

COMMUNITY PARTICIPATION IN LOW INCOME HOUSING

By

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***In the Name of God, Most Gracious,
Most Merciful.***

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ABBREVIATIONS

CFE	:	Credit Foncier d'Egypte
HPU	:	Housing Project Unit
JHP	:	Joint Housing Project
MOH	:	Ministry of Housing
PIV	:	Project Implementing Unit
USAID	:	United States Agency for International Development.

INTRODUCTION

INTRODUCTION

The housing problem in Egypt is affected by socio-economic and physical factors. These factors are integrated in different degrees and on different levels. The socioeconomic factors reflect the role of community participation in the problem. The role of the community has been restricted by a number of rules and regulations which limited its participation in solving part of the problem, specially for the low income groups. For this reason low-income groups tried to solve their problems by building their informal housing by their own means regardless of any rules or regulations in order to satisfy their own needs.

This study aims to achieve the most effective participation of the community in solving the housing problems of low income groups in Egypt.

The Governmental housing projects in Egypt did not meet all the housing requirements specially for the limited income groups either in number or quality. Although the phenomenon of informal housing has its negative side, specially in terms of utilities and services, but it has its positive side which shows that the low income groups are capable to build their own dwellings with the minimum interference of local authorities. The objective of the study is to stress on this positive side and try to give means of organization of community participation in low income housing projects in order to avoid the negative side of informal housing.

The study refers to some approaches of community participation and reviews both the international and the Egyptian experience, respectively. The study concentrates on the ways and means recommended to increase the role of community participation in solving the problem of low income housing. Stress is laid on the question of training programs and the search for appropriate building technology.

The study examines in more depth the degree of community participation performed by organized communities or by individuals in both governmental or private housing projects. In this respect the study summarizes the different factors affecting the process of community participation, including organizational aspects as well as planning, financing, implementation, management and maintenance. Because the Egyptian experience is limited in this field, it was necessary to study the experience of other countries.

Finally, the study tries to give suitable criteria to encourage community participation in low income housing in Egypt, taking into consideration both the economic and social constraints. The physical aspect of community participation has been examined within the socio-economic frame-work of the country. Consequently the study refers to the ways and forms necessary to achieve this target specially through training programs for the different sectors of low income communities. The study also emphasizes the fact that community participation in solving the problem of low income housing has to be initiated by the community with the minimum interference from local authorities. In general, the idea of community participation in solving the greater part of the housing problem has to be considered a nation objective.

The study shows the influence of community participation on planning, architectural design and building process as it is inappropriate to start any housing project without involving the users. The housing program which is based on the needs and requirements of the inhabitants has to be transferred to plans and designs required for implementation.

The planning process and the architectural procedures are both based on the socio-economic aspects involving community participation. This means that community participation is an important part in both the planning and architectural process. On the other hand, community participation in improving the existing housing stock

or in the building of new dwellings requires special consideration which eventually affects the building industry including building materials and methods of construction. This is the base for the use of the appropriate technology which is appropriate for community participation.

Architecture and planning is always the product of socio-economic interaction. Community participation is one part of this interaction.

Community participation was identified at the United Nations Conference on Human Settlements, held at Vancouver in Canada in 1976, as one of the main issues in the development of human settlements: 'Public participation should be an indispensable element in human settlements, especially in planning strategies and in their formulation, implementation and management. It should influence all levels of government in the decision-making process to further the political, social and economic growth of human settlements, (1).

Also, there were discussions on the role of community participation in human settlement projects, in the ninth session of the Commission on Human Settlements, held in Turkey from 5 to 16 May 1986(2). One of the main resolutions requested that governments are urged to focus attention on the self-help capacities of communities to deal with their human settlement problems, aiming at establishing support mechanisms for these communities. They are also urged to develop administrative structures to strengthen local and sub-local governments, and to review human settlement legislation and procedures for planning and implementation in order to promote community participation.

1 United Nations for Human Settlements (Habitat), Community Participation in the Execution of Low. Income Housing Projects, 1984, p. 1.

2 United Nations Centre for Human Settlements, Habitat News, Vol. 8, No. 2, August 1986, p. 12.

CHAPTER ONE

COMMUNITY PARTICIPATION

1.1. Approaches to Community Participation

1.2. Ways and Forms of Community Participation

1.1. Approaches to community Participation

The meaning of community participation varies according to the different approaches reflecting the point of view of those involved in this operation and their socio-economic background. Referring to R. Skinner, community participation, from the national point of view, can be both a potential threat to the established power and a means of presenting a popular approach to the problem of the poor. From the implementation agencies point of view, community participation may be a way of making a project acceptable to the local population, as it will be cheaper and smoother to implement. From the residents point of view it means a role in the development of their environment where they can choose the improvement option, and reduce the project costs (1).

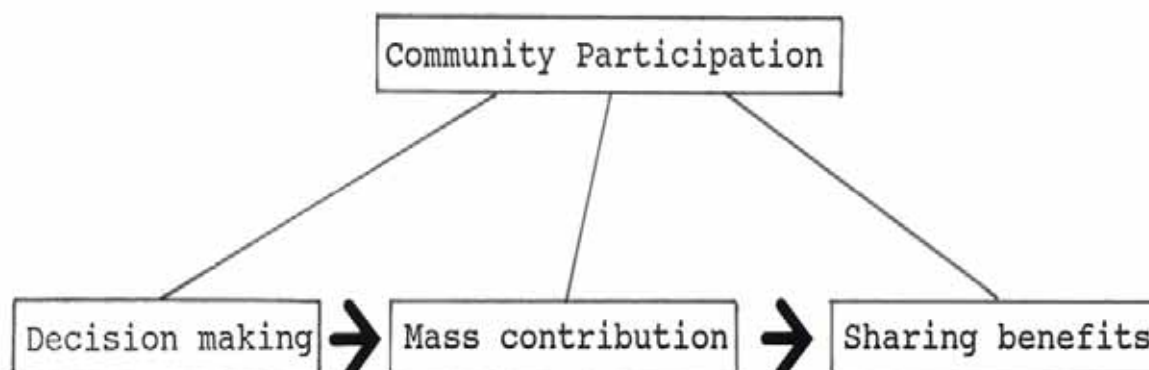
Community participation is often seen as involving the community as labour in a project. This view could be better defined if it aims to involve the community in maintaining what they have implemented. It would be worth if it is considered as a mean for reducing the component labour cost in the project budget.

Referring to A. white (2), community participation according to the World Bank definition, has three dimensions; the first is the involvement of all those affected in decision-making about what should be done and how, the second is mass contribution to the development effort, the third is sharing in the benefits of the programme.

1 R. Skinner, Community Participation in Third World Housing. Potential and Constraints, 1984, p. 564

2 Alastair White, Community Participation in Water and Sanitation. Concepts, Strategies and Methods, 1981, p. 1

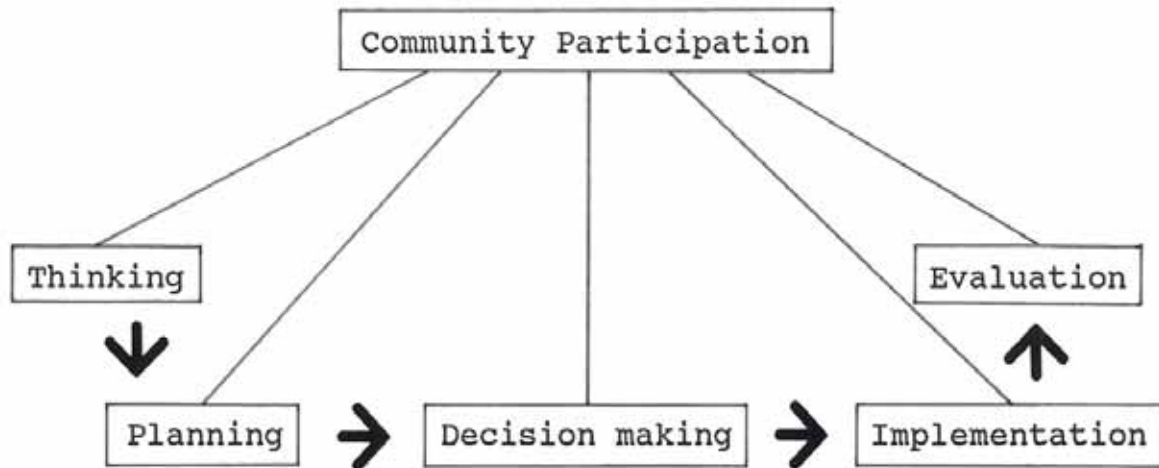
WORLD BANK APPROACH



This definition could be understood in a wide meaning in terms of the involvement in the entire political and economic process of the country. This meaning is extremely different from reality where the community participates only as a labour. White has his own confusion about the term "sharing in the benefits of the programme" as there is a difference between projects giving services to the people and projects where people work in it.

White's own definition of community participation is "the involvement of local population actively in the decision-making concerning the development of projects and their implementation". It is difficult to see community participation in the implementation process unless there is at least some degree of sharing in decision-making. So the word "involvement" which was understood as assisting in the implementation of plans already made in order to provide cheap labour, must include the involvement in thinking, planning, deciding, acting and evaluating.

WHITE'S APPROACH



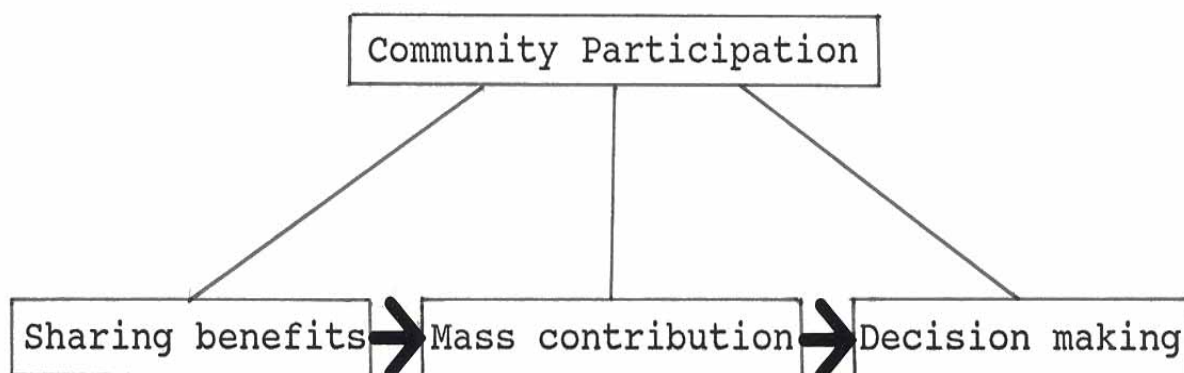
The study of the United Nations and Department of Economic and Social Affairs shows three basic ways to view community participation in development:

- a. First is mass sharing the benefits of development.
- b. Second is mass contribution to the development effort.
- c. Third is decision-making in development.

Community participation as a process can be defined as active and meaningful involvement of the masses of people at different levels of development. The participation could be active in the decision making process for the determination of social goals and the allocation of resources to be achieved. It also would be expressed in the voluntary execution of resulting programmes and projects (1).

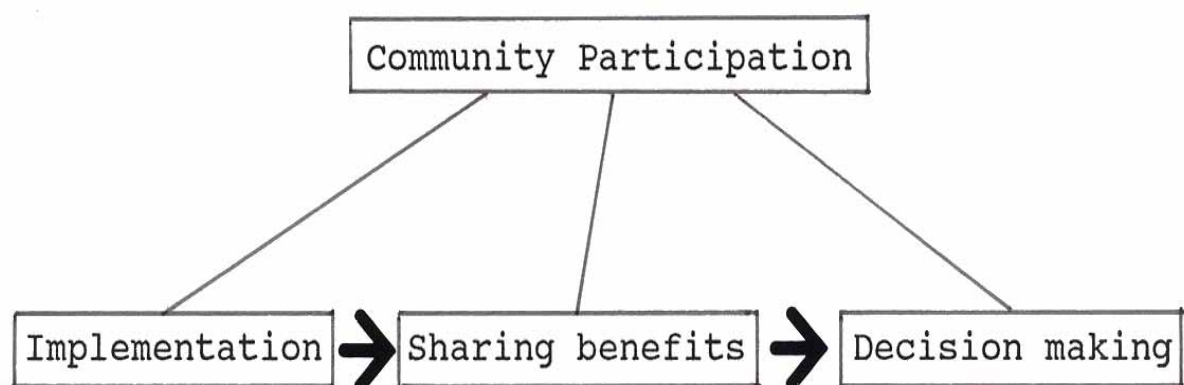
1 United Nations Department of Economic and Social Affairs, Population in decision-making for development, 1975, p.1

**APPROACH OF UNITED NATION DEPARTMENT
OF ECONOMIC AND SOCIAL AFFAIRS**



Community participation has been defined by the habitat as the voluntary and democratic involvement of people in contributing to the implementation of the project, in sharing the benefits and in decision-making with respect to setting goals, formulating the project, preparing and implementing the plans.

HABITAT APPROACH



It is the responsibility of any project staff to explain to the community the objectives and basic principles of the

Project programmer so that the community is able to participate in planning and decision-making (1).

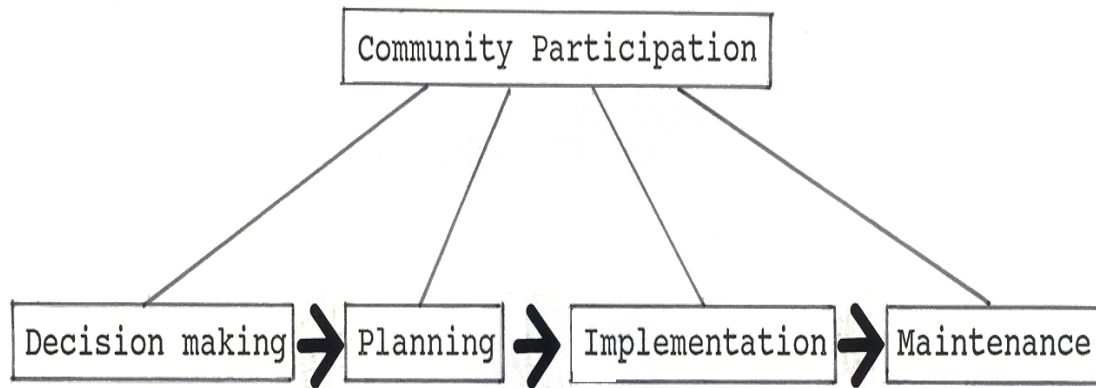
Caroline Moser gave two definitions of community participation in urban development project, one as a mean and the other as an end. Where participation is presented as a mean, it generally becomes a form or a method of mobilization to get things done. This can equally be stated as directed from (top-down) mobilization or from (bottom-up) "voluntary" community based mobilization, to achieve a specific development objective or obtain a larger immediate share of resources. Where participation is identified as an end, the objective is not a fixed development goal but a process whose outcome is an increasingly "meaningful" participation in the development process. In this case the real objectives of participation is to increase control over resources (2)

Comment

From above approaches, it is obvious that their different points of view are stressing on community participation in decision-making so as to make it easy for them to participate in the maintenance of the project. In reality the community is involved mainly in the implementation of the project. All members of the community (beneficiaries) have to get the chance to express their needs freely. They have to be involved in all steps of any project, beginning with the decision making and planning, then the implementation of what they wanted and ending with the maintenance. They have to be fully involved in all steps of the project with the support and the assistance of the government. The process of community participation in housing projects for low income groups eventually will give the

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- 1 United Nation Center for Human Settlement (Habitat), Community Participation for Road Planning in Squatter Settlement Upgrading, 1983, p.3.
 - 2 Caroline ON Moser, Evaluating Community Participation in Urban Development Projects, 1983, p. 3

Following approach for planning, design concept and implementation:



Planning and design ideas are derived from the socioeconomic implications of community participation policy.

