. The above picture has also been the basis for proposing that the phenomenon of shanty towns, if and when allowed to developed according to its own preconditions, will be self-resolving in the long run.

I disagree with some of the views. The picture somehow does not conform with my own conceptualisation of the situation I have experienced in practice and research. I, therefore, give my own opinions on some aspects of the conventional picture as revealed by some detailed research studies in some urban areas of West and North Africa.

Chapter One deals with housing problems and relation to standards. The cost of the materials imposed by the official housing standards is dramatically shown in a dialogue between an urban builder and a city official. It is then followed by an analysis of housing problems in the rural and urban areas -- frequent shortages of building materials as a result of the country's heavy reliance on importation of building materials for housing; thus, exerting a great pressure on the country's already constrained foreign exchange position. The effect on the rate of urbanization on urban housing is also highlighted.

Chapter Two identifies the Target Group -- the marginal urban masses and their housing needs using empirical data on demographic characteristics, income and expenditure, home ownership, access to urban infrastructure, etc.
Chapter Three deals with housing standards and the building industry. The private sector's (formal and informal) performance in housing is treated in detail showing its contribution in the national housing stock supply. The public sector's performance in housing supply is then discussed in terms of its responses to the ever-increasing demand for affordable housing by the urban low-income groups. The result of the public sector's inability to cope with the housing demand as a result of sky-rocketing in building costs is detailed, and its impact on housing for the urban low-income group is synthesized.

Chapter Four documents the discrepancies and the faults of the present building codes and standards showing the degree of injustice they inflict on the urban poor in relation to building materials and style of architecture, research, upgrading and site-and-services, architects' role.

Chapter Five compares abolishing the housing standards to a Cultural Housing Standard. No Housing Standards with its main point of scarcity of resources to meet all the housing needs of the people in presence of impractical borrowed codes and standards are discussed coupled with the work of Witold Rybczynsk's views based on a U.N. experts work showing increase benefits of such traditional materials as mud being illusory. On the other hand, a cultural housing standard would hinge on cultural identity besides affordability and availability. Recommendations then follow with main emphasis on research into traditional building practices. Context of the Cultural Housing Standard is discussed. Implementation of the new regulation is treated with regard to their formulation, demonstration houses and advocating for retention of the present codes and standards as a national reconciliation for the sake of
those who can afford high western standards. Possible problems with the proposed Cultural Housing Standard are treated, pointing out instances where it would not be practicable.

The Conclusion dwells on how building codes should not be fixed, but must be subject to review, especially in the case of decent cheap dwellings in the developing countries plus the fact that given lack of resources, governments can help the urban poor by reducing standards to a realistic level, legalising "squatter settlements" depending upon the nature and making them more habitable, providing small ready-serviced plots of land coupled with mobilisation of the people to participate in improving their own environment.
CHAPTER ONE

Housing Problems and Relation to Standards

There is often a serious mismatch of what people want or need and what is available. The policy of housing the most needy is not always compatible with that of replacing the worst houses, nor with the policy of national minimum housing standards. There are the presumed needs of future users of housing who, the assumption runs, would require higher than current minimum standards. The current planners who claim to speak for the needs of future users are an important factor in worsening the housing problem in the Third World.

In fact, housing ultimately is often thought of as a product of people's financial capacity, the location and type of employment open to them, and the nature of available transport network. But in Ghana with other developing countries, it turns out that what is more important is the cost of materials imposed by the official housing standards. This conflict is dramatically revealed in the following dialogue:

Dialogue

I jumped over a big open gutter. I looked left and right for my next move. I finally made for an alley in an old neighborhood. I was doing research on traditional building practices in relation to housing in an old neighborhood in the city of Kumasi-Ghana. The 100-meter-long alley led me to an open space surrounded on all sides by old houses of mud construction. The walls had become dark green from rains streaming down them in the rainy tropical weather although when the walls were newly built, they were whitewashed, as I could see from the top-most parts of the walls protected from the rains by the eaves of the roofs.
The open space was about 60 x 70 meters square. It had three shady trees which had been pruned occasionally for the branches to grow horizontally. The trees were intentionally planted at equal distances from one another, forming an equilateral triangle. The branches of the three trees had interwoven into one another, forming a green umbrella covering the greater part of the open space. The green canopy matched the green walls of the old building around. I saw an old man sitting in a rocking chair, made of cane, in the cool shade. The chair was moving forward and backwards while the old man's head too followed the same pattern of movement. Although the old man was a little bald, he had intentionally razored off the rest of his hair to the skull. He had rubbed some ointment on the hairless head. The head gleamed any time it caught sunshine rays penetrating the canopy of the trees.

He was dressed in kente, Ghanaian native clothes, wrapped loosely on the body. Sitting opposite him was a building inspector from the City Council. He was well dressed in western clothes, a black suit coat and brown trousers. He had a nice brown tie and a white shirt under the coat. There were six young boys standing around the old man and the building inspector.

The boys were listening attentively to the dialogue going on between the old man and the building inspector. One of them raised his head and looked at me. I was smiling. He nodded his head in response. Oh, Yes! He had seen the game I was playing. The old man's head was too tempting not to laugh at. I took a few steps towards them.

I heard the old man telling the building inspector, "Look here!", pointing to his own house, "This building was put up by my father. It is
a mud house, but well-maintained." The building inspector laughed when he heard the words "well-maintained," looking at the dark green walls. The old man continued, "It was built with no written standards such as you have in your hands now. But it has performed very well since I was born. You see, all these buildings in the neighborhood were built without what you now call 'Housing Standards.' Standards for what?"

The building inspector politely responded. "Well, old man, I have not come here for the buildings in the neighborhood. I am here for this one under your nose. The one you are putting up."

The old man quickly narrated the recent tragedy of his friend from whom was extorted $600 by a building inspector for overlooking a minor city council building specification during the construction of his new house. He then fired back aggressively, "To do what?"

The building inspector replied, "To see to it that the construction is carried out according to the City Council's specifications!"

"Ha, Ha, Ha, Ha!" the old man burst out with laughter. He suddenly stopped laughing and put on a serious face. He questioned the building inspector. "Have you bought any cement or iron bars for me to build this house to please your City Council?"

The building inspector could not contain himself. He impatiently burst out at the top of his voice, "Look, old man, you must build this house according to the standards set by the City Council! Understand?"

Bluffing and teasing, the old man spoke softly, "Hey, Krakyi! Why are you people nowadays too much booklong? This house, when they were concreting the floor, were you here? How can you tell whether there was reinforcement or not? What about when you leave here?"

The building inspector admitted, "I don't understand."
The old man continued, "At this time when we do not have enough cement and steel in the country, you tell us to build our houses with these materials. They are scarce in the market. When you do find them, they are too expensive -- beyond our means. Look! When the white man was here, he did not stop us from building with our local materials and skills. Why are you people so troublesome?"

The building inspector then patiently explained to the old man that the housing standards set up by the City Council were to guarantee a comfortable life for the future residents.

"Hmm! Hmm!", the old man murmured while nodding his head. The midday temperature was about 90 F. He put on a smile and stopped. He then looked intensely into the eyes of the building inspector. Silence fell for a minute. He twisted his mouth. Suddenly and aggressively he shot a question at the building inspector -- the straw that broke the camel's back: "Comfortable life, eh?", the old man asked. "Look at yourself. Do you feel COMFORTABLE in a black coat with tie in such scorching sunshine? Is that what you call environmental comfort? Look at me, in a native dress to match the harsh weather. How fine I feel!"

The boys standing by could not control themselves. They burst out triumphantly into thunderous laughter. They yelled, "Old man, you win! You win! No challenger!"

The building inspector's eyes suddenly shot red. Yes, he had been cornered. His seat became too hot for him. He stood up. He opened his mouth to defend himself but no words came out. One of the boys pointed at the half-opened mouth and the rest burst into laughter again. I could not restrain myself. I joined the laughing spree. The building inspector looked at me. I stopped laughing immediately, fearing he might
pounce on me to settle his score, since I was the only stranger around.

As if he were not contented, the old man piled more questions on the building inspector. "Hey, Scholar! I know where you live. You live in a mud house -- the walls well-rendered with cement plaster. N'est-ce pas? (The old man wanted to prove that he had lived in a French-speaking country before and was therefore, more knowledgeable). When you leave your cool mud house each day to work in that government building where indoor temperatures at midday are unbearable, how do you feel?"

The building inspector quickly answered, "We have air conditioners and fans!"

The old man recoiled for a few minutes and then came back with more questions. He addressed the building inspector, "Hey, my dear scholar, Professor of Housing Standards, what about those places without air-conditioners? By the way, how many houses and offices in the city have such amenities?"

I looked at the building inspector. He was boiling with anger. Anger mixed with humiliation. The lips were trembling. The hands holding the file containing the city council's housing standards were wet with sweat and not only that, his whole body was drenched in sweat. Cold sweat!

"Well," the building inspector answered the old man, "I am going. I have had enough lessons on housing standards. I beg to leave, Sir!"

The boys again roared into laughter and shouted, "You lose, you lose, you lose!"

I stared at the building inspector with sympathy as he walked away,shrugging his shoulders. I said to myself, "Oh, what a poor missionary. Trying to spread and defend the gospel he doesn't understand!"
I knew that the City Council's official housing standards were too foreign, inappropriate and irrelevant to be enforced in such an old traditional neighborhood.
Reflection

Research by the author showed that the latest edition of official housing standards for the city of Kumasi-Ghana were written in 1932. Yet, these standards, which are irrelevant and inappropriate, are supposed to be enforced by building inspectors. No wonder that some building inspectors end up with their hands tainted with corruption while others face unnecessary ridicule.

Official housing standards the building inspector is trying to enforce are written rules and material specifications by the government and its allied agencies to regulate the quality and quantity of any housing development. On the other hand, the old man sees cultural housing standards to be unwritten traditional building standards and norms standing for the cumulative experience of the people over many decades, and are preserved in the consciousness of the people.

Official Housing Standards have been developed in different ways in all countries. They have a long history behind them, especially in the western countries.

In the west, the 19th century saw the birth of housing standards to protect the weaker members of the community from naked exploitation. The weaker members were basically the workers. The housing standards were particularly instituted to hold landlords and building speculators responsible for minimum requirements for hygiene, safety, and privacy.

On the other hand, official housing standards in the Third World, for instance, Ghana, were first hatched out by the colonial authorities to suit the tastes of the European officials and the settlers and the native elites who worked for the colonial authorities. It must be noted that the colonial authorities left the natives to house themselves
according to their traditional practices.

Surprisingly after independence, native governments such as Ghana, adopted the former colonial standards in toto, which in most cases had no relation to the needs of the greater part of the population or to what they could afford, as the old man aptly pointed out. This shows that housing rules and material specifications were instituted to meet the tastes of the rich, the educated minority who had a kind of mental paralysis about foreign environments.

The old man was particular about the imported building materials being arbitrarily imposed on the community. Maybe, the most critical area where the enforcement of official housing standards on the community gives a devastating blow to the poor is the type of building materials permitted. These materials are alien to the traditional building industry. The people do not have the accompanying skills to work on them as the other traditional building materials. When the old man drew attention to the fact that all the buildings in the neighborhood had been built without any alien housing standards, he was definitely referring to Cultural standards.

Cultural standards, as said earlier, have been born out of building practices that are an integral part of the society. A large number of people embrace cultural standards because of their personal values as well as the fact that they are cheaper to work with. The old man saw cultural standards to be more realistic to their needs (one of many reasons being affordability), than the official standards which often smell of luxury. Cultural standards lay emphasis on local resources and skills, while the official standards unfairly expose the poor to the imperfections of the market mechanism. The old man proved that cultural
standards offer the best environmental solutions to local constraints of resources. The mud walls and the thatched roofs give perfect "comfort-zone" temperatures for indoor living throughout the day. Even if the residents of the neighborhood were given free air conditioners to provide comfort-zone temperatures in their rooms, they would not be able to pay for the electricity bills.

The old man made the building inspector look stupid when talking of air-conditioners and fans since very few houses and offices in Ghana have such amenities. The way the old man made the comparison between his clothing and that of the building inspector, focuses on the point that many kinds of cultural standards are stored in the consciousness of the people.

As we see from the old man/building inspector dialogue, official housing standards in Ghana are hardly based on local experiences. They are either a colonial inheritance or borrowed from the developed countries. Little or no attention is paid to traditional materials. Hence, the regulations always encourage imports of foreign building materials like cement, steel, corrugated metal or asbestos sheets for roofs, paving tiles for floors, aluminum window frames, etc. -- very unrealistic specifications which are invariably beyond the economic capacity of low-income classes. In fact, the material specifications disregard the limited capacity of the people to pay for housing.

The specifications reinforce social stratification. The rich and the educated minority can meet housing conditions provided within the official material specifications. The rich and the educated minority, therefore, move from housing for shelter to housing of extravagance. But the poor cannot meet the costs of the official housing standards because
they are too expensive for their incomes. The urban poor therefore, move from housing for shelter to homelessness -- the plight of urban poor, since they are no longer allowed to build their homes with traditional practices. Furthermore, the official housing standards' foreign inclination gives them a strong urban bias -- officials try to impose these regulations in the urban areas which have similar characteristics from where they were borrowed.

Related to the imposition of borrowed regulations is the threat of demolition of dwelling units not built in compliance with the official standards. This partly discourages the urban marginal resident from investing sufficiently in the improvement of his dwelling unit with its immediate surroundings.
Urban and Rural

The housing problem may be broken into urban and rural. In the urban areas, official planners often talk of a "housing deficit." This means that a lot of people are homeless. But this can be a tricky concept since even the poorest people find some kind of housing, however precarious the situation may be. A housing deficit, therefore, really means a deficit in the number of houses built to a middle-class standard, since the planners often feel that houses built by the poor are below some arbitrary technical codes. There is also the problem of overcrowding. For example, a 1973 National Housing Survey indicates that there were 3.0 persons per room in the city of Accra and 3.6 persons per room in the city of Kumasasi -- all representing a high degree of overcrowding since generally, the authorities agree that there is overcrowding when occupancy rates are greater than two related persons per room.

The planners have almost totally neglected rural housing. Here there is no overcrowding but the existing housing stocks are in a deplorable condition. Buildings with cracks and collapsing walls which constitute danger to the dwellers are a common feature. Unfortunately, the rural dwellers have also been exposed to the usage of only foreign materials to improve their home. So in absence of these materials, they pitifully watch their dwelling units dilapidating since partly they do not know of any better traditional techniques than what is locally available.

The basic factors contributing to the housing problem are the rapid growth of the population and the rates of migration and urbanization, which have led to population congestion in few urban towns. The greatest
concentration of population is in the triangle formed by the largest cities -- Accra to the east and Sekondi-Takoradi to the west (all on the coast) and Kumasi in the hinterland. With an estimated urban population of over three million in 1977, Ghana has one of the most rapid rates of urbanization in Africa, south of the Sahara. Since 1921 when only 7.5 percent of Ghana's population lived in urban areas, Ghana's urbanization ratio has steadily increased (Table 1). By 1970, almost a third of Ghana's population was urban. By the end of the century, more than 50 percent of the population is expected to be in urban areas. As shown in Table 1, the urban population is increasing at a rate that is almost double the national population increase.

Table 1
Growth of Ghanaian Population, 1921-1970

<table>
<thead>
<tr>
<th></th>
<th>1921</th>
<th>1931</th>
<th>1948</th>
<th>1960</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population (millions)</td>
<td>2.30</td>
<td>3.16</td>
<td>4.12</td>
<td>6.73</td>
<td>8.56</td>
</tr>
<tr>
<td>Rate of Increase (percent)</td>
<td>----</td>
<td>3.20</td>
<td>1.60</td>
<td>4.20</td>
<td>2.40</td>
</tr>
<tr>
<td>Urban Population (millions)</td>
<td>0.18</td>
<td>0.30</td>
<td>0.54</td>
<td>1.56</td>
<td>2.47</td>
</tr>
<tr>
<td>Annual Rate of Urban Population Increase</td>
<td>----</td>
<td>5.20</td>
<td>3.50</td>
<td>9.30</td>
<td>4.80</td>
</tr>
<tr>
<td>Urbanization Ratio</td>
<td>7.50</td>
<td>9.50</td>
<td>13.00</td>
<td>23.10</td>
<td>28.90</td>
</tr>
</tbody>
</table>

Notes: Urban areas are defined as having populations greater than 5,000.

On the national level, the population growth has averaged 2.8 percent per annum since 1921 (Table 1). Between 1960 and 1970, the total population of Ghana increased from 6.73 million to 8.56 million -- 27% increase. And 1980 population was estimated at 12 million -- a percentage increase of 28% since 1970.

An outstanding characteristic of the population as compared to those of the advanced countries is its youthfulness. About 50 percent of the country's population is less than 16 years of age (Table 2). The

![](https://example.com/table2.png)

**Table 2**

Age Structure, 1921-1968
(Percentage Distribution in Broad Age Groups)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1921</th>
<th>1948</th>
<th>1960</th>
<th>1968</th>
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<tbody>
<tr>
<td>Under 16</td>
<td>44.1</td>
<td>43.0</td>
<td>46.3</td>
<td>50.9</td>
</tr>
<tr>
<td>16-45</td>
<td>42.3</td>
<td>43.2</td>
<td>42.1</td>
<td>37.3</td>
</tr>
<tr>
<td>46+</td>
<td>13.6</td>
<td>13.8</td>
<td>11.8</td>
<td>11.8</td>
</tr>
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</table>

implication of this to the housing situation is that Ghana should expect to house more people in the future than at present. Even more important is the increase of households. The total percentage of households containing two to four persons dropped from 42.0 percent in 1960 to 36.0 percent in 1970 (Table 3). The change in urban households has been more
Table 3
Distribution of Households According to Size

<table>
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<tbody>
<tr>
<td>Average</td>
<td>4.3</td>
<td>3.6</td>
<td>4.6</td>
<td>4.7</td>
<td>4.1</td>
<td>5.0</td>
</tr>
<tr>
<td>1</td>
<td>20.4</td>
<td>28.5</td>
<td>17.1</td>
<td>21.2</td>
<td>27.7</td>
<td>18.1</td>
</tr>
<tr>
<td>2-4</td>
<td>42.0</td>
<td>43.2</td>
<td>41.0</td>
<td>36.0</td>
<td>37.7</td>
<td>35.3</td>
</tr>
<tr>
<td>5+</td>
<td>38.0</td>
<td>28.3</td>
<td>41.9</td>
<td>51.9</td>
<td>44.0</td>
<td>55.9</td>
</tr>
</tbody>
</table>

Source: The Population of Ghana

dramatic. The total number of urban households containing five or more persons has increased by 15.70 percentage points since 1960 (Table 3). Of particular interest is the increase in the percentage points of nuclear families in the urban areas since 1960. In 1968, nuclear family households accounted for 44.4 percent of households and had an average size of 4.6 (Table 4). This was an increase from the 1960 level, when 41.6 percent of households were nuclear with an average size of 4.3 persons.

Table 4
Household Composition and Household Size, 1960 and 1968

<table>
<thead>
<tr>
<th>Family Household Type</th>
<th>1960 Urban and Rural Percentages</th>
<th>1960 Average Number of Persons per Household</th>
<th>1968 Urban and Rural Percentages</th>
<th>1968 Average Number of Persons per Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>All households</td>
<td>100.0%</td>
<td>4.3</td>
<td>100.0%</td>
<td>4.9</td>
</tr>
<tr>
<td>One person only</td>
<td>17.9</td>
<td>4.3</td>
<td>18.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Nuclear families</td>
<td>41.6</td>
<td>4.3</td>
<td>44.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Husband-wife and children</td>
<td>32.6</td>
<td>4.3</td>
<td>28.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Husband-wives and children</td>
<td>4.6</td>
<td>8.1</td>
<td>4.6</td>
<td>3.3</td>
</tr>
<tr>
<td>One-spouse families</td>
<td>9.0</td>
<td>3.3</td>
<td>11.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Other families</td>
<td>40.5</td>
<td>6.1</td>
<td>37.6</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Increases in the household sizes in addition to the average occupancy rates of 3 related persons per room have led to a high degree of overcrowding in the urban areas and that more houses are needed to ease the overcrowding. Yet, most governments build to excessively high western standards, using expensive materials and construction methods. The high cost of this choice means that only limited amounts can be built and that only the urban privileged, government employees and salaried workers, can afford to buy or rent it.

But there is now very high demand for housing and the country is unable to satisfy this demand arising from the imbalances in the distribution of resources and the non-existence of a well-outlined policy. Such factors including the rising cost of imported materials, inadequate mobilisation of indigenous resources have aggravated the housing problem.

One of the physical responses to the housing problem of the poor migrating into the cities is the development of slums. Closely related to the slum problem is the number of people living in substandard housing -- housing which does not conform to the official technical building codes. In addition, living in non-dwelling units such as garages is a common feature in the urban centres. If an account of these with the expected future demand is taken into consideration, then the magnitude of the housing problem is readily appreciated.
FOOTNOTES

CHAPTER ONE

1. The walls of houses of mud construction here are made with simple lumps of ill-formed clay placed one on top of another, and the wall is then plastered with a coat of mud mixed with cement or some organic material such as cow dung.

2. A Ghanaian word meaning scholar.

3. A pidgin English word usually used in Ghana to mean theoretical.
Target Group Identification

The target group is broadly the urban low-income residents. However, the group may be broken into two parts: a) the self-builders; b) those who desperately require subsidies.

The self-builders are those who do not earn enough to pay for a house built by the government or the private market but who can build themselves or with the help of their friends. This group consists of people who cannot and will not employ professional builders, those who know to build with their own hands, those who rely on the help of their relatives and friends or who at most employ only occasionally a part-time mason or carpenter to help with the more complex parts of the undertaking. They generally need capital only or mainly for the purchase of materials.

Those who require subsidies are the urban workers who do not earn enough to pay economic rentals for their homes and who have lost the skill or lack the time to build with their own hands. This group includes many unskilled labourers employed in docks, mines and factories where they have to work eight-hour shifts regularly and thus, are without the leisure which their rural counterparts often use for the building of their houses. This group is the lowest "real" income earners and the families of this group need subsidies, irrespective of whether their houses are built by the government or private investors.