1.2. Ways and Forms of community participation

There are many ways and forms of community participation in developing their own environment or in improving their living condition. These forms of community participation could be classified and identified separately. There are almost ten forms of community participation which could be categorized into similar groups of activities, according to White classified form. These ten forms are: consultation, financial contribution, self-help of beneficiaries, self-help by whole community, specialized workers, mass action, collective behavior, endogenous development, autonomous projects and self-sufficiency(1).

1.2.1. Consultation

Prior to consultation, there is a need to study the social and cultural structure of the community. This is carried out usually by the local authorities. It is preferable to get this information from the community members themselves, because they are familiar with their own situation. There are many ways to gather this information. They could be gathered by a person from outside the community who is familiar with the issues involved in the community. This person might be a local authority official or a religious leader. This information could be provided by the community during the planning process but it needs to be supplemented with information gathered by the staff of local authorities or development agencies during the informal contact with the community members. In practice, the local staff who will implement the project within the community are generally familiar with most aspects of the cultural and social structure of that community (2).

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- 1 Alastair White, Community Participation in Water and Sanitation. Concepts, Strategies and Methods. 1981, p. 27.
 - 2 Carole Radoki, Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes. 1981, p. 66.

Ways and Forms of Community Participation

Consultation

Financial contribution

Self-help projects by Groups of Beneficiaries

Self-help projects involving the Whole Community

Community special workers

Mass Action

Collective commitment to Behavior Chang

Endogenous Development

Autonomous Community Project

Approaches to Self-sufficiency

Consultation means involving the community to some degree in decision-making concerning the proposed project. It is done to meet the user's needs. It is a kind of contact with the community to know their actual needs and also to acquaint them with the point of view of the concerned authority. This kind of communication involves some degree of negotiation. In this case, there are two levels of consultation. The first level is with community representatives or leaders who have the opportunity of wider consultation within the community where the decisions are formally made. The second level is with all sectors of the community.

Consultation with the members of the community gives to go them the opportunity to share some responsibilities and farther in planning other activities.

1.2.2. Financial contribution

This is a cash collection made by and within the community, generally prior to, or at, the time of implementation of a project as a contribution to carry out the constructions work. This financial contribution could be done in many ways by the community as in the following forms:

- a. Payments as fees for services provided by a development agency, these payments are paid after providing the services or before that. It is important to identify some differences between the payments by individual families for a utility connection and the payment by the families as part of community for a communal facility. The other form is communal payment for a new facility made by a local authority from its general funds or as a contribution. Specially raised for a new facility in the community where the local council has no general funds.
- b. Contribution by the community through voluntary collection where rich members may wish to contribute in order to gain a social status.

- c. Payments of equal amount of money demanded from the people or households, whose income may be unequal, and in some cases this is not fair except if it is related to the index of family's income or varied according to the value of the house.
- d. The collection of community fund through local taxes on entertainments which in some countries seem to be the easiest method.

1.2.3. Self-help projects by Groups of Beneficiaries

This form of community participation is carried out by specific groups of local inhabitants who contribute with their labour and perhaps other inputs in the implementation of a project with the assistance of an external development agency. In this case the participation of the whole community is more appropriate than a special group of beneficiaries since all community members are going to use the project services (1).

1.2.4. Self-help projects Involving the Whole Community

This form of community participation is done by all the families in the community. They contribute to the project as labour or in other form of input with the assistance of an external development agency. This kind of involvement needs to be based on an agreement between community representatives and the project developing agency. This is done to ensure the general acceptance of the community. In this case the representatives of the community will have sufficient authority to organize their contribution. It is difficult to get people work for free on a project if they cannot see a direct relationship between their effort and their subsequent benefit. Therefore it is important that the work required from the community must be to the benefit of that community and not of others. The development agency has to make its role and that of the community clear from the very beginning.

1 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 170.

White(2) classifies the different ways to get people work for the project as follows: a. provision of food for workers, b. provision of partial payment or payment at less rate than the minimum ways, c. Reduction of rates of local tax for the individual household involved in the project.

1.2.5. Community special Workers

This form of community participation is achieved through training and appointment of one or a few community members to perform specialized tasks. The training and technical supervision are carried out by an external development agency. In some cases, a form of community authority may have a kind of supervision over the specialized workers. In this case sufficient consultation with the community before going in training is required in order to define their actual needs, their technical knowledge and skills. It is also necessary to know how to organize their relationship and who is responsible to do what, also their ability to carry on the maintenance of what they have achieved.

1.2.6. Mass Action

This form of community participation is achieved by the collective work of the community members without a major input from an outside development agency. Often such actions are directed to environmental improvement. In this form the organized community basically carries out the activities rather than merely contributes to it. It is the whole community which carries out the work as a collective effort rather than either a group of beneficiaries or a local authority.

In certain political systems the governments pay attention to mass action in order to enjoy the confidence of

2 Alastair White, Community Participation in Water and Sanitation. Concepts, Strategies and Methods, 1981.

the broad masses of population(1). In their formulation of policy they give great importance to mass action in their development programs. These governments launch their campaign for community activity through the mass media, the local authorities, party organizations, voluntary development agencies from members of the communities themselves.

1.2.7. Collective Commitment to Behavior Change

This form of community participation is performed when the community makes a collective decision to change customs or personal habits. In this case collective social pressure is exercised for the realization of such change. As White puts it "community participation is involved when an explicit decision is collectively taken". This form of community participation may be found in small communities which can take collective decision to change their behavior. The same form may also be found in larger communities but with a degree of internal cohesion in terms of social structure, or cultural and religious cohesion. To achieve this form of community participation it is necessary to identify the customary behavior needed to be changed. This could be built up in consultation with the community, then by improving the general understanding of the community to what should be changed and also by increasing the motivation of each community member in order to facilitate changes in any way feasible(2) .

1.2.8. Endogenous Development

This form of community participation is achieved when there is an autonomous generation of ideas and movements within the community for the improvement of living conditions. In this case it is possible for the community to

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- 1 Harrington E. Jere, Paper on Community Organization and Participation in the Lusaka Squatter Upgrading, 1980, p. 2
 - 2 Alastair White, Community Participation in Water and Sanitation. Concepts, Strategies and Methods 1981, p.101.

get some help from an outside development agencies but not totally depending on them.

The concept of this form of community participation is that the people themselves decide what they want, as they are in the best position to know what new development is needed (1). Sometimes they do not know how to develop their movements because of lack in self-confidence, or in knowledge, or in trusting the authorities. The solution of this situation could be attained by the help of an outside development agency which studies the situation of the community and helps them to overcome their problems (2).

1.2.9. Autonomous Community Project

This form of community participation is found in projects where any external resources are paid for by the community with funds raised internally, including the hiring of any outside expertise or professional staff. Such projects become therefore under the community control. There are two points of view regarding autonomous community projects. The first argues that there must be a governmental agency which takes most of the decision-making in the project with respect to community representatives. The other argues that the community must be responsible for everything and does not rely on government funding or support for its projects. The problem which could appear in that respect is that if the community have not the technical knowledge required for the project, it could not stand this situation even if it has full control over the project. The community could tackle this problem through national control of education and training, if necessary, through the training of community members themselves (3).

1 Dr. Abdekarim Al. Ahwal, The Phenomenon of Individual Participation in Environmental Improvement and Changing Popular Housing Types -El Kalafawy District-Shobra, 1983 (in Arabic).

2 United Nation Center for Human Settlements (Habitat), Promoting Organization Self-help through Cooperative Modes of Participation, 1984, p. 30.

3 *ibid*, p.4

1.2.10. Approaches to self-sufficiency

This form of community participation could be achieved through projects in which the objective is to satisfy local needs as far as possible by using local materials and manpower directly and not by depending on goods and services from outside or buying them after collecting funds. This approach to self-sufficiency is generally a cheap one and puts less burden on the national economy including the transport system. Moreover, it makes use of indigenous knowledge and useful skills which might otherwise be lost. This is the form which could be applied to the construction of new communities located away from the existing urban areas (1).

The above forms as proposed by White could be adjusted according to the local conditions and the socio-economic characteristics of the community. The validity of each of the above forms could be examined within the national policies of community participation. These are generally the possible forms where community participation could be applied. Each form will require certain planning approach and a relevant architectural concept. It is important to emphasize the fact that community participation in any form is a socio-economic phenomenon which has to be reflected on the way of design and the planning process for any housing project for low income group. The problem therefore is not in planning or architecture as much as in applying one form of community participation as part of a national socio economic programme.

1 Alastair White, Community Participation in Water and Sanitation Concepts. Strategies and Methods, 1981, p. 138

CHAPTER TWO

INTERNATIONAL EXPERIENCE IN COMMUNITY PARTICIPATION IN DEVELOPING COUNTRIES

- 2.1. Lusaka Squatter Upgrading Project in Zambia.
- 2.2. Building Together Project in Bangkok, Thailand.
- 2.3. Community Building in South Korea.
- 2.4. The Freedom to Build Project in the Philippines.
- 2.5. Comparative Analysis of the International
Experiences.
- 2.6. Comment.

Introduction

To learn more about community participation it was necessary to review some examples in other countries, Specially those of the Third World. We should take into consideration the differences in cultural, social, and environmental factors and to compare them with the Egyptian experience in this field. Due to the limited scope of the Egyptian experience, it will be necessary to benefit from the experience of other developing countries. The Egyptian experience in community participation was induced by other foreign agencies and this is why it took its official form, while the experience of some other countries was induced by the people themselves. There is a great difference in both cases. It is also worth noticing the level of community participation in both the Egyptian and international experiences.

Because the international experience is wider than that of the Egyptian one, it is important to know more about the appropriate building technology applied in other countries and how financial problems were tackled. Generally, the international experience shows great interest in community participation as a very useful way to solve the problem of low-cost housing in developing countries. It is noticed that the publication on community participation in other countries have been given proper care and attention relevant to the importance of the issue.

The international experience in community participation has been reviewed within the context of organization, awareness, decision making, management, implementation, cost recovery and maintenance.

2.1. Lusaka squatter Upgrading in Zambia

2.1.1. Description of the Project

The Lusaka Squatter Upgrading project proposal was prepared in 1973 by the National Housing Authority of Zambia. Implementation began in 1974 and is now mostly completed. The project comprised the provision of services to approximately 17.000 dwellings in the major squatter settlements ' (Fig. 2.1) besides preparing and servicing 7.600 plots in adjacent over spill areas in order to accommodate household whose houses were affected by the upgrading process(1) (Fig. 2.2).

Legislative reform was a prerequisite for the project and provided for the introduction of 99 years certificates of title of plots in site and service areas and occupancy licenses giving rights of occupancy for 30 years to owners of houses in squatter areas. Thus ensuring security of tenure as a precondition for encouraging investment in housing construction. Credit designed to enable the construction of a basic core house was provided for resettlers in over spill areas.

Technical assistance was provided to house builders and improved in the form of alternative house plans, as well as advice on improved construction techniques and the use of alternative building materials. Building materials, reasonably priced, were made available to project participants through material stores run by the implementing agency.

One of the goals of the Lusaka project was to implement the concept of participatory democracy on a neighborhood level. When Zambia's constitution was changed in 1972, and UNIP became the single political party, the political system was termed a "one party participatory democracy". The concepts of "participation" and "democracy" are, therefore, a national political philosophy, which provides a context within which the squatter upgrading project was organized.

1 Carole Rakodi and Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes, 1981, r' p. 57.

Fig. 2.1 Lusaka Squatter Upgrading project (Ref. 23).