Six low-income settlements in five urban centres, located in four regions of Ghana form the case study on the low-income target group. The six low-income settlements are: 1) Tamale Central in Tamale-Northern
Region; 2) Anloga and Moshie Zongo in Kumasi-Ashanti Region; 3) Nima in Accra-Greater Accra Region; 4) Ashaiman in Tema-Greater Accra Region; 5) Kwesimintim in Sekondi-Takoradi-Western Region. The general characteristics of the low-income target group identified are the following:

a) Unemployment is higher than in surrounding urban areas.
b) The proportion of unskilled labour was as much as twice that of surrounding areas.
c) The proportion of professional skills is usually similar to that in surrounding urban areas, indicating that professionals frequently live in low-income areas.
d) A higher percentage of the residents in lower-income areas are self-employed.
e) Both population per room and house densities are higher.
f) The level of infrastructure is much lower than surrounding urban areas.
g) There tend to be a larger number of immigrants in settlements who are tenants. Usually, rural migrants will settle near relatives or people from their home area, so that settlement becomes a string of urban villages where people can preserve at least some of the culture, their ceremonies, their networks of mutual help and support. This can cushion people against the isolation and alienation of fragmented city life.
h) In some settlement patterns, all available land has been used for building purposes.
i) Land tenure is usually traditional and has not been formalized by the Lands Department. The settlements may be subject to land tenure disputes between various traditional owners.
Demographic Characteristics

Households in lower-income areas are larger than the average for the larger metropolitan areas (Table 5). In all cases room densities are greater than what is considered a minimum room occupancy standard -- two related persons per room. The implication is that in addition to the country's general overcrowding housing situation, the low-income urban areas have super-overcrowding housing conditions.

Table 5
Average Household Size, Metropolitan and Low-Income Areas

<table>
<thead>
<tr>
<th></th>
<th>Average Household Size (Metropolitan)</th>
<th>Average Number Persons Per Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sekondi-Takoradi</td>
<td>3.7</td>
<td>5.6</td>
</tr>
<tr>
<td>Kwesimintim</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Accra</td>
<td>3.7</td>
<td>5.12</td>
</tr>
<tr>
<td>Nima</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Tema</td>
<td>3.5</td>
<td>3.47</td>
</tr>
<tr>
<td>Ashaiman</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Kumasi</td>
<td>4.0</td>
<td>5.21</td>
</tr>
<tr>
<td>Anloga</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Tamale</td>
<td>5.6</td>
<td>8.16</td>
</tr>
<tr>
<td>Tamale Central</td>
<td>2.2</td>
<td></td>
</tr>
</tbody>
</table>

Occupations and Vocational Skills

There is a larger percentage of unskilled workers in Nima than in Accra as a whole, probably explaining higher unemployed rates (Table 6). In Ashaiman there are twice as many unskilled workers (7% greater than in Tema as a whole).

In most low-income areas, self-employment is greater than the average for urban areas. The greatest percentage of self-employed persons are found in Kumasi (53%). An even greater proportion of Anloga's workers are employed in small-scale business. Anloga is noted for its small-scale timber industry which provides up to 64 percent of the employment in the community. In other areas employment is more often found in the surrounding community. This trend is particularly true in Nima and Ashaiman which provides housing for Accra and Tema's low-income workers respectively. Kwesimintim is a much more traditional community than Nima, Anloga or Ashaiman and has about 50 percent self-employed, compared to surrounding Sekondi-Takoradi where only about 40 percent are self-employed.

Educational levels tend to be lower in the five slum areas than in the cities of which they are part. In Nima between 7.0 and 48.0 percent of primary school aged children attend formal schooling, while in Accra as a whole, almost 70 percent of primary school aged children attend school. In other areas the difference is much smaller. About 50 percent of the primary school children in Kwesimintim attend school, compared with 60 percent in Sekondi-Takoradi as a whole.
## Table 6
TARGET GROUP IDENTIFICATION: A COMPARISON OF URBAN AREAS AND LOW-INCOME AREAS

<table>
<thead>
<tr>
<th></th>
<th>Accra</th>
<th>Nima</th>
<th>Sekondi-Takaradi</th>
<th>Kwesti-Mintim</th>
<th>Kumasi</th>
<th>Moshie Zongo</th>
<th>Anloga</th>
<th>Tema</th>
<th>Ashtainen</th>
<th>Tamale</th>
<th>Tamale CT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% in Primary School)</td>
<td>68% +</td>
<td>48%</td>
<td>(7% 1968)</td>
<td>59% +</td>
<td>48%</td>
<td>59% +</td>
<td>48%</td>
<td>48%</td>
<td></td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td>Vocational Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% Unskilled)</td>
<td>4%</td>
<td>16%</td>
<td>(1976)</td>
<td>6%</td>
<td>11%</td>
<td>(36%)</td>
<td>5% (16%)</td>
<td>7%</td>
<td></td>
<td>14%</td>
<td>5%</td>
</tr>
<tr>
<td>(% Professional)</td>
<td>8%</td>
<td>11%</td>
<td>5%</td>
<td>5%</td>
<td>7%</td>
<td></td>
<td></td>
<td>10%</td>
<td>6%</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Home Ownership</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% Tenants)</td>
<td>95%</td>
<td>77%</td>
<td>(1973)</td>
<td>95% (1973)</td>
<td>75%</td>
<td>98% (1973)</td>
<td>85%</td>
<td>na</td>
<td>87%</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>Pipe Bourne</td>
<td>43%</td>
<td>-</td>
<td></td>
<td>6%</td>
<td>8%</td>
<td></td>
<td>11%</td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standpipes</td>
<td>40%</td>
<td></td>
<td></td>
<td>94%</td>
<td></td>
<td></td>
<td>19%</td>
<td>38%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% of Households)</td>
<td>52%</td>
<td>29%</td>
<td></td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**
- A Housing survey in Ghana, 47
Home Ownership and Access to Urban Infrastructure

Home ownership in the urban areas of Ghana is rare. In Accra, less than 10 percent of the respondents to the 1973 Housing Survey own their own houses. Only in Tamale were more than 40 percent homeowners. There is, however, a larger proportion of homeowners in the low-income urban neighbourhoods.

In Accra, 94 percent of the persons interviewed were tenants, while in Nima only 77 percent rented (Table 6). Similar comparisons have also been found in Sekondi-Takoradi and Kumasi.

The provision of piped water varies greatly from settlement to settlement. In Tamale Central, probably due to its advantageous location, 61 percent of the households have access to public standpipes, and only 1 percent rely on other households for water and higher rates. In Moshie Zongo and Anloga (Kumasi), large portion of the houses rely on wells. In Moshie Zongo the major well is probably polluted because it is below a garbage dump and public latrine. Details about houses provided with piped water in Nima (Accra) are not available, although there are large numbers of illegal connections in Nima.

The majority of urban low-income households rely on kerosene lamps for lighting, although Ghana has one of the largest hydro-electricity dams in Africa which supplies electricity to the neighbouring countries. However, in Kwesimintim (Sekondi-Takoradi) 52 percent of the households have electricity.
Incomes and Expenditure

According to the 1970 Population Census of Ghana volume II, median income levels are lower in the slum areas than in the larger urban areas as a whole. Personal incomes in Nima are 7.2 percent lower than in Accra. In some areas such as Kwesimintim (Sekondi-Takoradi), this income difference is as much as 46.3 percent. In the Kumasi suburb of Anloga, median incomes are more than 27 percent lower than median incomes in Kumasi as a whole.

It is glaringly obvious that the problem is not simply a housing problem related to standards but a dimension of the poverty and inequality syndrome. The fundamental dilemma underlying most of the housing problems arises from a willing acceptance of great inequalities in the distribution of personal incomes, coupled with a rejection of similar inequalities in the distribution of housing. A determination to provide decent housing for people now deprived of it cannot bear fruit unless they are enabled to pay for what they need.

Table 7 shows the percent of income paid in rent in Nima by each income group. At the 50th percentile, household heads pay between 6.0 and 19.0 percent of their incomes in rent. The largest group, however, pays about 10.0 percent of its income in rent. The incomes of household heads in the 30th percentile are spending between 8.0 and 24.0 percent in rent. Most pay about 12.0 percent. At the 10th percentile, rent takes between 11.0 and 34.0 percent of household head incomes. On the average, rent accounts for about 17 percent of expenditure by the lowest group. Poorer households pay higher percentages for rent. Given the largest increases in food costs and the large household sizes in settlements like Nima, it is unlikely that household heads can maintain monthly
TABLE 7

Nima Rent Distribution and Rent as a Proportion of Household Head Income

<table>
<thead>
<tr>
<th>Household Head Income</th>
<th>3.0 - 5.9</th>
<th>6.0 - 8.9</th>
<th>9.0 - 11.9</th>
<th>12.0 - 17.9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>% of Income</td>
<td>No.</td>
<td>% of Income</td>
</tr>
<tr>
<td>(c 1,124)</td>
<td>10</td>
<td>6</td>
<td>52</td>
<td>10</td>
</tr>
<tr>
<td>(c 879)</td>
<td>22</td>
<td>8</td>
<td>51</td>
<td>12</td>
</tr>
<tr>
<td>(c 639)</td>
<td>10</td>
<td>11</td>
<td>58</td>
<td>17</td>
</tr>
</tbody>
</table>

The variation in percentile group is due to variations in the sample.

E: Derived from Government of Ghana Interim Report Table 12.
expenditures for rent much in excess of 10 percent of their income.

Although rents are controlled by the Rent Control Division of the Ministry of Works and Housing, the system is ineffective. It seems to apply to only public housing; and public housing is only about less than 10 percent of the country's housing stock.
Housing Standards and the Building Industry

Standards may be expected to rise broadly as Gross National Product and social expectations rise; consequently standards can never be finite but must be determined in accordance with prevailing needs and resources.

In the pre-independence era in Ghana, several public buildings were built in timber (an example is the Ridge Hospital, Accra). A number of bungalows were also built in timber and landcrete blocks (local terminology for stabilized soil blocks).

In contrast, the post-independence era has seen Ghana obligating herself with high content of imported materials (especially concrete structures) in her national construction works. This has led to an increasing cost of construction in the country, because of the following factors:

a) The country has been over-dependent on imported materials, with the result that the proportions of foreign exchange earmarked for building materials have overgrown their fair share of the nation's resources; consequently, leading to frequent shortages of building materials;

b) High internal freight cost due to the concentration of materials industries along the coast;

c) Inefficiencies in materials construction management resulting in uneconomic use of imported items.

As a result of the magnified effect the imported materials have on the pace of national construction activity, a number of projects have had to be shelved. Even when they are started, they proceed at a rather slow
pace or are abandoned at certain stage for a time, whilst the costs given at the drawing board stage continue to go up with time.

Major building materials have a very high reliance on imported raw or semi-finished materials (Table 8). These materials account for about 80 percent of total building materials costs. Thus, the total import component of the building industry is about 53 percent of total costs.