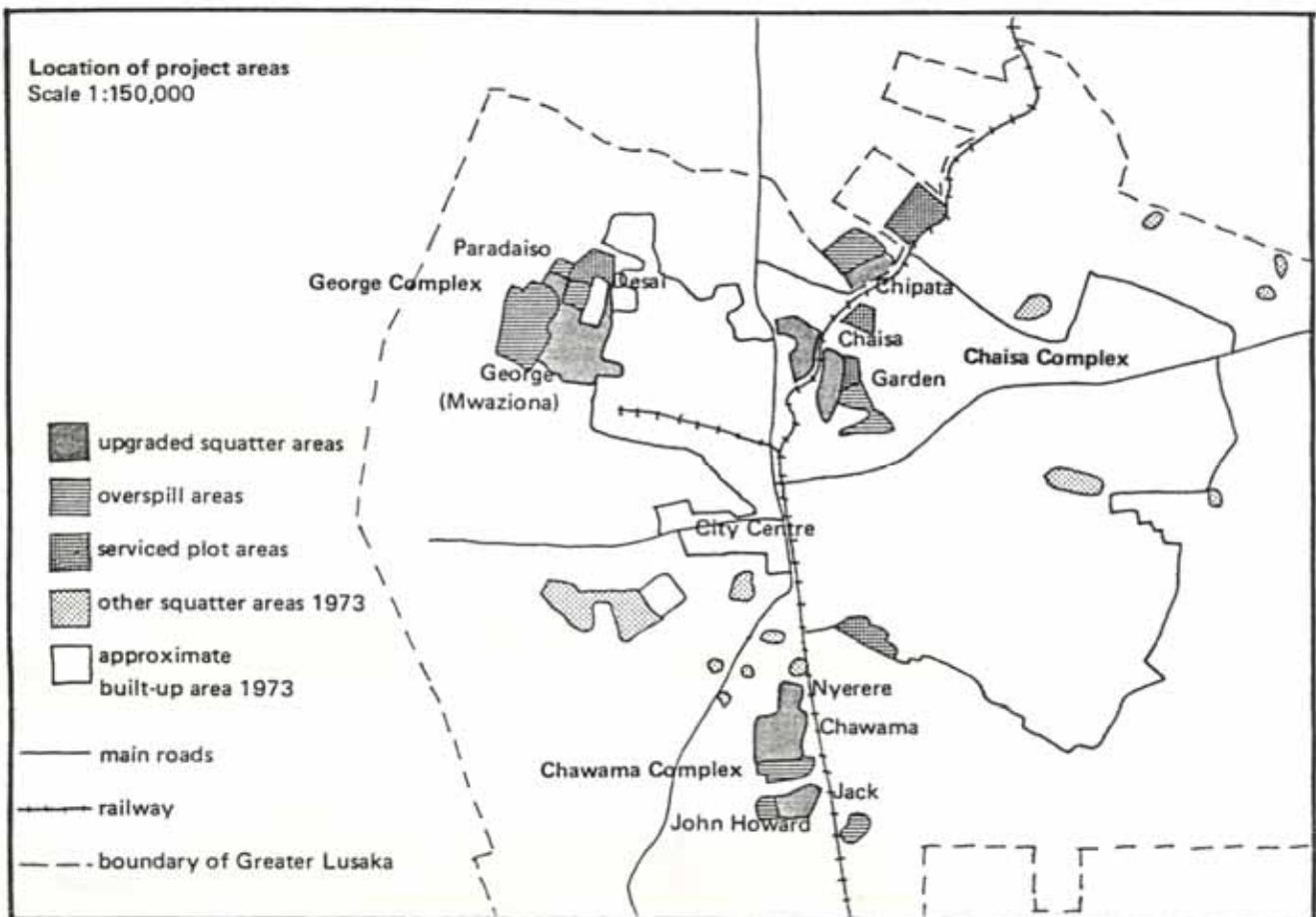
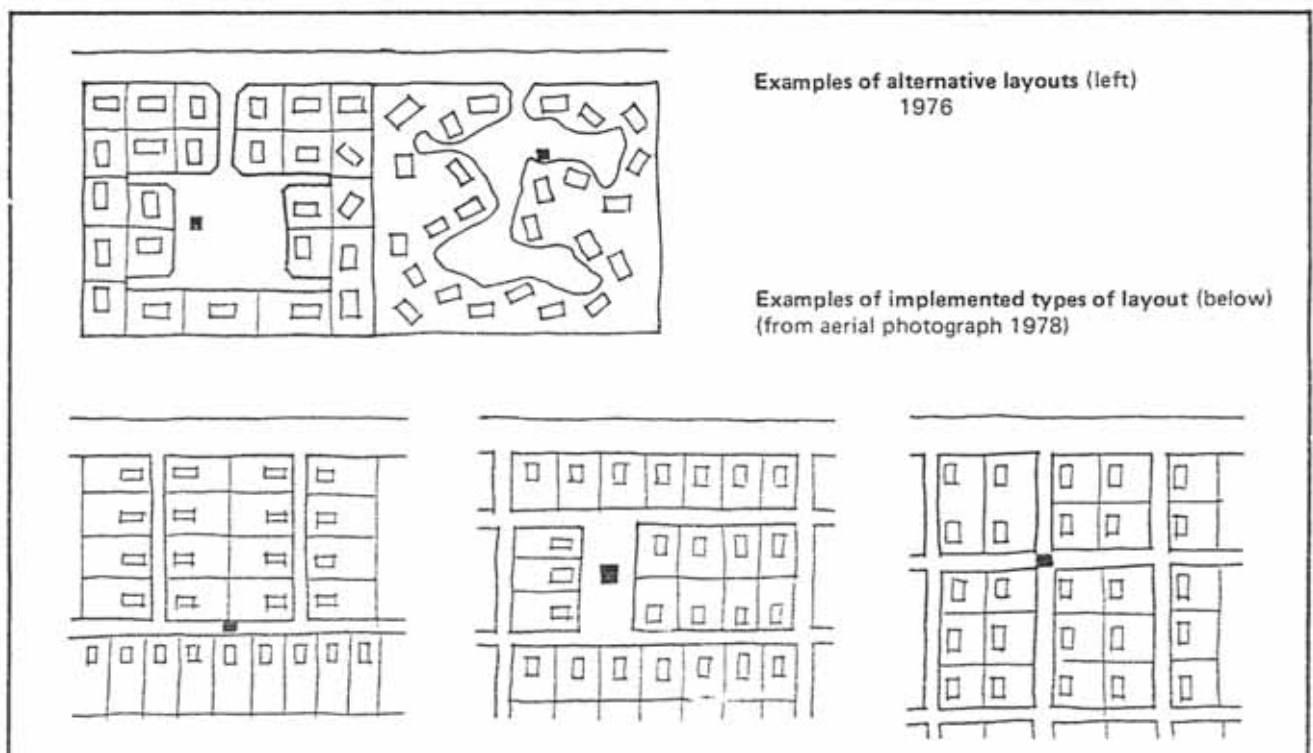


Fig. 2.2 Prepared and serviced plots in overspill areas (Ref. 23).



The project was implemented by a largely self-contained unit established within the Lusaka city council. The unit was expected to be responsible, with other council departments, for the collection of service charges and loan repayments, maintenance of infrastructure and the issuing of certificates of title and occupancy licenses, but in practice it has undertaken many of these tasks itself(1).

2.1.2. Intermediary Organization

A new policy towards squatter settlements was presented in the second national development plan, published in 1972. Squatter settlements had to be upgraded instead of being demolished. Lusaka city council made plans and estimated the costs for the provision of piped water, roads, pit latrines, street lighting and garbage removal facilities in squatter areas. The Lusaka Housing Project was set up as a department of the Lusaka city council, housing project unit (HPU) (2).

The housing project unit had an administration which consisted of the project director and deputy director, chief of finance and procurement, chief of engineering services, chief of social services and non-governmental groups, such as UNICEF and the American Friends Service Committee. Heads of these sections formed the management team, with other staff members. This allowed the staff to respond adequately to the field problems. The housing project unit was a service organization. In this way its role was backing and facilitating the job of the field team on site. For the field team, management meant sympathy, support and assistance, rather than orders.

1 *ibid.*

2 Harrington E. Jere, Paper on Community Organization and Participation in the Lusaka Squatter Upgrading, 1980, p4.

• HPU: Housing Project Unit.

2.1.3. Community Awareness

During the first phase of the implementation process, the project's community development workers, mainly newly trained specifically for the project, were utilized by the UNIP organization to inform participants about the upgrading project and to obtain their active support(1). The terminology of "briefing" was intended to be a persuasive activity. It aimed:

- a. Firstly, at making the residents aware of the upgrading Proposals, the options available to them and their financial and other responsibilities (awareness and understanding).
- b. Secondly, at counteracting potential opposition to the upgrading proposals (agreement).
- c. Thirdly at ensuring active support for cooperation with the implementing agency (action) (2).

While it is necessary for information giving to continue on a long-term basis, it is possible to break down the initial briefing into two stages

1. Off-site briefing:

Initially, leaders who were not resident in the upgrading area, but who had some responsibility for it, were briefed by project staff, including the Member of Parliament for the area, the district governor, regional and constituency party officials.

2. On-site briefing:

Subsequent to a formal public meeting announcing the beginning of implementation in the upgrading area and introducing implementation agency staff, community development workers briefed the officials of constituencies

1 United Nation Centre for Human Settlements (Habitat), Promoting Organized Self-Help through Cooperative Modes of Participation, 1984, p. 53.

2 Caroline Rakodi, The World Bank Experience: Mass Community Participation in the Lusaka Squatter Upgrading project. Evaluating Community Participation In Urban Development Projects, January 1983, p. 25.

and branches within the area and the councilor, in somewhat more details than in the off-site briefing. This briefing included information of the upgrading components, including physical and social infrastructure installation, tenure, provision for the relocation of residents whose houses were affected by road improvement, the building materials, credit and technical assistance programmes, liabilities for service charges and loan repayments and the possibilities for mutual help development projects(1).

Following the presentation of the basic information, based on written briefing material, question and answer sessions were dealt with resident's specific inquiries. A complex-wide seminar was held for all leaders. The leadership seminars included briefing meetings, slide shows and tours; they proceeded further than briefing meetings held in other areas, by reaching decisions, making recommendations to the Housing Project Unit, and establishing a Road Planning Group for the area.

Leadership briefing was followed by a series of resident's briefing sessions, on a section by section basis for housing groups (Fig. 2.3). Further detailed briefing sessions were held with residents, either individually or in small groups, whose houses had been identified as affected by road improvements or other works (Fig. 2.4). In addition to briefing meetings, other information media were utilized during the briefing process including posters, slide and film shows, tours, and demonstrations of self-help block making (2).

2.1.4. Community Organization

Citizen participation in Zambia means both decision-making and physical participation in development projects

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- 1 Geoffrey K. Payne, low-Income Housing in The Developing World. the Role of Sites and Services and Settlement Upgrading. 1984, p. 60
 - 2 United Nations Center for Human Settlements (Habitat), Promoting Organized Self-Help through Co-operative Modes of Participation. 1984, p. 22.



Fig. 2.3 one of resident's briefing sessions (Ref. 5) .



Fig. 2.4 Individually briefing sessions (Ref. 5)

Through self-help. In Zambia the political system is a One Party Participatory Democracy. In terms of local participation the system is unique. Party and Government Policy, encourages all citizens to participate fully in decision-making and development projects. Zambia's President, Dr. K.D. Kaunda, has written "we have, therefore decided to have the type of democracy in citizen participating not only through their freely elected representatives but also by their direct involvement in decision-making process, (1). As a consequence of this historic decision, the party has begun the decentralization of all political institutions.

In Lusaka upgrading project, it was felt by the planners that, in order to make the upgrading of an existing residential area possible, it was essential to obtain the initial support and active co-operation of the residents. Some form of community organization was necessary as a channel of communication between the implementing agency and the residents. There was in Lusaka a choice among three alternatives of community organization (2):

- a. The implementing agency establishes a new community Organization.
- b. Making use of the existing system of local representatives, i.e., Lusaka City Council.
- c. Making use of the existing party organization at the housing section, branch and constituency level in the squatter areas themselves.

The first choice was rejected because it was clear that new organization would be seen as a potential threat to existing ones, especially the political party.

1 Carole, Radoki and Ann Schylter, Upgrading in Lusaka Participation and Physical Changes, 1981, p. 60

2 United Nations Center for Human Settlement (Habitat), Promoting Organized Self-Help through Co-operative Modes of participation, 1984, p. 22.

For the second alternative, the support of the councilor for the project in council was regarded essential. The project unit was made responsible directly to the principal policy-making committee of the council as well as the finance and general purposes committee. It was originally intended to work through word development committee for the implementation of upgrading. But although they have been used for some purposes by the implementing agency in the upgrading area, they have been much less important than the political party, so this alternative was rejected.

For the third alternative, the political party had established a strong hierarchical organization at section, branch and constituency level in the squatter areas and had adopted a number of functions normally undertaken by local government. The party organization was, therefore, adopted at a number of different stages during the implementation of the project as the main vehicle for participation by the population of the squatter areas in the process of implementation (1).

The following is the party structure which was adopted for the project at the local level (Fig. 2.5):

1. Constituency Committees: Which consist of twenty-four members, of these eight are main-body men representatives, eight women representatives and eight from the youth organization. In Zambia political structure, one remains eligible for youth membership up to 35 years. For example Chawoma complex with over 45.000 population and some surrounding areas was one constituency.
2. Branch Committees: The smallest branch starts with 200 households. Membership residents it must at least have 8 party sections. On the branch committee is eligible to all in branch area. It consists of 8 men

1 United Nation Center for Human Settlements (Habitat), Community Participation in the Execution of low Income Housing Projects, 1984, p11.

representing the main-body, 8 women from women's organization and 8 youth from youth's organization.

3. Section Committees: The section is composed of 25 houses. It has on its committee 8 men, 8 women and 8 youth as in the case of branch and constituency levels.
4. Individual Households.

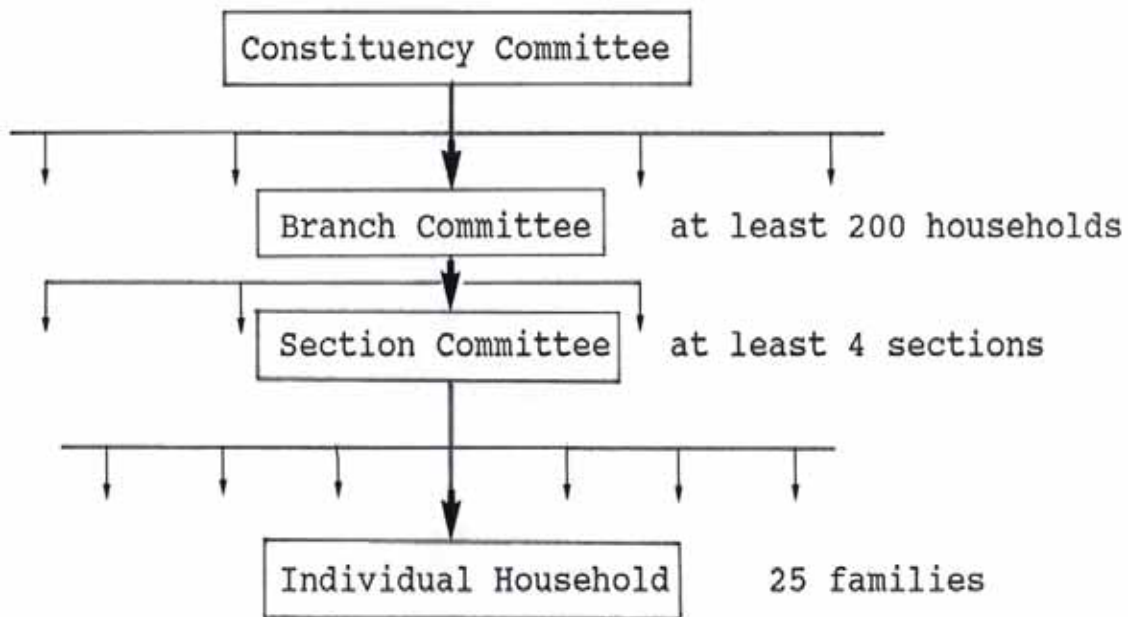


Fig. 2.5 Party structure at the local level

2.1.5. Community Participation in Decision-making

Decisions are necessary both:

- a. At the initial stages of the project planning and preparation, with respect to the components to be included in a project and standards and methods of implementation to be adopted.
- b. During implementation, with respect to the application of the general proposals to a specific area.