Table 8
Major Building Materials and Their Degrees of Reliance on Imported Raw Materials

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage of Foreign Material Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos-Cement Roofing</td>
<td>91%</td>
</tr>
<tr>
<td>Cement</td>
<td>71</td>
</tr>
<tr>
<td>Galvanised Iron Roofing Sheets</td>
<td>67</td>
</tr>
<tr>
<td>Aluminium Roofing Sheets</td>
<td>64</td>
</tr>
<tr>
<td>Steel Rods</td>
<td>37</td>
</tr>
</tbody>
</table>


In spite of the heavy reliance on imports, and although the annual value of imports of raw or semi-finished materials has steadily increased, the actual quantities of imported materials have remained roughly constant. Construction capacity is closely linked to annual cement production. Building products containing cement account for between 30 and 60 percent of the total expenditure on building construction. To maintain this level of cement consumption, imports of gypsum and cement clinker quadrupled from 1970 to 1976.
Key Materials for Housing

As Table 9 shows, about 54 percent of the houses in the urban areas were built with swish-mud, while in the rural areas, mud buildings accounted for about 95 percent of the housing stock in 1960. In 1970

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete (Sandcrete)</td>
<td>37.8</td>
<td>2.9</td>
<td>8.9</td>
<td>58.2</td>
<td>4.9</td>
<td>15.0</td>
</tr>
<tr>
<td>Landcrete</td>
<td>3.5</td>
<td>0.6</td>
<td>1.1</td>
<td>15.9</td>
<td>2.4</td>
<td>5.0</td>
</tr>
<tr>
<td>Swish-Mud</td>
<td>53.6</td>
<td>94.6</td>
<td>87.5</td>
<td>23.3</td>
<td>90.8</td>
<td>78.0</td>
</tr>
<tr>
<td>Others</td>
<td>5.1</td>
<td>1.9</td>
<td>2.5</td>
<td>2.6</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>


Concrete (sandcrete) houses took over the lead with about 58 percent in the urban areas as compared to about 38 percent in 1960. At the same period, mud houses dwindled to about 23 percent. Nevertheless, in the rural areas, mud houses still made up more than 90 percent of the housing stock. On the whole, mud houses accounted for about 88 percent and 78 percent in 1960 and 1970 respectively in the national housing stock. Therefore, for some time to come a large proportion of the houses, particularly in the rural areas will continue to be built in mud since mud is the most free building material of foreign component in the face of high costs and scarcity of imported building materials.
Private Sector in Housing -- Formal and Informal

There is not much detailed statistical data on housing provided by the private sector. However, according to 1970 Population Census, the private sector accounts for about 90 percent of the national housing stock; formal (in terms of dwellings built with the official housing standards) takes about 10 percent whilst informal (building with indigenous systems) accounts for 80 percent. The informal sector is usually of low-income housing. Many of these low-income housing units (especially in the urban centres) use used materials. Ashaiman in the port and industrial city of Tema shows the most extensive use of used materials. Wood packing crates from the port are used for sheathing of timber framed structures. These houses are fairly durable but are subject to damage from termites and exposure of the untreated elements to rain.

In the case of individual rural housing and most of the urban squatter settlements, local techniques of construction are specifically applied, and most of the houses are of mud construction. This is due to the fact that the skills for the traditional building materials procured from the natural resources of the immediate vicinity of construction are available and cheap. A mud house can last 25 years or longer with proper weather-proofing plasters. The main problems associated with this technology are erosion resulting from poor construction and a lack of skilled builders.

The formal-sector private urban builders use the conventional methods of construction by complying with the official building codes. Sandcrete construction -- lower grade concrete blocks made with sand and about 25 percent cement by volume, is the major building material used in
most new construction. It is the most expensive and the most permanent building material. Blocks vary widely in quality, because the proportion of cement used is often reduced. Interior and exterior surfaces are, therefore, usually plastered. These private urban builders are, in fact, small building contractors who build houses for individuals and some private agencies.

The major sources available at present for formal private house ownership financing are: i) The First Ghana Building Society; ii) The Bank for Housing and Construction; iii) and Informal Saving.

The First Ghana Building Society was incorporated in 1956 and between 1965 and 1970, the society financed only 130 houses. It did not succeed in mobilising capital from individual savings nor did it succeed in attracting substantial sums of money from the banks and other financial institutions. As a result, the society was only able to serve higher-income groups and has had limited impacts on total housing requirements.

In 1972, the Bank for Housing and Construction was established to promote efficiency in the operation of various housing agencies which will depend on the bank for financing. It was part of the policy that loans from the bank to finance individuals to purchase low-income houses would attract an interest rate of no more than 6 percent. Alas! Spiral inflation gripped the country and interest rates moved up to 16 and 18 percent. It therefore became very difficult for the bank to help the low-income groups. Its mortgage loans have totaled only about 8 percent of its total loan portfolio, and have all been to middle- and upper-income earners.

The most common means of housing finance is through Informal Saving.
of building materials accepted by the building codes. A potential owner typically acquires either leasehold or freehold tenure from the traditional owners. The holders are required to develop the plot within a fixed period, usually five years. To maintain their leases, temporary structures, walled enclosures, or simple collections of building materials are erected over several years. The gradual saving of building materials is common among all income groups. It is also common for owners to construct houses over a long period especially where the construction complies with the official standards.

Occupancy of unfinished houses by low-income groups is a common practice because of the lack of alternative housing.
Public Sector in Housing

In Ghana, like many developing countries, there is such a competitive demand for investment capital from productive sectors that tremendous difficulties are faced when attempts are made to increase investment into housing. Admittedly, there is no exact information on the size of the nation's total involvement into housing in relation to her G.N.P., and therefore, it is not known exactly how inadequate or adequate this is. However, according to the 1970 Population Census, the public sector contributes less than 10 percent annually of the national housing stock.

A State Housing Corporation (SHC) was established in 1956, and its original mandate was to build low-cost housing for Ghanaians unable to obtain privately constructed housing. Its primary goals were to construct housing for rent or sale on a subsidized basis and to offer mortgage and hire purchase facilities. However, the SHC has actually only been able to serve higher income groups. The costs of its operations and its development standards prevent it from reaching lower-income groups.

SHC annual production has varied from 1.0 to 8.0 percent of annual housing production. Plans have called for SHC to construct about 7.0 percent of the total annual national housing construction, but it has only once achieved that goal. SHC's current output is about 4 percent of annual increase in the national housing stock. Shortages of materials and poor management have limited production increases. If it were to enter lower-income markets, SHC would have to consider lower standards and a revised organisational structure.
Direct Investment by the Government into housing has not made much impact due to the fact that the high overhead costs of the housing executive agencies tend to eat very much into the capital. In addition, large investment went into few bungalows. For instance, the total number of bungalows and flats occupied by senior and junior staff of the Civil Service alone is estimated at 7,707. In 1969/70 financial year, the cost of maintenance of these government bungalows and flats came to $1,106,000. At the same time, the rent payments within the same period came to only $463,000. What a kind subsidy! This shows that the rents do not cover even half of the money spent on recurrent maintenance. A similar situation, no doubt, may exist in all the other public service organisations.

The State Insurance Corporation started housing finance in 1964, for those who had life insurance policies with the corporation. Right away, the low-income group was eliminated! The corporation insists that the applicant should contribute one-fourth of the building costs before being granted the loan. Nevertheless, up to now about only 600 houses for the high-income group have been financed by the corporation.

In the late 1970's, the Social Security Bank was also established with the possibility of investing a portion of the Social Security Fund in housing for the low-income group. The first project in the city of Kumasi came off with luxury apartments of very high standards -- beyond the reach of the poor. A second project was located in Accra in the late 1970's. When the project was finally constructed, it comprised expensive blocks of flats like the condominiums of the U.S.

In 1972, the government made low-income housing development its second priority after agriculture. It allocated money for low-income
housing from "budgeting savings" under the low-income housing programme, 5,532 units were built by 1976 but surprisingly there was a removal of housing subsidies and rents were allowed to rise to market levels.

From the various housing policies mentioned so far, one can clearly see that the authorities (the rulers) have tended to use the statistics of housing construction as a yardstick of success. But, to me, it is the improvement of the quality of the total stock of housing in the country, or in any one city, which matters most. A blind concentration of efforts on new house construction is not necessary the best policy of achieving this end, and is, indeed one which victimizes the low-income groups, in that the stock of housing cheap enough for their pockets may markedly decrease in course of time as a result of escalating housing costs due to the country's heavy reliance on imported building materials and to local inflation. This has very substantial implications. In most cases it represents a direct swing in housing stock from private to public, thus placing more and more people in the hands, for better for worse, of the public housing authority.

Rehabilitating existing housing offers greater scope for providing a variety at acceptable quality levels than new housing, for in the towns and villages of the countryside where the majority of the population resides, the problem is the poor physical environmental quality of what is available. Besides, it is singularly unwise to aim to build say 10,000 homes a year while so much per year is allowed to dilapidate. To me, a sensible housing policy will therefore be heavily concerned with existing housing.

A broader conception of policy is important particularly in relation to the distribution of income and wealth. For governments may not only
decide that the existing distribution of income and its associated pattern of housing expenditures is sub-optimal but they should also view the housing system as being an important channel of income redistribution. So it is essential to stress that housing policy analysis is often more concerned with getting the issues right than becoming overly involved in the arithmetical of housing production.

Table 10


<table>
<thead>
<tr>
<th>Material</th>
<th>Weight</th>
<th>Average Annual % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unskilled labor</td>
<td>17.9</td>
<td>20.6</td>
</tr>
<tr>
<td>Skilled labor</td>
<td>26.2</td>
<td>14.8</td>
</tr>
<tr>
<td>Sand</td>
<td>2.2</td>
<td>39.4</td>
</tr>
<tr>
<td>Stone</td>
<td>9.2</td>
<td>43.6</td>
</tr>
<tr>
<td>Timber</td>
<td>5.2</td>
<td>28.8</td>
</tr>
<tr>
<td>Cement</td>
<td>8.9</td>
<td>23.0</td>
</tr>
<tr>
<td>Steel Materials</td>
<td>5.4</td>
<td>34.8</td>
</tr>
<tr>
<td>Roofing Materials</td>
<td>5.4</td>
<td>48.5</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>19.6</td>
<td>10.8</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>21.0</td>
</tr>
</tbody>
</table>

Changes in Building Costs

The annual changes in the index of building costs are shown in Table 10 for the years in 1970 through 1976. For that period the annual increase in building costs averaged 1 percent. These increases were primarily because of increases in the key building materials, i.e., sand, stone, cement, timber, steel products, and roofing materials. Increases in labour costs showed relatively lower rates of average annual increase, although skilled labour made up 26.2 percent of total cost.

Much of the apparent increase in construction from 1970 to 1974 is because of increases in the value of imports and domestic prices. During 1974, when the gross output due to construction increased 68.6 percent, the price index increased 34.7 percent, and the value of imported materials for construction increased 98.3 percent over 1973 values.

To illustrate the impact of costs increase on the ability of low-income earners to afford housing, the cost increases for a simple one-room house have been calculated. Table 11 illustrates cost increase components since 1967 for a house built of conventional building materials (sandcrete blocks, plaster, smooth concrete floor slabs and asbestos-cement roofing sheets on hardwood purlins with no ceilings). Masonry, carpentry, and plastering skills supplemented with unskilled labour were the only building skills required. These estimates further assume that construction was by a small contractor and that several houses were constructed in the same project.

Since 1967, costs for this simple type of one-room house have increased 170.3 percent. The percentage of material costs to total costs has increased from 64.1 percent in 1967 to 70.8 percent in 1977. At the same time, labour costs as a percentage of total building costs have
### Table 11

**Cost Comparisons: Simple One-Roomed House; 1977, 1974, 1967**

<table>
<thead>
<tr>
<th>Year</th>
<th>Item</th>
<th>Materials</th>
<th>%</th>
<th>Labor</th>
<th>%</th>
<th>Overheads</th>
<th>%</th>
<th>Profits (5%)</th>
<th>%</th>
<th>Total Costs</th>
<th>% of Total</th>
<th>Import Component %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>A. Substructure</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Material:</td>
<td>Cone Slab</td>
<td></td>
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<tr>
<td></td>
<td>Asbestos</td>
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<td></td>
<td>Cement</td>
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<tr>
<td></td>
<td>B. Superstructure</td>
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<td></td>
<td>C. Roofing</td>
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<tr>
<td></td>
<td>Hardwood/Asbestos-Cement Plaster</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Doors &amp; Windows</td>
<td>583.12</td>
<td>(70.8%)</td>
<td>69.02</td>
<td>(8.4%)</td>
<td>135.10</td>
<td>(16.4%)</td>
<td>40.45</td>
<td>(4.9%)</td>
<td>823.18</td>
<td>100%</td>
<td>40.3%</td>
</tr>
<tr>
<td>1974</td>
<td>A. Substructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>B. Superstructure</td>
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</tr>
<tr>
<td></td>
<td>C. Roofing</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>D. Doors &amp; Windows</td>
<td>121.19</td>
<td>(68.2%)</td>
<td>50.45</td>
<td>(11%)</td>
<td>75.49</td>
<td>(16.0%)</td>
<td>22.42</td>
<td>(4.8%)</td>
<td>240.44</td>
<td>100%</td>
<td>41.2%</td>
</tr>
<tr>
<td>1967</td>
<td>A. Substructure</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>B. Superstructure</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>C. Roofing</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Doors &amp; Windows</td>
<td>147.48</td>
<td>(64.1%)</td>
<td>35.15</td>
<td>(15.8%)</td>
<td>16.48</td>
<td>(15.8%)</td>
<td>10.95</td>
<td>(4.8%)</td>
<td>230.08</td>
<td>100%</td>
<td>43.1%</td>
</tr>
</tbody>
</table>

**Note:** 22.75 = 1.00

Source: Building Cost Statistics, Building and Road Research Institute
decreased (15.3 percent in 1967 to 8.4 percent in 1977).

For the two years for which import components could be calculated, the total import component remained about 40 percent of total building costs and was accounted for mainly by cement and asbestos-cement roofing sheets. Total profits and overhead remained about 20 percent of total building costs.

To illustrate the potential impact of import substitution, Table 12 represents the costs of the same, one-room house (built by a small-scale contractor) using fired clay brick and landcrete (local terminology for stabilized) soil bricks. Both the brick and landcrete houses are about 15 percent lower in costs than sandcrete, because they require lower levels of imports involving expensive materials.

The increase in the import content of building causes rises in the cost of housing. This has risen so much in recent years in Ghana that the central government has been forced into exacting sweeping rent control laws, which regrettably have not been effective because of the pressure of demand relative to supply. One of the effective ways of reducing high housing costs is to revise the present official housing standards to incorporate the use of local building materials in housing construction. Besides reducing the cost of housing construction and, therefore, hopefully reducing rent, use of locally produced building materials would save substantial foreign exchange for the country.
TABLE 12

COST COMPARISONS: SIMPLE ONE-ROOMED HOUSING USING INDIGENOUS BUILDING MATERIALS (1977 COSTS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Item</th>
<th>Materials %</th>
<th>Labor %</th>
<th>Overheads %</th>
<th>Profits (%)</th>
<th>Total % of Total</th>
<th>Import Component %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>Brick Fired Clay Tiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td>A. Substructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete Slab</td>
<td></td>
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<tr>
<td></td>
<td>B. Superstructure</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4½&quot; Brick Walls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Roofing</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fired Clay Tiles</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Jointry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wood Doors &amp; Windows</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>E. TOTAL</td>
<td>494.64</td>
<td>74.74</td>
<td>11.27</td>
<td>33.61</td>
<td>714.44</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>Stabilized Soil (Sandcrete)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>A. Substructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td>as above</td>
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<td></td>
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<tr>
<td></td>
<td>B. Superstructure</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stabalized Soil Blocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>C. Roofing</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Asbestos-Cement</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>D. Jointry</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>as above</td>
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</tr>
<tr>
<td></td>
<td>E. TOTAL</td>
<td>421.43</td>
<td>120.05</td>
<td>140.60</td>
<td>27.08</td>
<td>718.03</td>
<td>32.3</td>
</tr>
</tbody>
</table>

SOURCE: Building Cost Statistics, Building and Road Research Institute
FOOTNOTES

CHAPTER THREE

CHAPTER FOUR

The Present Building Codes and Their Faults

The present building codes were enacted during the colonial period, being directly reliant on imported materials and mostly urban biased. Research by the author showed that the latest edition of official housing standards for the city of Kumagi-Ghana were written in 1932. At this time of writing, it has not been possible to obtain a copy of the regulations of housing standards of Ghana. However, here are some of the areas of concern the housing codes cover:

a) Town planning laws currently do not allow the use of landcrete, mud blocks or any indigenous materials for house construction in the urban areas.

b) Housing plans/designs for approval by the municipal authorities should have legal titles to the lands involved. But traditional landholding practices common throughout sub-Saharan Africa particularly Ghana permit the possession of land to satisfy individual needs in respect of farming, trading or housing but do not give absolute rights of ownership in the western legal sense.

c) Rigid layouts; definite sizes of windows, rooms and number of toilets and bathrooms per persons. For instance, a minimum size of a room should not be less than 100 square feet.

d) All dwelling units should be designed by practising architects and their structural elements certified by practising engineers.

e) Lot sizes and percentage of built-up area/circulation. The cities' bylaws forbid using more than 40 to 60 percent of the lot only for buildings. And efficiency circulation should be around 25 percent.
of built-up area—straight copy from Architects' Data by Neuffert. Using external space standards of American or European cities in the design of developments in this part of the world is completely unfeasible.

f) Specific drainage and sanitary materials, mostly foreign.

g) Population densities—people per acre or hectare, or number of families per acres or hectares, or number of dwelling units per acre hectare. In high-income areas, the population densities quite often are too low, resulting in a fragmented society while in the low-income areas, the population densities are too high providing a situation of overcrowding.

h) Zoning leading to unfair location of low-income housing schemes and communal open spaces.

Few codes in the world are perfect and in all codifications there is a danger of both excessive detail and excessive flexibility. Evasion, over-rigidity of design, curtailment of construction or excessive costs are some of the by-products. The aim of a codes, therefore, should be to avoid hampering innovation, or good local or other sound materials and methods. Building regulations should lay down simple rules guaranteeing structural safety, sanitation and some essential aesthetic considerations, encouraging a continuing programme of improvements and the regulations in the main should aim to define performance criteria.

Since housing programmes have been part of government policy, it is necessary to determine appropriate performance standards for the particular subject of each proposal or regulation. Very many countries in the world now have their own defined minimum standards for room sizes
and ventilation in dwellings, for school construction, for road building, as well as for water supply and drainage. The acceptance of these standards does not mean that all developments that fail to come up to the required level should immediately be replaced, nor that all new developments will take place in accordance with those standards, but it does indicate that new construction would have to follow these standards.

Standards may be expected to rise broadly as Gross National Product and social expectations rise; consequently standards can never be finite but must be determined in accordance with prevailing needs and resources. It is essential to have some sort of performance scale by which one can assess existing provision of facilities, and determine the quantity, quality and priority for future provision.

Changes in standards must be expected from time to time as a result of experience and changing circumstances. Although no standards should be regarded as unchangeable, too frequent changes would be self-defeating.

A. Building Materials and Style of Architecture

As pointed out earlier, the most critical area where the official housing standards give unflinching injustice to the poor is the kind of building materials permitted in the urban area. The housing standards have not room for traditional building practices using materials such as mud, thatch or even landcrete. But the imported building materials are far beyond the means of the poor. The poor are, therefore, partly forced to put up any shanty structures for fear of future demolition. This situation discourages the poor to invest substantially in the improvement of their houses.
An obvious answer is to cut the cloth to suit the purse, and adopt building standards according to the rents people can afford, rather than fixing rents according to desired standards. For public housing, a bewildering array of low-cost building techniques has been fairly developed by the Building and Road Research Institute, Kumagi-Ghana (where the author is an employee) to provide houses that cost less than western ones, yet provide better and healthier shelter than traditional housing. These techniques have taken much of their inspiration from traditional methods, which were often ingenious and cheap ways of using locally available materials to produce shelter suited to the local climate and architecture in harmony with local social structure. Nevertheless, all these initial efforts are shelved in the drawers, for the authorities think of "modernization" by looking to the west.

Yet, traditional housing often fulfills the requirements of good design, being both beautiful and functional. The inter-locking cubes of North African hill villages, for instance, make one family's roof another family's terrace for cooking, working or drying grain and fruits. Traditional design also reflects daily living patterns and family structure. For example, the walled Dagomba compounds of Northern Ghana enclose dozens of tiny circular huts. Each adult man has one hut, while each of his wives has a separate hut which she shares with her children. This provides privacy within a context of communality, and helps to avoid arguments between rival wives in polygamous marriages. The structure of the compound locates the individual securely in a supporting context of collective living.

Unfortunately, none of the new low-cost or low-income approaches to housing has tried to preserve the essence of traditional settlements
patterns. The indigenous social and cultural validity is lost in the transition of form from the family cluster to the rigid layout.

Again, the use of massive imported building materials hold back any local housing industry based on indigenous labour. The change of materials decreases the climatic performance of the new house and increases its costs beyond the range of most people. The poor's mind is focused on concrete because that is what the rich regard as "comfort" use for their houses. But concrete structures (without air-conditioning) have an immense thermal problem in addition to leakages in the tropics during the rainfall. In the northern sector of Ghana, the heat gain is even beyond the capacity of air-conditioning, which is, in any case, an extra expense for the rich.

B. Research

Of equal importance, the official housing standard's emphasis on imported materials makes research on traditional building materials virtually useless, for any result has limited or not effect on the status quo of existing by-laws and on the housing policy of the country—if there is any consistent and comprehensive one at all!

C. Upgrading, Site-and-Services

The present official housing standards have contributed partly to the failures of upgrading and site-and-services programmes. These standards force the poor to create or live in slums because any upgrading or site-and-services programme involves almost entirely costly imported materials. Furthermore, upgrading of a bare minority will not change the basic degrading, inequities of the system. Upgrading quite often, too, involves clearance of some of the houses and relocation of some of the
people. New houses imply substitution of expensive houses for cheap houses. No wonder that the poor see upgrading as an attempt to curb the social unrest without the government making any effort to restructure the economic pattern of the society which is the essential cause of poverty and homelessness.

The official location of site-and-services also leads to dwelling segregation to the detriment of the poor. The site-and-service programmes are quite often located far away from the city centres where land price is sufficiently low so that the user can succeed in covering its payments. But the officials forget that nothing is more important to a slum-dweller than the location of his house. His first priority is a site from which gainful employment can be obtained. It is, therefore, not surprising that many rehoused slum-dwellers leave their new sites and return to their original place of squatting solely to be nearer to the work place. And those who stay behind, too, continue to putting up shanty structures. Yes, they cannot afford the materials specified by the building codes. Those who build according to specifications also go bankrupt after completion of their houses, finding it impossible to pay back their loans.