Participation in decision making may range from "information collection" in which residents are given the opportunity to state their preferences and priorities for the planners to take into account in project planning and design, to the actual determination of priorities, definition of

Components and taking decision of planning and design by participants.

The proposal for the Lusaka project was prepared by a team in the National Housing Authority, in consultation with the Ministry of Local Government and Housing, other government ministries, the Lusaka city council and the World Bank, during a few months in 1973.

It was considered desirable not to raise the expectation of squatters, who had been promised upgrading on previous occasions, before the loan funds were guaranteed to be available, and so decisions on project components and mode of implementation were taken by the project planners(1).

It was taken into account the priorities expressed by squatter area residents using participative and rational information. Information on priorities was derived from earlier demands made by squatters via political action, participative information from the media campaign and self-help projects, and rational information from a sample survey of George area carried out during 1972. There are potential dangers in assuming that any of these types of information, in the absence of direct consultation with the residents themselves, present a true picture of the resident's priorities.

Three main reasons may be advanced for the lack of opportunities for resident's direct participation in project planning (2):

1. It was expected that if loan funds did not become available after resident's expectation had been aroused, social discontent might occur.
2. A project designed for World Bank loan funding has to be speedily prepared and to contain a substantial amount of details on physical infrastructure, administrative arrangements and cost.

1 Ibid, p. 13.

2 Carole Rokadi and Ann Schlyter, *Upgrading in Lusaka. Participation and Physical Changes*, 1981, p70

It was difficult to accommodate somewhat time-consuming process designed to involve the public in discussion and consultation.

3. A further difficulty concerns the appropriateness and feasibility of community involvement in decisions which, while relevant to service provision in a particular area, have implications for planning and infrastructure provision in the city as a whole. It has been suggested that residents of a particular area cannot be expected to take city-wide needs and priorities into account and, therefore, that the representative system of local democracy is in a more appropriate location for taking decisions on the allocation of resources on a city-wide basis.

One of the objectives of the project was to involve residents in decisions related to the future development of the area in which they live (1). This is done by involving the population of squatter areas in consultation on the planning of certain physical components of upgrading, primarily road routes and the setting of social facilities. So the populations were involved in the detailed physical planning, and not in the general project planning.

The basic standards and principles of road provision had been determined in advance of implementation, on the basis of 4 m gravel road access to each group of 25 houses, primarily for service and emergency vehicles, together with tarred 6 m bus routes. It was recognized that even if the principle of using existing tracks, in order to minimize the demolishing of building, was to be followed in planning the road layout; a fairly large number of buildings would be affected. The consideration of road routes and decision affecting buildings

1 Rein hard, J. Skinner, Community Participation in Third World Housing. Potential and Constrains. Cities, Vol. 2, No. 6, November 1984, p. 572.

Could best be handled by local residents, according to their technical feasibility (1).

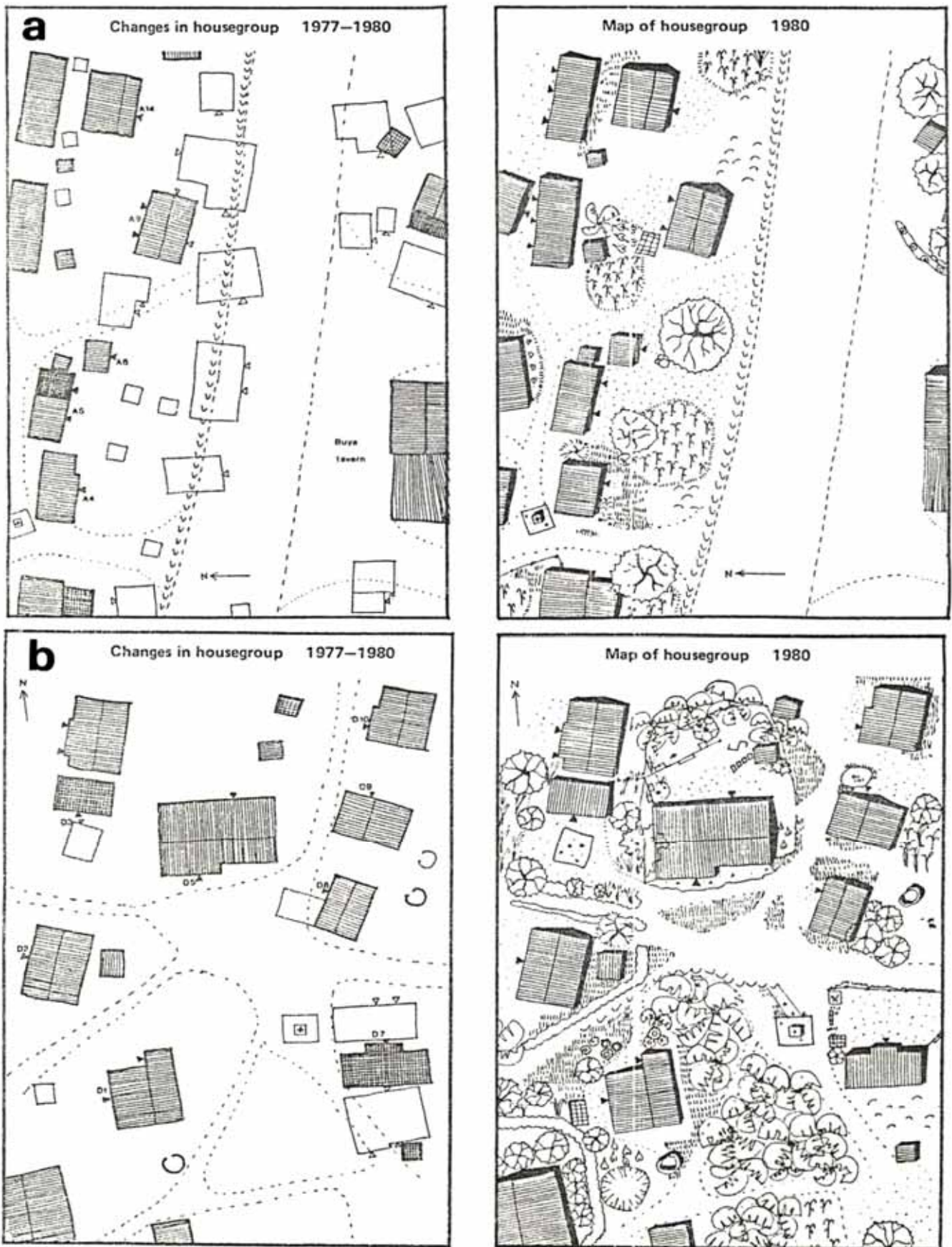
This was done, after some initial experimentation with appropriate procedures, by means of establishing a Road Planning Group in each upgrading area, generally including councilors, constituency, branch and some section officials, and sometimes representatives of other organizations. For example, in George district the Road Planning Group which, formed in April 1976, was composed of eleven representatives of each of five branches, together with the councilors and constituency officials for the area(2).

The Road Planning Group was then briefed by project staff on the constraints within which they could make recommendations and the planning principles for the road network, including the total length of road construction for which funds would be made available (16 Km in George) and the intention of having a limited number of through roads to serve as bus routes, together with loop roads serving residential areas, in order to reduce the danger from fast traffic. The Road Planning Group, together with project management and technical staff, then walked through possible roads and taking into account technical advice from the accompanying engineer. The agreed route was then marked by Project Unit surveyors and the Road Planning Group tried to resolve any problems, before a plan was drawn up and agreed(3) (Fig. 2.6).

The Road Planning Group was also to select sites for social facilities provided during the project, including primary schools, clinics and community centers, and to

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- 1 United Nations Center for Human Settlement (Habitat), Community Participation for Road Planning in Squatter Settlement Upgrading. Training Module, 1983, p. 13.
 - 2 United Nation Center For Human Settlements (Habitat), Community Participation in the Execution of Low-Income Housing Projects, 1984, p. 14.
 - 3 Rodell and Skinner, people. Poverty and Shelter, 1983, p. 65.

Fig.2.6 Routes for roads and changes in house group (Ref. 23).



Identify houses from the most densely settled areas which might be demolished and their inhabitants provided with over spill plots.

Assessment of the role of the Road Planning Group in involving residents in decision making may be made in two stages, concerned firstly with the views of the local residents as to the representatives of the group and, secondly, with the real scope for decision making available to it.

Membership of the Road Planning Group was drawn from the whole upgrading area and therefore enabled an overview of local accessibility requirements, although attendance on walks tended to be dominated by members from the particular area being considered at the time. While the Road Planning Group undoubtedly made a more interactive form of participation possible, increasing the opportunities for feedback to the implementing agency and the establishment of an ongoing dialogue between residents and the Project Unit, it also assumed that elected party officials could be taken as representatives of the community as a whole⁽¹⁾.

2.1.6. Community Participation in Management

The experiment of Lusaka Squatter Upgrading is seen and accepted as a social and an economic experience. The application of the policy of Squatter Upgrading can be a sensitive issue. It requires a careful approach. In the Lusaka Squatter Upgrading project planners and social workers agreed on the importance of local involvement. In one of the official documents on the subject, the Zambia National Housing Authority had this to say, "That there was a need for

1 Carole Rakodi and Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes, 1981, p. 71.

the "division" of responsibility between the community and authority in the upgrading exercise,, (1).

In order to ensure that it is compatible with the lifestyle requirements of the population in each settlement, the process of upgrading must be regarded as a way in which authority can support and reinforce the resident's own efforts to improve their environment. It should act as a stimulus to the investment of popular savings, skills and initiative. And it is therefore to be seen as a phased programme of development in which authority and community determine at each stage the type of input that will help the residents to achieve their aims.

2.1.7. Community Participation in Implementation

In Lusaka Squatter Upgrading project residents could participate in project implementation by means of ongoing self-help and mutual help improvements, at three levels of organization, on an individual, group and community basis(2).

1. Individual basis:

The project aimed to ensure affordable improved housing by encouraging participants to use their own labour and financial resources to construct or improve houses and by providing any assistance necessary to mobilize these individual resources. The technical assistance, building materials supply and credit components of the project were designed to facilitate and encourage house construction and improvement (Fig. 2.7).

2. Group basis:

Households identified for resettlement in the over spill areas included those whose former houses had been affected by infrastructure installation, and who were to be resettled in

1 Harrington E. Jere, Paper on Community Organization and Participation in the Lusaka Squatter Upgrading, 1980, p. 3.

2 Carol Rakodi and Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes, 1981, p.72.

Order to reduce densities in the existing upgraded areas or who were tenants who had been allocated on over spill plot, in order to give them an opportunity to build their own houses. These households were organized into groups of 25 and extensively briefed on the provision made to assist them with relocation and house construction, as well as their responsibilities and commitments for loan repayment etc. In addition, each group of 25 households was allocated in an area of approximately 0.8 ha. And given the opportunity to plan its layout, by means of alternative layout prepared by the Project Unit (1) (Fig. 2.8).

3. Community basis:

Mutual help projects in which participation took place on a community basis have taken two major forms. The first of these instances is where, as provided for in the original project proposals, mutual help labour has been utilized to undertake the unskilled aspects of a contractor's work, namely trench digging for the installation of water pipes.

The amount allocated for this labour in the original project estimates or tenders was then regarded as having been earned by the community, on the basis of an agreed rate of payment for work done and was credited to them, generally in the form of building materials, for use in further community improvements.

The second instance of mutual help community improvements was seen to be the construction of an additional social facility in an upgraded area, possible use of the materials earned by trench digging. In some instances also, where local contractors constructing community facilities in the upgrading areas had failed to complete their contracts, the local community, via the party officials, organized the necessary labour to complete the building.

1 Ibid, p. 73.

The roles of various groups involved in mutual help activities may be different. The community workers regarded their role as an enabling one, but the time inputs required for carrying projects to a successful conclusion were in practice substantial, and they also, on occasion, found it necessary to adopt a mediating role between party officials and residents. Party leaders performed a mobilizing role. They organize meetings to plan the project, urge participation in work performed and monitor work done by individuals, while Project unit staff provided technical supervision and loaned tools. The degree to which resident's participation may be forthcoming depends on the extent to which it is voluntary, on a potential participant's evaluation of whether it is the most effectiveway of achieving his aims, and on whether he evaluates the benefits as exceeding the costs, perhaps in terms of income foregone(1) .

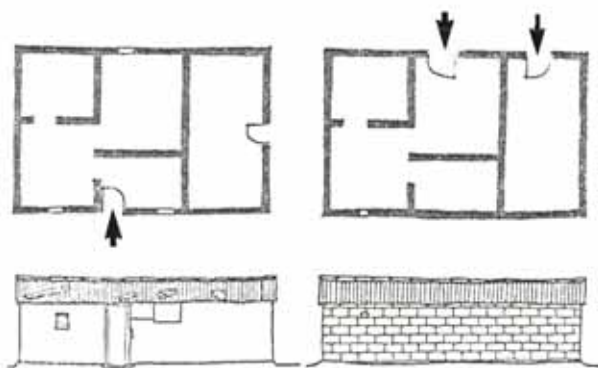
These types of mutual help projects clearly do not represent a saving in total project costs and may in fact be more costly, because of the considerable period of time and effort made by project staff, especially community development workers, to provide assistance to local officials for the initiation and completion of the project.

The aim of the Housing Project Unit, in encouraging and assisting mutual help projects, was to strengthen self reliance and provide a basis for continued upgrading based on community initiation. But the experience with mutual help projects has shown that despite the ability of the party organization to mobilize residents to contribute labour and finance, considerable community development and technical assistance inputs are required as a backup. This may represent a considerable drain on local authority resources.

1 Carole Rakodi and Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes, 1981, p. 73.

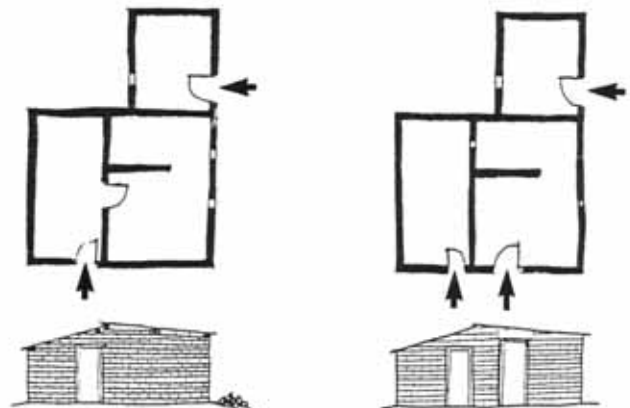
Fig. 2.7 Housing improvements (Ref. 23).