D. Architects

The most questionable part of Ghana official housing standards is its compulsory requirement of all dwelling units in the urban areas to be designed by registered architects. To me, this part of the standards is a conspiracy to rob the poor of decent housing, since professional consulting fees for even a two-bedroom house may be more than the annual income of most of the poor. At the same time, statistics show that on
the world-scale, only 4% of the housing stock were professionally designed!1

Architects (like myself) have unfortunately been arrogant when it comes to dealing with the poor. If a wealthy client is footing the bill, his every whim will be humoured. But with the masses, it is assumed that the architects and the municipal authorities who employ them know best. It is they, not the people who will live with the results for the rest of their lives, who decide how much space people need, what room layout is best, what standards of services and utilities are required, what community facilities are needed and where they should be located. Even in the advanced countries this assumption is dangerous and wrong, and there are millions of people paying for it in misery, stuck in estates and tower blocks. In the Third World the architect is a member of the westernized elite and can have little conception of the living patterns of the masses. People's participation in the design of houses and the planning of settlements is essential if these are to correspond to their needs, for I sincerely believe that houses that truly enrich the lives of people who live in them must be designed with these people and not simply for them according to pre-determined, universal principles. But it is the opposite which has been happening in Ghana in all site-and-services programmes.

In his recent study of a squatter settlement in Lusaka, Zambia, Richard Martin showed how indigenous rural methods of building, social clustering, and communal organization are adding up to more successful settlements than those officially laid out and run by government bureaucracies applying alien methods.2
Housing Standards: Should there be any at all?

a) Quality

In Ghana, like many developing countries, housing officials persistently call for some official housing standards as a leverage for good quality and acceptable level of environmental conditions. In this view, houses should be constructed according to some technical codes reflecting the values and preferences of the 'bourgeois' class and the educated elite who have particular view about the build environment. But these fixed official standards make the actual situation progressively less tolerable for the poor majority as pointed out earlier on in the discussion.

To me, quality can only be seen from the angle of what the users recognize as their needs. Unfortunately, their perception of needs is characterized by the acceptance of their situation of "poverty", and by their inability to go beyond the narrow limits that the ruling economic and political regimes impose. Moreover, there is an average level of socially acceptable satisfaction for every need at any given moment, which is defined by the level of development reached by the society. And this must govern the analysis of quality but not by any arbitrary borrowed technical standards which are irrelevant and inappropriate.

b) International Level

On the international level, some housing experts on the developing countries call for no housing standards for various reasons; some of which have been mentioned earlier on in the discussion. Radicals amongst these groups are John F. C. Turner and his followers. My critique on this proposition is based on the work of Turner. He has this to say;
"The house can be seen from its morphological aspect as a mass object; or it can be considered as a system of relations: relations between building (the physical artefacts) and inhabitants (the people who use them). If the house is seen as a physical thing, it will be evaluated by material standards. But if the house is seen in terms of the relations between people and objects, both of which are changing, then it will be measured in terms of the correspondence between the habitat and the inhabitant absolute values based on the characteristic of the object, lack in themselves, any meaning, and are useless for the practical that men pursue...."

"The process of inhabiting the house is a system of relations, but this system is not limited to those relations that are established between the individual and the object. It goes much further than this, for it articulates with itself the entire social process of its production, and it is this process that not only defines the types of housing and the form of occupying it, but which also creates the need for it, and the needs bound up with its exchange. It is also closely tied to the functioning of society in general, through its consumers."3

The underlined phrases point to the fact that housing is tied to some cultural norms. And for Turner and his followers to turn around to proclaim that there should be no standard is a contradiction. It implies that people should be allowed to deprive themselves of their cultural heritage or should be encouraged to destroy their cultural heritage. Housing standards are not by themselves bad. It is their appropriateness and relevance in a particular condition in a particular period which is the bone of contention. It needs to be pointed out that the only standards with relevance in housing programmes are those which have their basic expression in human values, and that the concept of standards has meanings at all levels of housing quality, no matter how precarious the situation is.

There should be some standards; not the blindly-copied official one propagated by the 'bourgeois' and the educated elite publicity, but the one I call Cultural Housing Standards tying all the cross-sections of the people as a whole community with one destiny. We need not abandon quality simply because we deal in quantity. The traditional building
practices should be well-studied and improved upon to form the body of a new official housing standards. It is by doing this that the products of housing process will reflect positively the economic, social, cultural and political interest of the community.

Again, Turner (drawing lessons mainly from his Latin American experience) and his followers advocate that shanty-towns should not be viewed as a "problem", but as a "solution". Squatter settlements, they emphasise, are not "rings of misery" or "creeping cancers", but evolving communities. The residents of old inner city areas of the United States and Europe have reached the social bottom in what have been called "slums of despair". The new urban migrants of the Third World are, by contrast, struggling to better their conditions, and often moving socially upwards. They live in "slums of hope". Third World shanties argues Turner (in his book Housing By People) represent not housing in deterioration, but "housing in the process of improvement", and that housing policies should aim at helping the process.

I differ a bit from Turner and followers who believe that squatter settlements are a "solution" to the housing problem of the low-income groups. In fact, the philosophy is overly romanticised. Actually, the poor move into squatter areas because of the advantage of doing so...Some of which are lost in "legalised" housing. A critical look into the Ghanaian squatter settlements shows that most of the squatter dwellers once lived in a better housing in the rural areas. Where then lies "housing in the process of improvement"?

My own lessons from some West African countries as a result of housing studies do not conform to conventional belief of "housing in the process of improvement". In Ghana, those "shanty" towns which are more
than fifty years old, do differ in physical standards from those of more recent origin while there is no difference in the cases of Ivory Coast (Abidjan) and Nigeria (Lagos and Ibadan). Yet, the conventional picture is defended with reference to selected squatter settlements such as Cuevas in Lima, La Victoria and Nueva Habana in Santiago, George in Lusaka or Mathare Valley Colony in Nairobi.

However, the question is then, whether these settlements are the same as those which I have in mind. Even then in such instance, a number of issues can be raised. Can all the inhabitants in their respective settlements bring about progressive improvements in their respective conditions of accommodation? At least from the analysis of three settlements in Mexico by Ward (1978), it is evident that there remains a considerable differentiation in the extent to which such improvements take place, and some living quarters remain at an elementary level. This suggests that the proposition concerning "progressive improvements" is not sufficiently supported by empirical evidence to substantiate its general applicability.

Again, the shanty towns, according to the conventional belief, conform to the needs and priorities of the households accommodation. Turner, in his many writings, has with emphasis proposed that only the households living in the shanty towns are competent to judge their respective needs and priorities and arrange accommodation accordingly. Agreed partially! However, it must be noted that the residents apply a very different set of criteria to evaluate "good housing" because some are comparatively more well-to-do. As a matter of fact, the very poor shanty dwellers are like a man in a miserable hovel. If you ask him what he needs, he will not speak of an inside toilet or running water. He may
ask for a new paraffin lamp. Usually, it does not occur to a man who is accustomed to very little that he is worth more or can have more.

According to my judgement, the conditions of accommodation under which I found some households cannot be considered as adequate. I found that households were required to adapt to the shortfalls by enduring discomfort, by deviating from the cultural norms regulating the use of accommodation and by exposing the household members to ill-health and hazards.

c) The Ghanaian Situation

In Ghana and in Africa as a whole, people are tied to their native towns and villages—places of birth. As a result some squatters have even built decent houses in their native villages and towns where they hope to retire to one day. Why not places of their sources of income? It is partly because of the incumbent official housing standards on the urban poor coupled with the constant threat of demolition of dwelling units not built to the building codes and specifications of the city councils. But when two elephants fight, it is the grass that suffers. A clash between the official housing standards and cultural housing practices gives birth to unidentified lower grade of housing.

The current housing standards have no room for traditional building practices using materials such as mud, thatch or even landcrete. Any housing scheme using traditional building practices would not be approved by the municipal authorities or would be demolished if constructed. But a major factor in the high cost of housing is the very high import content of building materials which the cities' building regulations allow. Yet, these imported materials are far beyond the means of the
poor. The poor are, therefore, forced to put up any rickety structures for fear of future demolition. This discourages the poor to invest substantially in the improvement of their houses.

It is, therefore, the application and relevance of the present official housing standards that contribute one way or the other to the homelessness of the urban poor but not any standards per se.

The basic difference between squatter structures and those of the old traditional neighbourhood is physical appearance. While the old neighbourhoods' structures are well-spaced with cultural identity, those of the squatter settlements look crowded with no specific identity.

Besides the constant fear of demolition of structures by the city council authorities, the speculative private home builders in the squatter areas must also be planned. They buy plots of land, build shanty structures and sell them at exorbitant prices to the new migrants to the cities. It must be noted that in the Ghanaian situation, squatter does not refer to illegal spontaneous occupation of the land. The owners of the structures have legal titles to their plots of land, only the structures are built of "illegal" materials in the domain of the city administration. Communal land laws continue to exist alongside new concepts, and often in conflict with them. If a squatter is defined as one who occupies land without a legal title to it, then large parts of traditional African cities like Ibadan in Nigeria or Kumagı in Ghana would have to be called squatter settlements.

Yet some respected organisations quite often mix up the problem in reality of the various squatter settlements. The United Nations report (1976, p. 28) World Housing Survey, 1974, documents the following:

"Current statistics show that squatter settlements already constitute
90 percent of Addis Ababa, 61 percent of Accra, 33 percent of Nairobi and 50 percent of Monrovia..." Mixing the wolves and the sheep together? Such general applicability is like a renowned physician giving the best prescription to a patient whose laboratory examination is faulty. The prescription does not cure the illness but rather worsens it or compounds the patient's ill-fate by the side-effects of the best medication for wrong diagnosis. And until that each particular situation is microscopically viewed on its own merit, any general solutions to them en mass will be a flop.
FOOTNOTES

CHAPTER FOUR


CHAPTER FIVE

Abolition of the Housing Standard to a Cultural Housing Standard

Emphasising Indigenous Materials.

Many housing experts in the developing countries for various reasons feel that housing standards imposed on the urban poor in the developing countries are so high and inappropriate considering the economic plight of the urban low-income groups. Furthermore, the various governments cannot cater for all the housing needs of the people because of scarcity of resources to meet the ever-increasing housing demands.

The housing experts, therefore, call for No Standards at least, to enable the underprivileged urban groups to put up affordable shelters within their means. It is really logical and sensible since, in most cases, the cumbersome standards have been borrowed into from the advanced countries with different climate, level of civilization, economic and cultural backgrounds.

However, it must be emphasized that housing, in any society reflects on the economic, social, cultural and political context of the society. The housing products follow some kind of standards which have their basic expression in human values, and that the concept of standards has meanings at all levels of housing quality. We need not abandon quality simply because we deal in quantity. Quality bears direct relationship with the level of development of traditional building practices of the society in question.

Any standard per se is not bad. The traditional building practices ought to be studied very well and documented to serve as a base for any practical housing standards, which would be a desirable form of
governmental intervention for the following reasons:

1) The complexity of conventional construction methods renders it unlikely that the prospective home buyer will have sufficient technical knowledge to make an informal decision about the structural integrity of the unit. Cultural building codes will, therefore, serve as a substitute for complete knowledge on the part of the consumer by ensuring that at least a minimum level of quality is built into the unit. In lieu of that, there would be little incentive for builders to incorporate more than a minimal degree of structural integrity in their products because as it is now, most consumers are forced by circumstances to accept rickety structures since both the producers and the home buyers want to avoid the current codes.

2) The second market imperfection which suggests the need for government intervention relates to externalities. For instance, home buyers would tend to underinvest in safety features, thinking only of the potential damage to their own properties without considering the effect of fires or collapsing walls on surrounding properties. But in all the old traditional neighbourhoods, safety features are clearly seen as an integral part of the built environment—well-spaced structures, etc. The cultural building codes will, therefore, have the effect of readjusting this parochial investment decision by requiring that potential external costs be considered in deciding how much safety be built into the units.

3) Cultural housing standards will offer the self-builder relative low ranges of construction costs in addition to cultural identity of his living environment.
Furthermore, mud and other traditional building materials can make an important contribution to the pressing housing problems of the developing countries in general and Ghana in particular, giving the following reason:

a) easy and wide availability;
b) low cost;
c) suitability for labour intensive construction techniques;
d) construction techniques using traditional building materials are simple, so no sophisticated equipment or expertise is required;
e) people are already familiar with these techniques and materials;
f) they can be handled by local people and thus are able to self-help housing construction;
g) materials like mud are climatically suited to the needs of Ghanaians;
h) they require less energy in manufacture than modern building materials such as cement;
i) when well used, they are aesthetically pleasing, and assert cultural identity;
j) they can release scarce modern building materials for other important development projects;
k) their use reduces the demand for foreign exchange.

Although both the traditional and imported materials have their advantages and disadvantages, it is beyond the scope of this discussion to treat them any further. However, Wiltold Rybezynski's views on soil/cement in his book "Paper Heroes: A Review of Appropriate Technology, 1980", merit comment. He writes:
"It is argued that earth construction is advantageous because it makes use of a local material and the production process is labor-intensive, and hence it is considerably cheaper than other building materials, even with the addition of a small amount of cement. However, a consideration of over-all benefits does not support the view that earth construction will ALWAYS be cheaper.

Two United Nations experts made a study of earth building in Trinidad. As expected, soil/cement blocks were about 50 percent cheaper than conventional concrete blocks. However, when the cost of a complete house was calculated, the use of soil/cement became more expensive than concrete blocks. Soil/cement blocks are considerably heavier than the hollow concrete blocks and, being more porous, also requires more mortar. It took almost twice as long to build a house using soil/cement blocks, thus offsetting the advantages of lower material cost. The final house in soil/cement blocks was about 50 percent more expensive than the concrete-block house. In addition, in the climate of Trinidad, while concrete blocks could be expected to have a life of 50 to one hundred years, soil/cement blocks showed signs of deterioration after only two. Clearly, in the context of Trinidad, the benefits of the concrete block outweighed its initial higher cost. My point, once again, is not that soil/cement is not useful, but only that "usefulness" must be measured by a consideration of overall benefits, not by some narrow measure of "appropriateness". There are many situations where earth is an extremely beneficial building material, particularly when it is stabilized with a small quantity of cement and especially in rural areas where conventional cement blocks are not available and where the use of adobe or earth bricks is already a well-established building technique."

I differ with many of the interpretations of the research in Trinidad, because of my personal experience in similar comparative housing-cost in Ghana.

First, all the previous itemised advantages of the usage of mud favour soil/cement blocks rather than concrete blocks with the exception of the overall cost which is the bone of contention now. The soil/cement blocks being 50 percent cheaper is true because soil/cement blocks can be made perfectly with a cement-soil ratio of as low as 1:30 as compared with the conventional 1:6 (cement-sand) mix used in concrete blocks production. This shows that the quantity of cement is relatively small.

In the case of a complete house, I question whether the use of soil/cement blocks is more expensive than hollow concrete blocks.

Given equal conditions for the construction of two one-story
dwellings of soil/cement blocks and hollow concrete blocks, the difference between the costs of the two foundations is almost negligible, regardless of the relative heaviness of the soil/cement blocks. The fact that soil/cement blocks, being more porous and needing more mortar is questionable. Here, I guess Rybozynski means more mortar for plastering as a protection against rain or moisture. No amount of cement mortar can achieve the desired results if the proper technique is not used. If the proper technique is applied, it does not need much mortar. This point is discussed more fully below.

Secondly, the double time it took for the construction of the house of soil/cement block is doubtful! Given equal sizes of hollow concrete blocks, soil/cement blocks and competent masons, soil/cement blocks are faster to lay because in laying hollow concrete blocks, much more care is needed to avoid drops of mortar falling into the voids of the blocks to defeat the purpose of insulation—preventing easily heat transmission into enclosed spaces. Therefore, concrete hollow blocks take much more time and even call for much more skilled masonry with higher labour cost—man per hour. In addition, when it comes to plumbing works and electric wiring particularly, concrete hollow block is harder and needs much more care and time for chiselling or drilling cavities depending upon whether it is conduit or surface wiring.

Thirdly, if in the climate of Trinidad (being tropical), soil/cement blocks showed signs of deterioration after two years, it was due to the lack of construction techniques but not the mere material usage per se.

Plastering poses a major problem in mud wall (or soil/cement wall) treatment. Conventional cement/sand plaster has always failed when applied to a mud or soil/cement wall as a protection against rain. This
is so because mud and cement mortar have different co-efficient of expansion, that of cement eing 0.000012 while that of mud is 0.000004. Hence under temperature variation, the two materials move at different rates, and the bound between them is broken, and the cement mortar peels off. While unstabilised mortar makes a very good bond with mud walls, it tends to absorb water easily. The surface swells up and under driving rainfall, it is washed away.

However, thorough practice and study have proved that very weak sand/cement mortar 1:12 mix gives a better adhesion to the mud fabric. Also, bitumen stabilised soil rendering of mixes varying between 1:10 for external walls to 1:16 for internal walls have been found to be adequate. Moreover, plaster thickness of 1/2 (12 mm) for internal surface and 3/4" (20 mm) for external walls with a two-coat line wash coupled with ample eaves are adequate to withstand weathering effects on the walls. (Concrete hollow block house: 1/2" thickness of mortar--cement/sand--1:6 for internal and external walls. Soil/cement house: 1/2" thickness of mortar-cement/soil--1:12 for external walls and 3/4" thickness of mortar, 1:16 for internal walls).

Even though the external walls of a soil cement house take a 1/4" thickness more of mortar, by comparing the cement components, the mortar for soil/cement houses is less than half the cost of the concrete house unless the same mortar composition for concrete houses is incorrectly used for soil/cement houses, which I believe is what the U.N. experts did. It must, however, be noted that the size of the cost of the foreign imported material component is the critical issue to the poor developing countries.

So far one can see that the "narrow measure of appropriate" Witold
talks of, applies in his own case. How can one project in an area as far back in 1966 be generally applicable to all circumstances? Even then, the techniques used could be faulty, I am convinced.

Furthermore, Rybozynski points out that soil/cement blocks can only be "extremely beneficial", especially in the rural areas where conventional cement blocks are not available, and where earth bricks are already a well-established building technique. The fact is that there are rural poor as well as urban poor who are deprived of adequate housing partly by official housing regulations which have no room for soil/cement blocks as a decent building material. It is not a matter of availability, rural or urban. It is a question of affordability of any material in question.

If I am correct, Rybozynski seems to be convinced that earth bricks are already well-established in the rural areas. But in the developing countries, most of the old original neighbourhoods were built with earth construction techniques, which proves that the techniques were better known and better established in the bigger settlements. It is only in the course of time that people have been forced by circumstances to shift to foreign materials. If today earth bricks construction is a well-established technique in the rural areas, it is due to the fact that the authorities would find it almost practically impossible to enforce their borrowed regulations on the rural communities.
RECOMMENDATIONS

The present Ghana official housing standards must be overhauled, but first a research programme should be undertaken including the following steps:

a) Due consideration must be given to the study of traditional building practices, and the following need much attention:
   i) dampness drawn up into earthed walls;
   ii) termites attack on the foot of earth walls foundations leading to wall collapsing;
   iii) beaten laterite floor treatment to stand wear and tear, and less frequent treatment;
   iv) foundation erosion from the rains;
   v) types of wall plastering materials such as cow dung, cotton seed tar, etc.;
   vi) termites attack on wooden posts placed in the ground, and wooden frames for doors and windows;
   vii) lime as a stabilising agent; and
   viii) roofing materials like thatch and mud.

b) Research on traditional building practices should be intensified; and the following should be critically examined:
   i) good cross-ventilation while still maintaining excellent heat insulation;
   ii) utilisation of space.

More saving in housing costs can be made by economising on space and amenities. Reducing space standards can help considerably in cities.
with high land costs. Sharing toilets and water brings public housing within reach of a much greater proportion than housing with individual services, and this, in any case, has a value of its own in preventing isolation and developing community contacts. Further savings can be made by providing multi-family dwellings with shared outer walls, foundations, roofs and staircases, rather than free-standing individuals.

iii) household patterns;

iv) craftsmanship;

v) labour-materials cost ratio, leading to price range of houses built with traditional techniques.

c) The various land tenure systems should be carefully studies for a common device to regularize the tenure system or make the customarily deal technically legal without any bureaucratic cost like the registration of land titles with the Lands Department to the disadvantage of the poor.

d) The research must reflect on the two geographical areas of Ghana; (i) the humid tropical belt of the south and (ii) the dry Saharian belt of the north since the two climates have different relationships to the types of traditional building practices in the country.

e) These research results will then be the cornerstone of a new set of Housing Standards--The Cultural Standards. Although each region should have its appropriate regulations for local needs, the following should be considered as the basic guidelines for the cultural housing standards:

1. Application and Registration.
a) Room should be given to the traditional land tenure system.

2. Design Standards

a) Any professional in the construction industry could design provided the designs presented for approval include the name and address of the professional involved in its preparation.

b) The whole design from housing to communal buildings and layout should be based on traditional concepts (where practicable).

c) Encourage the use of local building materials to the maximum.

d) Buildings should be planned and sited so that they are suitably integrated into the surrounding environment; they have proper relationship to each other in terms of bulk and form; their placement will ensure adequate daylight for occupants and provide adequate privacy for users.

e) Courtyards should be encouraged since they will cast shadow which will let them become livable spaces for human beings and plants.

f) Although sunlight is undesirable during most of the year inside buildings in tropical areas, it is necessary in some spaces particularly in bedrooms where the eastern sunlight contributes to improved health. Adequate sunlight is also healthy and necessary for internal courtyards and service backyards.

i) Internal courtyards should not be less than 12 square meters in areas if they are to provide light for rooms. The minimum width of courtyards in this case should be 3 meters and the maximum height of the building should not be more than 3 times the minimum width (9 meters).

ii) To get rid off undesirable sunlight, external walls should be protected by roof overhangs or vegetations. Roofs should be well-
ventilated to drive away trapped pockets of hot air.

g) The requirement for cross-ventilation is mandatory.

h) **Privacy:** The design of buildings should be carried out to prevent the possibility of overlooking between external windows to other living, sleeping or service quarters of the building.

i) The house entrance itself should be designed in a way not to expose the internal part of the space if the doorway is open.

j) More than one entrance for each dwelling should be encouraged, main entrance and back or service entrance.

3 Utilities Services

a) Rainwater drainage: all dwelling units should have adequate drainage facilities. No drainage should be permitted through adjacent properties.

b) Orienting the urban environment to man rather than the automobile.

i) A complete separation between pedestrian and vehicular traffic networks. Where practicable, vehicles should not be permitted to enter neighbourhoods such as in the gridiron system.

c) The quantity, location, design and management of usable public or command open space and any related facilities must be designed with regard to:

i) the overall housing density,

ii) the social character of the locality.