Changing the position of doors



1977

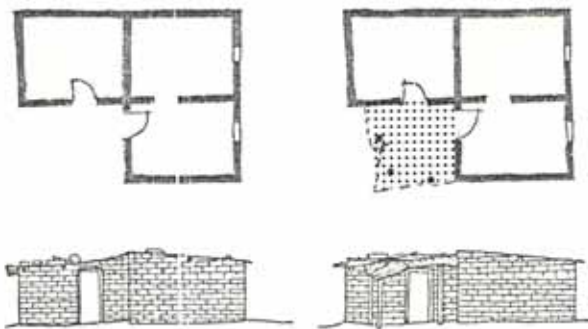
1980



1977

1980

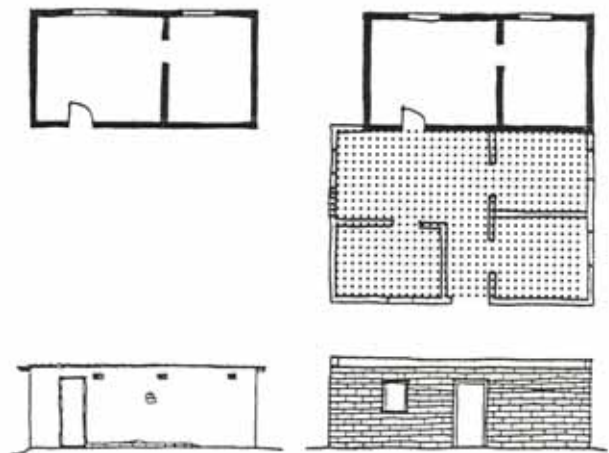
Enlarging the roof



1977

1980

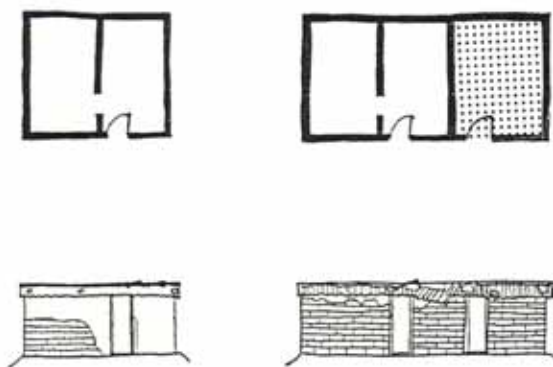
Extension of concrete blocks



1977

1980

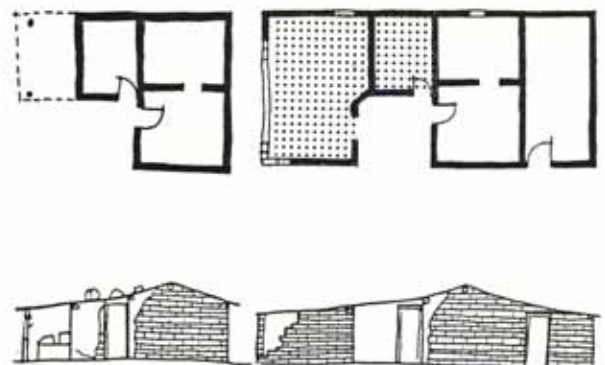
Extension of mud bricks



1977

1980

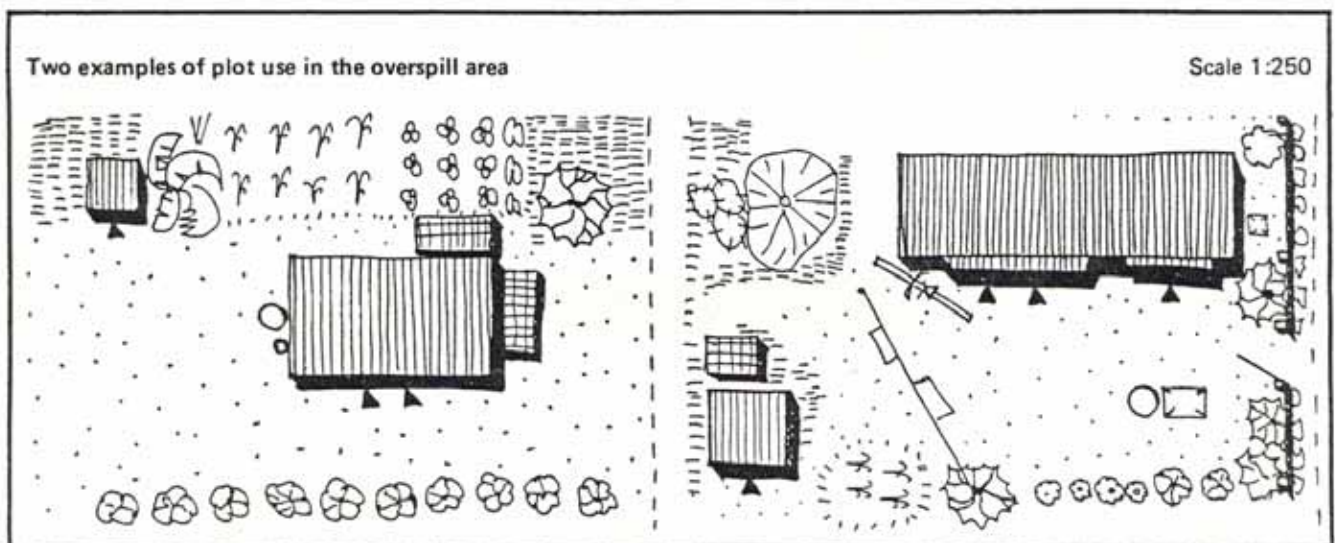
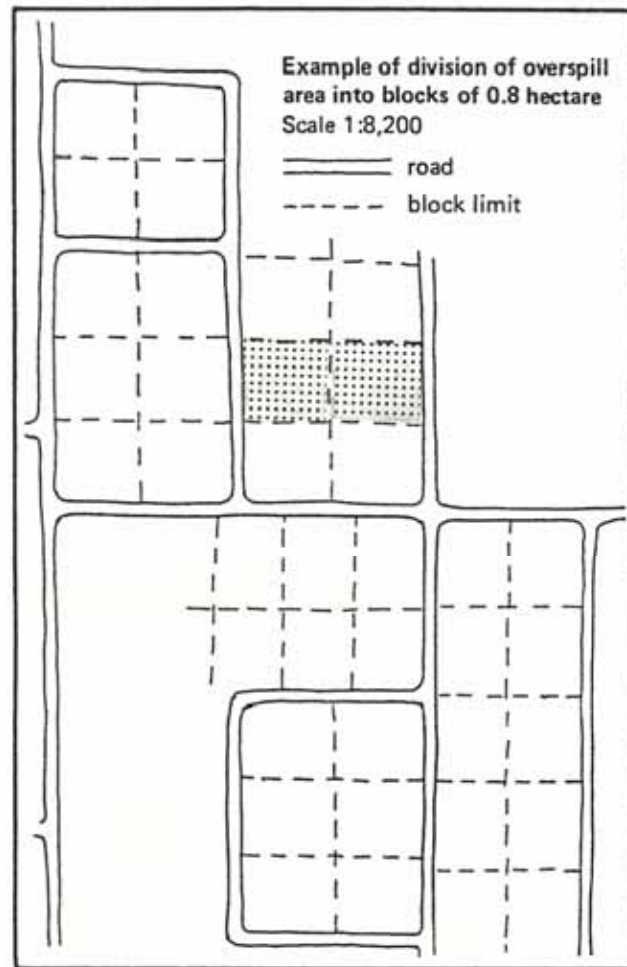
Completing rebuilt houses.



1977

1980

Fig. 2.8 Overspill area for resettling (Ref. 23).



2.1.8. Community Participation in Cost Recovery and Loan Repayment

One of the reasons for adopting the section size (A house group of 25 houses, as the group sharing a communal standpipe) was to facilitate the collection of service charges (1). Resident households were responsible, once upgrading was completed, for a composite service charge, covering repayment of the capital costs of infrastructure, and operation and maintenance costs for water supply, refuse disposal and street lighting systems, roads and drainage. The collection of service charges and loan repayments have been entrusted with Block Leaders in all upgraded areas. Block leaders collect all these monthly charges from their block of 25 houses and in return pay at HPU office. If a Block pays in time the block is credited with a certain amount of commission (2).

The previous record of the Lusaka City Council with respect to the collection of service charges in its site and service schemes had been poor and an improved collection system was put for the upgrading areas (3).

In addition to improved administrative procedures, it was intended to use the disconnection of water supply from the communal standpipe as a sanction against non-payment of service charges by any household within the group of 25 houses. However, it was considered that social pressure, both from other residents and from section officials, would be a more effective means of ensuring regular payment.

The system of "social pressure" has achieved good results but below the HPU expectation. There are a number of reasons for the relatively poor performance of this otherwise excellent approach:

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- 1 United Nations Center For Human Settlements (Habitat), Community Participation In the Execution of Low-Income Housing Projects, 1984, p. 26.
 - 2 Michael Bamberger, Bishwopura Sanyal and Nelson Valverde, Evaluation of Site and Services Projects: The Experience From Lusaka. Zambia, 1982, p. 139
 - 3 United Nations Center for Human Settlements (Habitat), Promoting Organized Self-Help through Co-operative Modes of Participation, 1984, p. 48.

The first reason was the HPU staff inability to intensify their community dialogue.

- a. The second was the poor communication with local leaders.
- b. The third was that the leaders in the process of upgrading, their attitude and approaches to their fellow residents has changed.
- c. The fourth reason was the lack of motivation to ensure proper collection.
- d. The fifth was the missing cash by some leaders. Yet, inspite of these shortcomings not all is lost.

Attempts were made to strengthen the method of "social pressure", to ensure continued involvement of the residents in the administration of their areas (1)

Households who had taken up house construction or improvement loans were expected to repay the loan over 15 years at the rate of 7.5% interest. Initially it was hoped that participants would respond to briefing by community development workers by making regular payments, but it became increasingly clear that this was not effective.

2.1.9. Community Participation in project Maintenance

It was intended that the Lusaka City Council Engineering Department would take over the responsibility for maintenance of infrastructure but the delay in providing necessary staff and equipment, together with administrative problems have resulted in a great demand for maintenance over the capacity of the engineering department. It has, therefore, been necessary at times to organize maintenance on a community basis. However, the Party appears, understandably, unwilling to put its administrative energies into a task for which the city council is clearly responsible.

1 Harrington E. Jere, Paper on Community Organization and Participation in the Lusaka Squatter Upgrading, 1980, p11.

This is in spite of its Chance of increasing its influence and legitimating by adopting an organizational role resulting in clear benefits to the residents (1).

1 Carole rakodi, The World Bank Experience: Mass Community Participation in the Lusaka Squatter Upgrading project, in Evaluating Community Participation in Urban Development Projects, January, 1983, p. 27.

2.2. Building Together Project in Bangkok, Thailand

2.2.1. Description of the project

The Building Together Project is a small housing project implemented in Bangkok, the capital of Thailand (Fig. 2.9). This is the first project for the Building Together Company which was formed in August 1978. The project, when completed, will house nearly two hundred families. The families built their houses by themselves, but not individually. Groups of families built clusters of houses together. When the basic houses were completed, the group allocated them among its members. Each family then gradually improved and completed its own house. This was the idea of building together (1).

Building together combined three fundamental objectives: Shelter, community and self reliance. Shelter was a basic need of every family. Community was the immediate world in which people live and act together. Self reliance was the liberation of the poor from continued dependence and ignorance and their transformation into creative and constructive participants in forming their environment. The building of houses by the people themselves produced decent shelter. The building of community was founded on the trust and unity generated in the process of working together and making decisions together. Self reliance was a result of increased understanding and awareness of common problems and by developing confidence through individual and common accomplishments (2).

Although the concept of mutual aid in housing was by no means new, there have been only a few attempts to apply it to low-income urban housing projects in recent years. The tradition of building together was old, but it had been lost in the process of disorganized migration and resettlement in the slums and squatter settlements of the third world. New traditions and practices must gradually emerge. The Building

1 Jorge Anzorena and Wendy Poussard, A Time to Build People's Housing in Asia, 1985, p. 28.

2 Shlomo Angel and Zilla C. Phoativongsacharn, Building Together, 1981, p. 1.

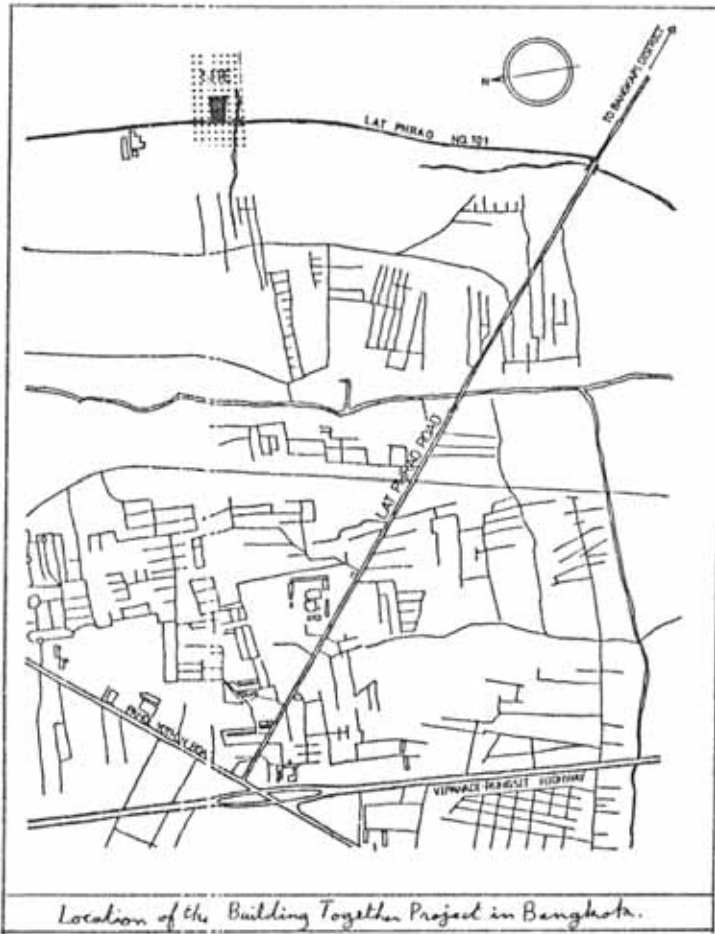


Fig. 2.9 Building Together Project location (Ref. 4)

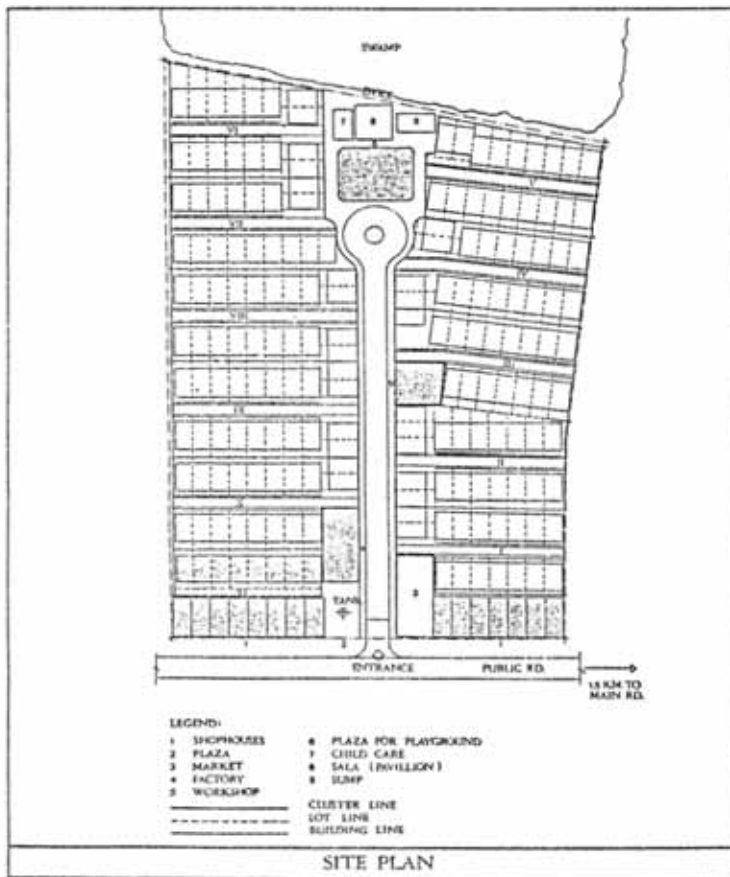


Fig. 2.9 Building Together Project location (Ref. 4)

Together explored the potential for rediscovering mutual aid and community tradition in new urban areas.

2.2.2. Intermediary organization

In order to guarantee the success of community participation, a structure was necessary in which people's effort would be channeled and coordinated to produce results. Experiences with people's groups trying to organize themselves to perform complex agricultural or building activities have been, generally, discouraging. There was therefore, a significant role for intermediary organizations that can organize and could help the people to articulate their needs and aspirations into meaningful action programs, and that can provide the necessary access to technical and financial resources. However, in Bangkok, in the field of urban housing construction no such voluntary non-government organization exists (1).

The promoters of this project, all members of academic organizations, non-government voluntary organizations and government agencies, were united by their desire to explore ways and means of assisting low income people to gain access to secure housing arrangements as part of a process of community building. Further, they had various experiences in involving the people participation in community activities. Community participation involving mutual-aid and self-help was an obvious, suitable and possibly fundamental means of building healthy, caring and self-reliant communities (2).

Neither the framework of an academic institution, nor the framework of an existing charitable organization or government agency, proved sufficiently flexible. It was decided to create a new organization, in the form of a non profit association, the Building Together Association. Registration of the association promised to be long and difficult.

1 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 149.

2 Geoffrey K. Payne, Low Income Housing in the Developing World, 1984, p. 205.

The remaining option for immediate action was to form an ordinary company, the Building Together Company, and to equip the company with a special charter for non-profit operation.

The company was registered in August 1973, and the association was subsequently registered in January 1981. Registering the company has provided the organization with a legal status, enabling it to purchase land and to gain official access to government agencies as well as to donors. The company employs the services of full-time professional consultants, community organizers, social workers and architects (1).

2.2.3. Community Awareness

The first stage of participation in the project involved compulsory attendance to the education course. The initial education sessions aim at building a commitment to the project's goals through the articulation of the common self-interest of participation.

The education course for the first cluster group was divided into ten weekend sessions (2):

- Session 1: Knowing one another: The members met to learn of one another's backgrounds and reasons for joining the project.
- Session 2: Housing problems of low-income people: This session involved a slide presentation and a film describing the housing problem of Thailand's urban area. It was followed up with small group discussions.
- Session 3: Visit to demonstration houses: Participating families visited two demonstration houses and evaluated them for the purpose of improving the design.

1 Shlomo Angel and Zilla C. Phoativongsacharn, Building Together, 1981, p. 5.

2 Peter J. Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 170.

- session 4: Our new community: This session was aimed at building the participant's sense of unity and having them discuss together how to maintain their new community.
- Session 5: Financial arrangement: Budgeting, monthly financial arrangement, and the system of installments with the Government Housing Bank were explained to the Participants
- Sessions 6&7: Credit union: These two sessions concentrated on savings co-operatives and an explanation of credit unions in Thailand, their history, organization, and activities.
- Session 8: Building techniques: This session dealt with the physical arrangement of construction, building techniques, man-hours and labour inputs.
- Session 9: Building techniques: A continuation of the above session, this meeting dealt with the production and assembly stages in more details. Participating families were made to understand that they are committed to contribute regular labour hours.
- Session 10: Graduation and evaluation: This final session was a celebration of the participants having completed the training program of building together. T-shirts were handed out and photographs of the group were taken. Finally, the education package as a whole was evaluated.

2.2.4. Community Organization

The Building Together Project selected its members largely from slums and squatter areas near the project site. People came as strangers to one another. Participants in the project were selected carefully. The long process of selecting participants had proceeded step by step with physical development, in order to save time.

The main task of this project was to build a new community, based on common self-interest. This required a transformation of the participants from strangers to friends that could trust each other, work together, and enjoy living together. So the company followed a strict procedure, in selecting the candidates for the project which is (1):

Publication and distribution of 2.000 copies of a brochure describing the project and containing an application form. The application forms asked three main questions: household income, family size and location of employment.

1. More than 1. 000 replies were received: The replies were screened on two income criteria: household income and per capita income. The general rule was that monthly household income should be less than 146 US \$ and that per capita income be less than 35 US \$. In addition to the income criteria, households whose main job location was too far from the project were also eliminated from consideration for this first project.

Based on these two criteria, eligible families were invited by mail to the site office for more detailed interviews.

2. 767 families responded and appeared for interviews at the site office during the period of April to June 79. Some families were also interviewed in the slum areas.

The interviewers focused on a number of criteria for selection (2):

- a. Real household income and per capita income.
- b. Current housing situation and ownership of property.
- c. Urgency of housing need.
- d. Job location.
- e. Ability to pay and willingness to pay down payment and monthly installments.
- f. Building skills and organizational skills.

1 Ibid, P.166.

2 Ibid, P.167.

- g. Willingness to work evenings and weekends.
- h. Willingness to attend the education course and later join a housing cooperative.
- i. Personal impression.

Once participating families were selected, they were divided by lottery into cluster groups, each cluster containing 16-20 families (1). Skilled participants, carpenters and masons, were distributed equally among clusters. The Building Together Project site was divided into 10 main clusters, each housing between 16-20 families. Each cluster was considered as a small neighborhood group. The houses in a cluster were arranged along a short lane, facing one another (Fig. 2.10).

The cluster group was the fundamental unit of organization in the project. Its size ensured knowledge of each member by name. Clusters organized their own work, assigning tasks among themselves, and putting social pressure on members to carry out their work properly. Clusters also had the power to dismiss members who fail to participate adequately in the building process.

During the early stages, it was difficult to identify and encourage cluster members to take on leadership responsibilities within their clusters. The people seemed to be accustomed to leadership by people of higher status and education. Equal leadership was not accepted and a number of leaders who were officially elected were later undermined by their fellow members. However, as the project progressed, real leaders began to emerge.

There appeared, however, two main problems in organizing the community into cluster groups. First, the people who have worked together for a long time developed very strong feeling about each other. Those who got along during construction became very useful neighbors and friends.

1 Geoffrey K. Payne, Low Income Housing in The Developing World, 1984, p. 205.

But those who had quarreled during construction found it difficult to continue to be in close proximity.

Second, clusters tended to develop a strong sense of identity, which sometimes tended to separate them from other clusters. Members of earlier clusters felt a sense of seniority over members of later clusters. Cluster members defended each other in conflicts concerning the use of tools and equipment. In short, the cluster organization, if allowed to develop on its own, made it difficult for a community spirit to emerge. Developing a sense of unity among different clusters required time. A joint community committee, comprising two elected members of each cluster as well as workers and project staff members, had been established. The committee was starting to generate a strong sense of community among members, and had begun publishing a community newsletter.

2.2.5. Community Participation in Decision Making

The Building Together Project had to choose for purchasing land in a good urban location, 1.5 Km from a major transportation road in a rapidly developing suburban area of Bangkok (Fig. 2.8). The high cost of land (US\$ 23 per m²) required a high density arrangement. Average plot size is 4.80 x 11.25 = 54,0 m² and the overall density on the site was 110 units per hectare. The site (1.7 hectares) would house 200 families. With an average family size of six, the population density in the site will be 706 people/hectare (1).

The total area occupied by plots was 68 per cent of the total site area, thus leaving sufficient land for community facilities. People's preference was for enlarging the size of plots at the expense of reducing the land for community facilities. Decisions on density and site location, at this stage, did not involve people's participation. This was the reason the people were not yet selected.

1 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 155.

Though people could not participate in discussion leading to the purchase of the land, all participants seemed to agree that the land was in a very good location.

Concerning the design of the houses, several ideas guided it (1):

1. Land ownership: Houses should be built on individual plots of land, which would eventually be owned by their occupants.
2. Support: The basic houses should provide a support structure for further gradual improvements.
3. Economic activity: The house should be used as a mean of production, rather than as a commodity which is gradually consumed.
4. Tradition: Thai traditions and life style should be incorporated into the design whenever possible.
5. Standards: The houses should comply as much as with building codes and standards so as to avoid unnecessary confrontation with the authorities.
6. High density: Houses must consume a minimum amount of land, to allow for the purchase of land in a good location.

These ideas have resulted in a basic house design which contained the following patterns (2) (Fig. 2.11):

1. **Row house**: Houses are arranged in rows, sharing common walls. The plots were long and narrow and the houses were cross-ventilated.
2. **Shell structure**: The basic houses were two-storey structure, covering two-third of the plot area. No interior partitions were provided and only the upper storey room was enclosed with doors and windows. The shell provides a support structure for easy gradual improvements, in contrast with a core house which was cheaper

1. Ibid, p. 160.

2. Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 160.

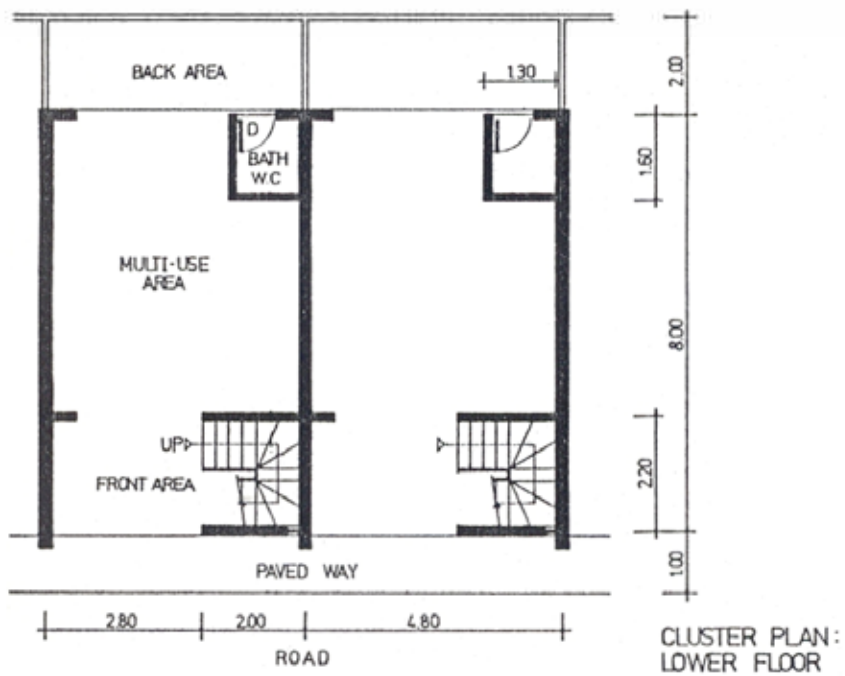
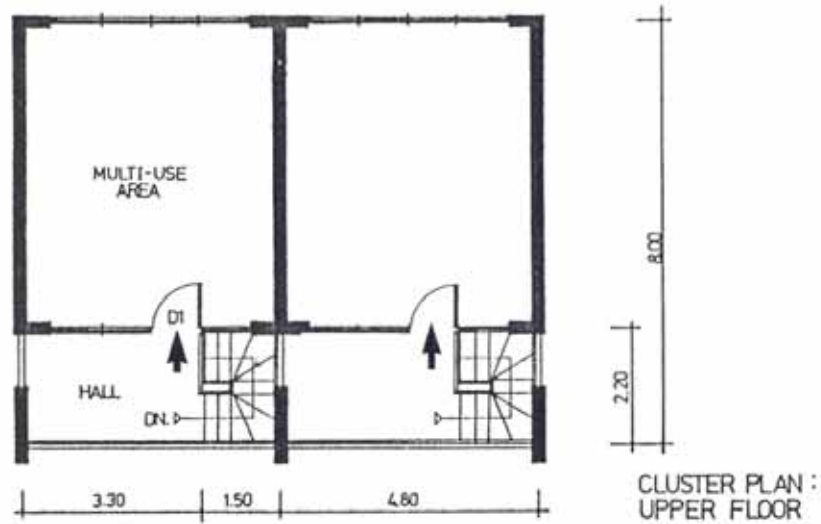


Fig.2.11: Housing design of the Building Together Project.



Initially but more difficult to expand in a controlled manner, especially upwards (Fig. 2.11).

3. **Living upstairs:** Following traditional Thai customs, living areas were located upstairs.
4. **Economic activity below:** The ground floor space was left unfinished and only contains a toilet, a bath and a kitchen area in the back. It would be used for supplementing the income of the family; by opening a shop, a workshop, a restaurant, or by sub-letting the space for rental income.
5. **High Plot coverage:** The house covers 70 percent of the plot, and the gross floor area was 76.3 m². The wide span of the floor joints made it possible to cover a large area at a low cost and allows the people to divide the indoor space in many different ways.
6. **Front and. back courts.**
7. **Indigenous decoration.**

People's participation in the design of the house was limited. Two demonstration houses constructed at the Asian Institute of Technology in 1979 were visited by the participants and several possible changes were discussed and consequently implemented (1). Generally, people have been satisfied with the design of the house. Thirty-five participants were surveyed in February 1981 to assess their reaction on the various features of the houses (2).