A permanent commission to administer the new code should be set up to hold hearings and revise and review the regulations in the light of the recommendations, the experience of the country and of other tropical areas.
f) Immediate action be taken to revise some of the present regulations and by-laws which hold up progress and increases costs, since new regulations take a long time to formulate. Revision of the present regulations will also take some time, some of the most important changes, however, can be introduced forthwith, in particular those concerning compacted earth walls. The restrictions could be removed and replaced by rules ensuring that housing is adequate from these points: the functional and the technical. Note that this would also assure good aesthetic. After all, these characteristics depend less on the materials used than on the plans and the care with which they are carried out.

g) If the creation of a permanent commission to deal with the revision of the present regulations and by-laws plus the proposed Cultural Housing Standards will bring financial burden to the government or increase the already over-burden government bureaucracy, the Building and Road Research Institute in Kumagi can be asked to take over the task since the institute was purposely set up for such tasks.
CHAPTER FIVE


IMPLEMENTATION

Before the Cultural Housing Standard is implemented, it must be backed by a legislative instrument. The present military government of Ghana could easily promulgate a decree to effect its legality. It is not impossible, however, for a democratic civilian government to legislatively sanction it, although it could take some time for parliamentary procedures.

After the Cultural Housing Standards have been legalised by the central government, the new regulations will definitely take a long time to formulate, since they must wait for study experience to prove the local methods and materials adequate in performance. However, before then, some important changes can be introduced in the present regulations. Some of the most important local materials are prohibited in urban areas under existing regulations and often prohibitions depend less on the materials used than on the case and skill with which the work is carried out. Sound construction, for instance, can take place with compacted earth or swish and the restrictions against the use of these materials should be removed. More emphasis should be placed upon inspection and approved of the methods by which the material is applied.

Rules and regulations should vary between one region and another as would standards for the large city and small, the city and the suburb, the city and the rural area. In revising building codes, the Civil Engineers' and Contractors' Associations should be consulted and heard in addition to other experts of housing.

There are a number of building materials that can be made locally and an effort to introduce them with government aid would probably yield
beneficial results. Small industries and workshops producing and selling local building materials and prefabricated building components should be encouraged and helped. Materials that lend themselves to such local manufacturers' are: (a) baked clay products, e.g. bricks and tiles; (b) wood components, e.g., doors, windows, light framing, shingles, bamboo matting, etc. Baked products such as bricks and tiles could be undertaken in strategic areas by handicraft, so that little capital would be required to launch the enterprises. In Turkey, for example, brickmaking is a small-scale individualized enterprise serving the surrounding rural and urban areas. Small-scale localized operations should be encouraged experimentally with government aid whenever clay and scrap timber for fuel are available. Operations should be widened as experience indicates. Training instructors, however, are essential. It is, therefore, recommended that a general policy be evolved promoting such small-scale workshops throughout the country instead of a large centralized operation in say Accra, the national capital.

Some prefabricated wooden components can also be manufactured in factories located in the forest areas or by local artisans. Building and Road Research Institute should then study these standard components. Here too, less risk would be involved in setting up smaller factories than area involved in larger undertakings. Roofing materials of various types can be manufactured--not only clay tiles but shingles from better seasoned lumber in abundance in the country's forests. Other local products such as grass and reed-matting for ceilings and bamboo-matting for verandahs and fences and screens can also be undertaken.
During the period of the formulation of the new regulations, some demonstration houses should be built throughout the country especially in the rural areas where the majority of the population live to prove to them that their cultural heritage if cherished with proper care, will be of a better help to them than what they may imagine.

After the formulation of the new regulations, then all governmental housing projects (where practicable) must be based on them as an indicator to the public the seriousness of the government's intentions and further, to remove from people's minds the present public bad image for traditional building practices.

Financial institutions might consider prospective home builders using the Cultural Housing Standards for home mortgages if the mortgages could be backed by the central government since in most cases the rural and the urban poor do not have the necessary collateral. In order to attract prospective home builders, the central government should require the various financial institutions to charge lower fixed rates of interest on mortgages, the difference being subsidized by the central government. Here, strict scrutiny is necessary to avoid the already privileged taking undue advantage of the system to the detriment of the under-privileged.

Individual liberty is to be prized highly but only to the extent that the liberty of individuals does not consist of inhibiting social harmony. People may do as they like, but only so long as doing so does not prevent others also from doing as they like. So in order to foster national reconciliation on this issue, those who think they can afford the high standards of the present regulations should be allowed to build with them, for any abrupt abolition of the present official housing
standards may create some social and political resentments from the privileged class who regard their built-environment as a significant reflection on their social strata in the society.

With the Cultural Housing Standards, the government then could provide additional help to the marginal urban masses by going into site-and-services programmes. It will cost less if the government negotiates land deals with the traditional owners, and, with reasonable housing standards, some international agencies may be sympathetic to come to the aid of the government to help tackle the acute housing problem. Also, with already serviced plots, the urban low-income groups will then find it financially bearable to embark upon self-built shelters using the new standards. Even with legal titles to their pieces of land, some of the beneficiaries may win the confidence of the local financial institutions for housing mortgages.
Possible Problems with the Proposed Cultural Housing Standards

No doubt the Cultural Housing Standard may face stiff opposition, mainly from the rich and the middle-income groups. They may see it as a regressive approach as far as housing is concerned. Greater support may come from the rural community and especially the urban poor, but they are not policy makers. Even then, some of the urban poor may be easily corrupted into believing that the Cultural Housing Standard's proposal is another optical illusion the government is using to suppress their "social upliftment" in housing.

Yet, I believe that effort to achieve a redirection of national priorities can only find support if it begins by mobilizing local communities on the basis of their right to self-determination. They constitute the only potential pressure groups which can be mobilised immediately, and they probably can only be mobilised on the grounds of immediate and local benefit, the position the Cultural Housing Standard assumes.

However, there will still be major problems in interpretation, implementation and its reconciliation with the present official housing standards at the initial stages. Admittedly, building technicians such as city building inspectors, will find it very difficult to detect bad practices from the beginning. Huge sums of money may have to be sunk into workshops for orientation courses for the short-run, but in the long-run the multiplied effects of benefits may be worth the initial costs.

Last but not least, the Cultural Housing Standards may not be practicable at all in some urban areas where land is very scarce, and
high densities (in terms of tower blocks) are the best way of optimising urban land-use. Hence, my earlier suggestion that rules and regulations should vary between one region and another as would standards for the large city and the small, the city and the suburb, the city and the rural area. This proposal is not an end in itself. It is a means to minimise the importation of materials for housing because of scarcity of foreign exchange in Ghana. It gives greater latitude to the low-income groups, especially the urban poor, for decent affordable housing by maximising indigenous resources.
CONCLUSION

In most Third World countries, the urban poor were first driven from the rural areas by poverty, drawn by the cities' promise of wealth where average incomes were two or three times higher than rural areas. The colonial powers first built these enclaves of privilege, modelled on western cities, and established high rates of pay for the higher government bureaucrats and managers who inhabited them. Independence brought no change of approach. The westernized elites who ran the new governments had as their main ambition the extension of the modern sector. They concentrated on modern capital-intensive industry, which cost a great deal and therefore could provide few jobs.

In the housing sphere, they built housing to excessive western standards, which only a small minority could afford. Not only that, there was and there is still misplaced fascination with "modern" materials. But these materials are imported and they exert strenuous constraint on the country's foreign exchange position; and in most cases, the country's economy can no longer bear the pressure.

Almost every Third World city is a dual city—an island of wealth surrounded by a belt of misery. Outside the bright, shining modern city of skyscrapers, flyovers and desirable residences, the poor are camped in squalor, disease and neglect, in shacks and huts of plywood, cardboard, rusted corrugated iron roofing sheets, and usually without clean water, sewers, health centres, schools, paved roads or paying jobs.

Nevertheless, housing planners are insensitive to the problems
caused by continuing adherence to inappropriate building standards from the colonial periods. The haphazard borrowing of other countries' codes and standards is one of the most costly aspects of building code practices. The code becomes too costly to comply with or too impractical to follow; violations are inevitable and soon the code either becomes meaningless to majority of the poor or it limits building progress. Yet, the housing planners insist that local governments enforce the codes vigorously. City governments, in turn, send their building inspectors to the field. Some of them either face humiliation or accept bribes in attonement for home builders breaking any minor building code. The proof of burden, therefore, falls on the poor who cannot pay bribes.

A vicious circle operates: housing planners dismiss traditional building practices because they are "inferior". And researchers do not give much attention to improving them because housing planners are not interested.

Government house-building programmes are a failure because most urban poor cannot afford even the cheapest house. Housing programmes for the urban poor, therefore, end up supplying houses for middle-income groups—the open secret of the housing policy of Ghana. Self-help, squatter upgrading and site-and-services schemes seem to offer the best prospect for the poor. But the current housing standards make such schemes go beyond the means of the poor.

Building regulations exist in all countries. They are essential, as a guarantee to society that certain minimum standards will be observed even under unfavourable conditions. But, when they are based on out-of-date techniques and routine, they often conflict with the public interest by hampering the efforts of innovators and by stultifying progress.
Their function is to define, not means, but ends. They must not be fixed, but must be subject to amendment and review, especially in the case of cheap dwellings in rapidly developing tropical countries, where information on economic needs and scientific data is badly lacking.

It is possible to do a great deal to improve the quality of life for the marginal urban masses, even in their present state of poverty. Governments have limited resources yet. The problem is not to see how many people they can house to uniform high standards, but how, given the lack of resources, a basic level of housing, services and utilities can be provided for all the urban poor or at least greater part of them within a short space of time. There are three possible approaches. First, the cost of new housing and services can be cut drastically by reducing standards to a realistic level that governments and people can afford; hence, my call for the Cultural Housing Standards. The second is to accept and legalise existing "squatter" (depending upon its nature) settlements and to make them more habitable, by giving residents secure tenure (where it does not exist) and laying out the roads, water, light, schools and health centres to which they have as much right as the privileged inhabitants of the modern city. The third approach--necessary for new migrants and people rehoused from those shanty towns that are incapable of rehabilitation--is to provide a small, ready-serviced plots of land and leave new squatters to build their own houses without much compliance to the rigid official housing standards although it must be ensured that builders incorporate more than a minimal degree of structural integrity in their products. It must, however, be emphasised that all the three approaches are complementary, and they can succeed best when the people are mobilized to participate in improving their own
environment.

Every day brings new knowledge, and the building regulations must be elastic enough to enable that knowledge to be put to practical use. Hence, the aim of building regulations should be to lay down a certain number of simple rules guaranteeing the quality of housing. These rules, regularly reviewed in the light of progress, should be compulsory for builders in general, but performance criteria preference should be given to research organizations, qualified architects and civil engineers, who can produce the same quality by methods different from those specified in the regulations. This exception would be applied in particular to the Building and Road Research Institute, since their precise function should be to study and try out new methods and to test methods in use. Qualified architects and civil engineers desiring to use methods not covered by the new regulations should be allowed to do so on the advice and under the control of Building and Road Research Institute (B.R.R.I.).

The government should provide the B.R.R.I. with money enough to construct prototype houses using Cultural Housing Standards for various areas of Ghana, make more accurate costing studies, determine the behavior and life of materials, the practicality and efficiency of design and structure against the elements and the guiding of prospective owners as to the type of houses best suited to their needs.

A permanent commission responsible for reviewing and bringing the regulations up-to-date in the light of research results and of progress made in Ghana and other tropical countries, will be essentially necessary. An alternative Cultural Housing Standard based on need rather than ability to pay, may offer millions of working people a decent standard of accommodation which they would otherwise have found
unattainable. For many of them, it may even break the link between formal standards and bad housing.
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