As can be seen from the survey, most people appeared to be satisfied with the design features of the house. Apart from the location of the toilet, which was necessitated by code requirements, a number of people had discussed moving the stairs to the back and locating the toilet under the stairs. Others felt that the court at the back of the house, which was less than 2.0 m wide, was less than satisfactory.

1 Shlomo Angel and Zilla C. Phoativongsocharn, Building Together, 1981, p. 52.

2 Ibid, P.54.

A number of people have erected walls and closed the verandah to increase the space inside the house. In the future, it may be wiser to leave the installation of the partitions on the upper floor to the people themselves. This may result in a considerable saving on the basic cost of the house and allow people more freedom to build according to their own needs. The less finished the house was, the more freedom of expression became possible.

In brief, participation in the early stages of the project was limited. Since members were recruited only after land was purchased, the site was prepared, and the basic designs of the houses were decided. Their contribution to the design of the house and the site plan was very limited. The main reason for delaying the participation in the early stages was the feeling that there was too many uncertainties. It was not clear whether the project could in fact be implemented, and that in the long period required for planning and land acquisition the people would lose interest. However, since the beginning of construction the people have become more involved in the ongoing planning and design decisions.

2.2.6. Community Participation in project Management

In the Building Together Project site management was a combination of four distinct styles of management: contracted work, mutual-aid work, self-help work and voluntary community work. These were divided into four, almost distinct, stages (1):

- 1. The pre-construction stage:** In this first stage, a private firm was contracted to build the site infrastructure, using its own labour and materials.
- 2. The mutual-aid stage:** In this stage, groups of 16-20 families produce components for basic houses, and then assemble these houses in a cluster on the building site.

1 Ibid, P.8.

The basic houses are allocated among members of the group by lottery after they are completed.

3. **The self-help stage:** At this stage, the families complete their houses by themselves, purchasing materials either from the project store or independently. This stage may continue indefinitely.
4. **The community services stage:** Once the houses were built, the people took over the management of the community themselves and continue the construction of community services, using their own labour and resources.

A number of important problems in site management have been identified covering the following items:

1. **Waste of materials:** There is insufficient awareness of the need to use materials economically. This is partly due to the current practice of not relating the price of the house directly to the consumption of materials by each cluster.
2. **Quality of work:** Although the people enjoyed overall results of their efforts, there were complaints about the quality of work of specific individuals. It was difficult to enforce quality control.
3. **Irregular attendance:** Initial plans to divide the people into teams and to assign each team a specific task have not been successful. People came to work whenever they were free and failed to come on agreed time and dates. They suffered no penalties for failing to appear as agreed. Others came late or leave early, making it difficult to form and maintain work teams.
4. **Low labour productivity:** People preferred to work in larger groups than necessary and to take shifts for doing difficult tasks. Work time was also used for forming social relationships and for meeting to discuss common problems. People were credited for the number of hours working, and not for their outputs. For some, this was

Interpreted to mean that the most important objective was to achieve working hours rather than finish the house.

In such a situation, quality and efficiency could be ensured in two ways: by supervision and by social control. But both have proved less than optimal in the early stages. However, as the project progressed, the joint community committee had taken on the major decision-making responsibilities in the project. Most staff meetings have been canceled and the staff met together with community members on a weekly basis to discuss emerging problems and to formulate solutions. The committee reviewed the project accounts and progress in construction. Members have been critical of a number of site management procedures and have decided to become more involved in site management. It was clear that the people were gaining confidence and were becoming ready to take over the management of their community.

When the construction of the basic houses and shops would be completed, the Building Together Staff would largely withdraw from the community, leaving it for the community committee to manage by itself. It was envisioned that the community would organize itself as a cooperative and register itself as a legal organization.

2.2.7. Community Participation in Implementation

In the Building Together Project, upon the completion of the education course, families of cluster I began to fabricate the structural components of their houses, which were designed by the architects of the Building Together Project, in the site factory (Figs. 2.12 & 2.13). Meanwhile, cluster 11 began their education course.

It was clear that this project made considerable demands upon the people. Cluster I participants appeared to be busy and were rather hard pressed to commit time to project activities.

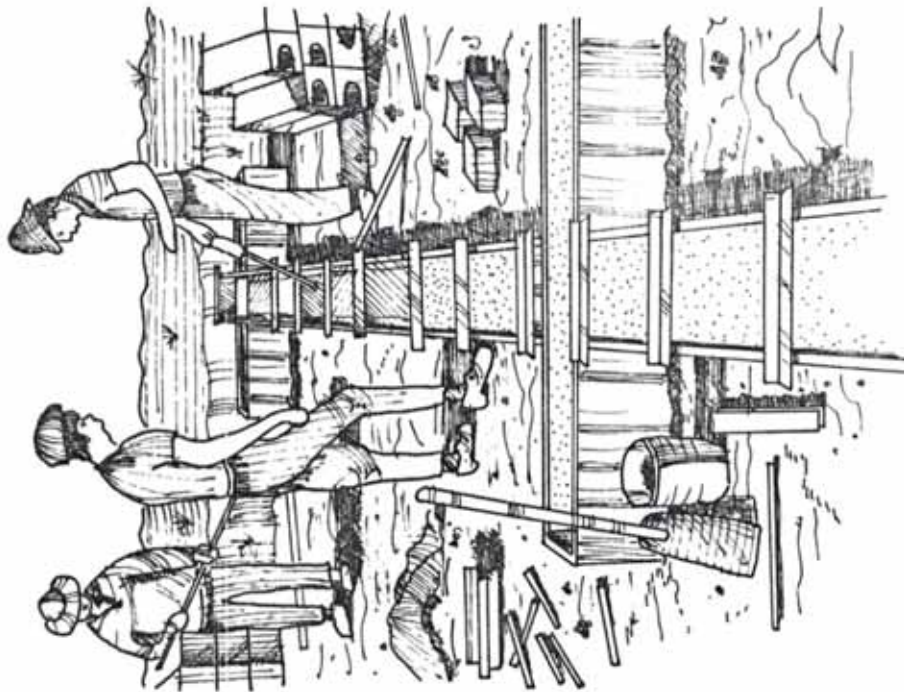


Fig. 2.12 Foundation construction for walls (Ref. 28).

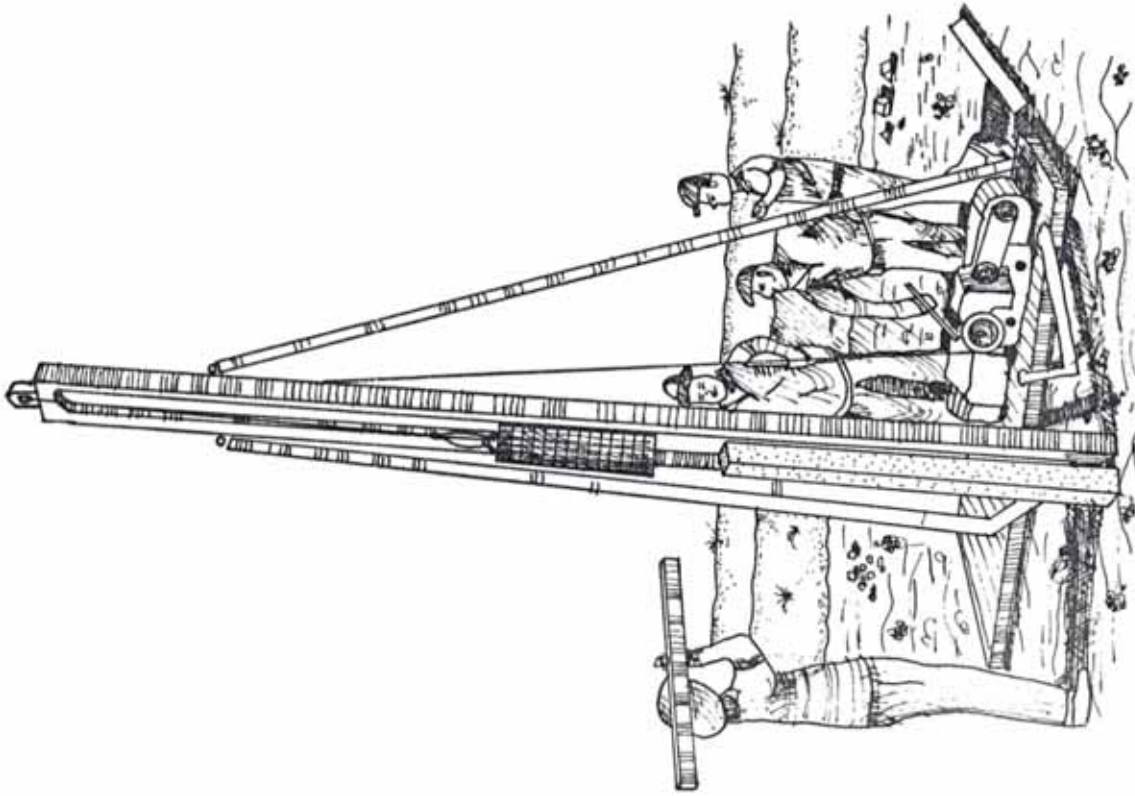


Fig. 2.13 Pile driving team in action (Ref. 28).

Time was precious for people that were employed, often working overtime, and often being independent operators, committing long hours in selling or providing a variety of urban services. At the same time they expressed a strong desire to complete the houses as quickly as possible.

It was estimated that the time for construction will be 1.500 man/hours per family. If only two members of the family worked for 20 hours each per week on the project, the construction period would extend over nine months. This was viewed as too long a period. The people wanted and expected the houses to be finished in half that time. This would require four members per family working 20 hours per week, or fewer members working longer hours, the recruitment of outside labourers, or the participation of members from other clusters. It was felt, however, that the actual participation of family members in construction, rather than their representatives or their hired hands, was crucial for the success of this construction process in building bonds of community among the people (1).

Self-help activities usually took place on weekend (Figs. 2.14 & 2.15). In Bangkok, however, most people worked on Saturdays, and only have Sunday free. Sundays were not sufficient, however, and work during the evening ought to be included.

In the mutual construction of houses, twenty families work toward the construction of twenty houses (Figs. 2.16, 2.17 & 2.18), and allocated the houses among themselves, once construction was completed (2). This enabled participants to divide the labour among themselves and to specialize in a few building activities. It, therefore, brought the efforts of unskilled people into the construction of good standard housing. But if each participant was to be a member of a team

1 United Nations Center For Human Settlements (Habitat), Community Participation In The Execution of Low-Income Housing Projects, 1984, p. 19.

2 Jorge Anzorena and Wendy Poussard, A Time to Build People's Housing in Asia, 1985, p. 29

Engaged in one building activity for twenty houses, this implies that houses had to be built one after the other, in some form of an assembly line process. This required one team to finish its job before the next team started on the next construction task, which, in turn, requires each team to finish its task on time. In the discussion with members of the first cluster, it was found preferable to allocate tasks to teams, and allow them to arrange hours for themselves, with team leaders responsible for meeting the necessary deadlines.

The measure of work performance on the building site was limited to measuring the number of working hours that each family did. This measure had several critical disadvantages. It does not distinguish between household heads, family members or hired relatives and acquaintances. Neither did it distinguish between efficient and inefficient workers. People agreed to work on the cluster until the basic houses are finished, an estimated total of 1.500 hours per family. Families who worked less hours paid, at the minimum wage rate of US\$ 0.30 per hour, to compensate those who worked more than the average number of hours to finish the houses(1).

This arrangement was still unsatisfactory. There were complaints, particularly directed at household heads who failed to show up for work and send in their wives, children or hired workers instead. The rule formulated by the people requiring each household head to contribute at least 15 hours a week had not been strictly adhered to. This would not have occurred in ordinary self-help projects where each family is building its own house. In these projects heads of households played a significant role, both as contractors and as organizers of labour.

Since household heads do not participate fully, the bulk of construction activities was left to family members,

1 Shlomo Angel and Zilla C. Phoativongsacharn, Building Together, 1981, p. 30.
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Fig. 2.14 A Participant does rebarring work for pile fabrication (Ref.28) .



Fig. 2.15 A Participant working on window frames (Ref.28) .

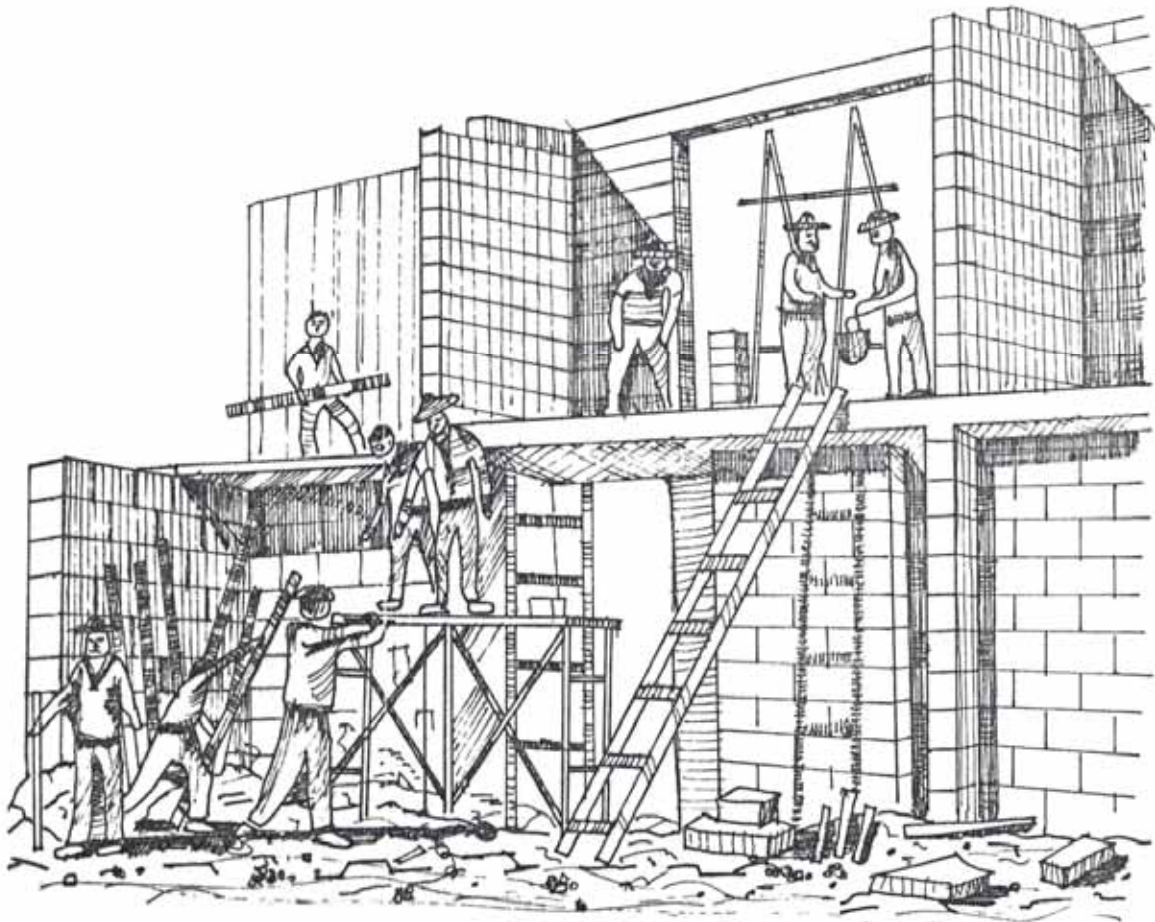
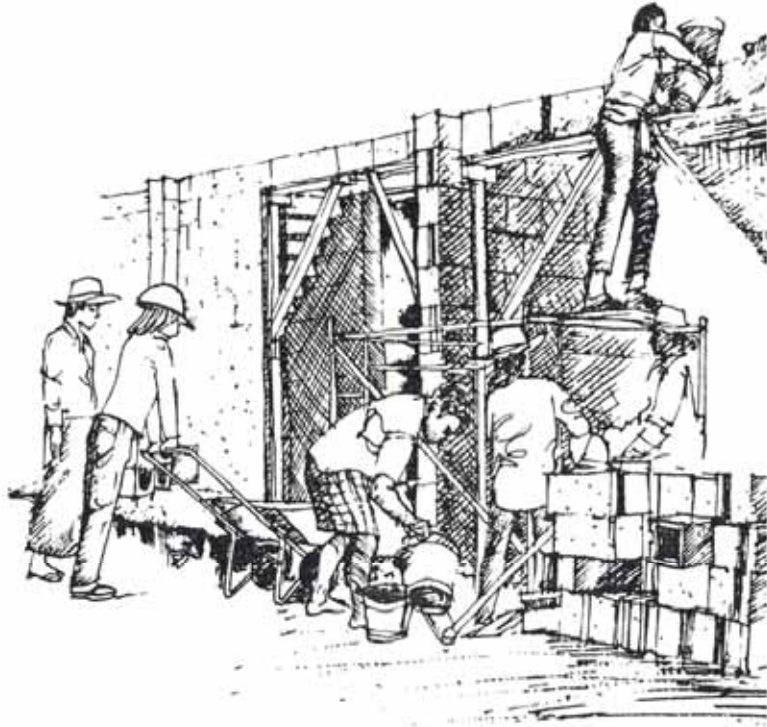


Fig. 2.16 Houses construction in progress (Ref. 5.)

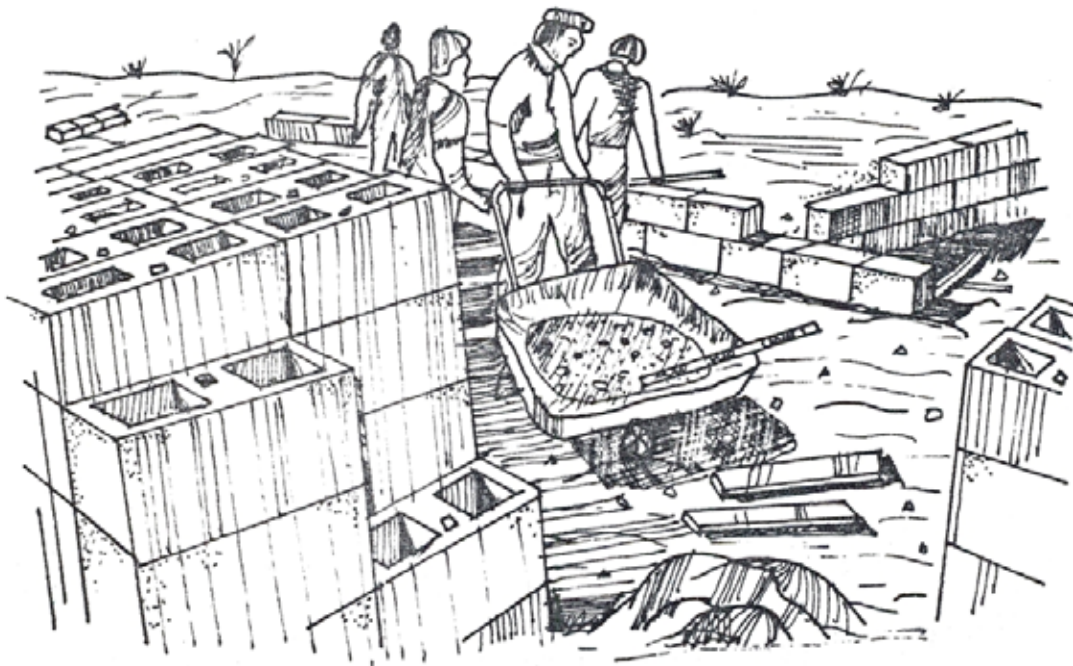


Fig. 2.17 Cluster I members beginning wall construction (Ref. 28).

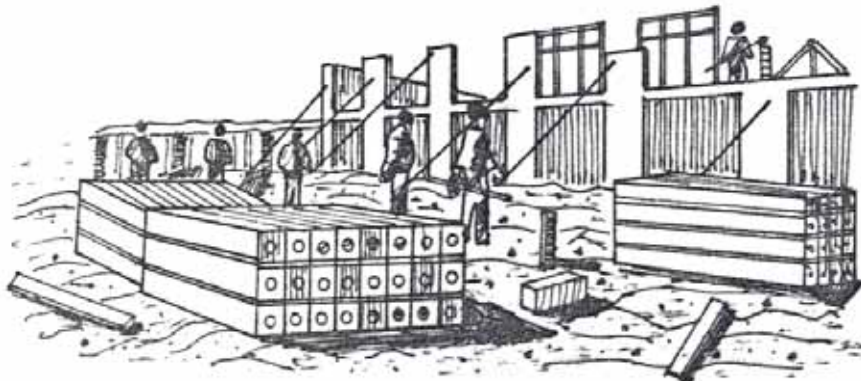


Fig. 2.18 Background: Cluster I members erecting their houses. Foreground: Cluster II member prepare to begin pilling (Ref. 28).

Especially the women, and to hired labour. Housewives who could work during the day contributed an average of 42.3 percent of the total working hours in the project (1).

The practical process of participation in actual construction needed to be further developed and experimented. It has to be suitable to the needs of the people, their morale, and their abilities, and at the same time amenable to efficient building construction.

2.2.8. Community Participation in Cost Recovery and Loan Repayment

The people were the main participants in their own housing efforts and the project ought to assist them in their efforts as much as they could, but without affecting their right and ability to think and act skillfully. Assistance ought to be tailored to the people's willingness to help themselves and not bestowed as a form of patronage in exchange for their loyalty or the creation of dependence. The aim ought to be self-reliance (2).

To build financial self-reliance, people ought to bring all their resources to solve their housing problems. To help large number of people, real financial subsidies for families ought to be minimized and assistance ought to be limited to the type of assistance that the people cannot furnish by themselves.

The interpretation of this objective in the Building Together project meant that the people must pay for the houses themselves and that the Building Together Company ought to recover its funds for use in future projects.

The 200 low-income families that participate in the project were selected on the basis of their ability to pay; this was not measured simply in terms of cash but in terms of

1 Ibid, p.31.

2 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 174.

labour skills and organization efforts. Each family would pay for the land, the building materials and the expenses for skilled labour to assist them. Infrastructure costs would be paid for in the following way. When all houses had been erected, the participants, together with the company will construct 15 middle-income shop-houses which ought to be sold on the open market. It was expected that the surplus from the sale of the shop-houses would cover the cost of the infrastructure. Thus the people, through building their houses and their community organization, would earn the surplus value of the shop-houses which will cover the cost of the infrastructure without the need of a subsidy. There was therefore an element of cross subsidy in the project, and hopefully, the company would not gain or lose money on the project.

People's ability to pay for housing was usually estimated by two years of household income, or 15-25 per cent of monthly household. On a monthly basis, excluding prior savings, the ability to pay for housing of a family earning US\$ 125 per month was equal to US\$ 18.75-31.25 in 1978(1).

Willingness to pay for housing, on the other hand, was strongly related to the people's preferences. Moreover, willingness to pay was affected by the real market value of the house being offered. People would be willing to pay more for a house if it is cheap in comparison with a similar house in the market.

The information about housing expenditure was incomplete for the participating families, and for the 17 families for which data was available, the average was approximately US\$ 20/month. Average household expenditures excluding housing was US\$ 107.5. Since average household income was US\$ 155, it could be assumed that. Households can save more than US\$ 25/month on average. A considerable amount of their potential

1 Peter J Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 177.

Savings would need to go towards down payments and monthly payments on their houses (1).

Terms of payment for houses ought to accommodate people's needs and resources, as well as the needs of the company and the requirements of the Government Housing Bank. The Government Housing Bank did not require any guarantees except the land titles and was willing to provide loans at 12 percent interest given a 20 percent down payment on the house(2) .

The people's level of present savings varied considerably and hence their ability to pay the down payment was low. A shadow price for the people's labour had been adopted, US\$ 0.3 per hour, for a total commitment of 1.500 hours per family. This brought the cost of labour to US\$ 450. The present total cost of the houses was US\$ 3.250, including labour. Twenty percent of that was US\$ 650. If labour was counted toward the down payment, this would require the people to pay only US\$ 200 in cash down payment. Which they have indicated was clearly within their ability to pay. At the same time, those that have larger savings could put those savings in the bank too, thus reducing their monthly payments (3).

The financial scheme adopted for the Building Together Project aimed at transferring low-income people from the position of consumers of housing services to the position of producers of housing and other economic goods and services. In this process, a serious effort was made to cut unreasonable profits of contractors, developers, and speculators and provided access to building materials and process of construction at their real cost. In the process of developing their housing cluster, the people were encouraged

1 Ibid, P. 178.

2 Ibid, P. 178.

3 Ibid, P. 179.

to learn building techniques and building skills which would later provide them with new means of increasing their income.

Houses were built by taking into consideration income generating opportunities, leaving enough space for workshop, shops, subletting rooms, restaurants and the like. The community itself contained income generating properties, a deep well and a market, which could provide the needed community income for maintenance activities. Finally, the Building Materials Factory which had been built on the site may remain on the site and provided a permanent source of substantial income to the community from the production and construction of houses in other locations once the project was completed.

2.2.9. Community Participation in project Maintenance

In the Building Together Project participation in community activities developed over time and was subject to considerable fluctuation. For participation to be effective, it required the gradual development of a structure of non-exploitative relationship, in which participants saw and felt that everyone benefits from working and living together. A strong and legitimate community organization, which could sustain a sense of participation based on quality, could not be built overnight (1).

As clusters got completed, relationships between clusters ought to begin to grow. Community projects should start and the community as a whole would begin to take responsibility for its future. The community services must be maintained through the generation of community incomes. New community projects had to be initiated, planned, financed, constructed and operated and community savings ought to grow. Slowly over a period of a few years, the community had to learn to fund for itself, and its assistants and consultants ought to slowly move out of the picture.

1 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 174.

At the same time, the people could not be rushed to take decisions and to assume strange responsibilities for which they had no experience. Leadership had to be allowed to develop naturally and gradually and initial leaders ought to be replaced by those emerging slowly at later stages. Every activity ought to be brought into the range of everyday experience of the participants. For community decisions to be real and sensible, people ought to be aware of implications and consequences of decisions.

2.3. community Building in South Korea

2.3.1. Description of the project

Community Building Project was implemented in Begum Jahri, which is located 12 Kms from the Southwest boundary of Seoul/the capital of Korea. The project aimed to start a new life with evicted squatters. The second project Begum Jahri II was located within ten minutes walking distance from Begum Jahri I project(1).

The people who participated and are still participating in the project come from the lowest income group of the Korean working population. Women tend to work in factories producing textiles or electronic devices, men are usually construction workers though there are some skilled workers. The slum communities from which they were drawn were large, over-crowded and under the threat of eviction. The families living in these communities were often socially isolated or separated from their neighbors and harried by insecurity and growing economic difficulties. No real networks of community cooperation and support existed and no consciousness of their communal potential was clear.

2.3.2. Intermediary Organization

The Community Building Project in Begum Jahri was organized by a voluntary Christian team in 1973(2). The Project team come to learn with the people in Seoul's largest slum (Ham river slum) the nature of their lives, the psychological nature and physical nature. Furthermore, their motivation was and is fundamentally religious and springs from their faith in and practice of the teachings of the Christian gospel. However, they had no intentions or ambitions to convert people to their belief. They wanted to practice their belief in the context of being with and for the poor. Their goal was to try to build a more human

1. Peter J. Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 140.

2. Geoffrey K. Payne, Low Income Housing in The Developing World, 1984, p. 206.

Community, within a slum community, with a spirit of sharing and trust (1).

In the summer of 1976 the residents of the Ham river slum received a warning from the government that they were to be evicted in 1977. The slum clearance had involved all the people who, having received a final eviction notice from the government, would dismantle their own houses by the due date and collect their materials to use them elsewhere. The Korean government itself provides no land for evicted communities and its supplies, at that time, a subsidy equivalent to \$US 500 only to those who had been residents of that particular slum prior to a certain date. So the people have to find a place or a new land to resettle on it (2).

The team itself was involved in these efforts and approached Cardinal Kim for a grant to enable the group to buy land. In January 1977 Cardinal Kim requested a grant for the group to buy land for a resettlement area. The approval was given for a grant of \$US 50.000 and with other money borrowed in Korea the team purchased four acres of land, half of it a few days before the final formal notice of eviction arrived, the other half after the resettlement families had already moved onto the land and were living there in tents.

The team planned the area in Begum Jahri I, contacted the people and organized their work in building their new houses. They gave them all possible help, especially, in the complicated process of buying the land, getting it registered and going through various procedures of building new houses.

The experience gained in Begum Jahri I first project confirmed the team's belief that much could be achieved in terms of community building through building houses. The team had grown to nine full-time members, all of whom lived in the first settlement. The group itself was searching for an even

1 Peter J. Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 132.

2 Ibid, p. 133.

More effective method or process of helping people to form new communities through building houses. The team began looking for a site in October 1978 for Bagum Jahri II project. In April 1979 land was located within ten minutes walking distance from Bagum Jahri I. They have got a German fund for buying this land (1).

2.3.3. Community Awareness

The project team goal was to try to build a more human community within the slum community, a spirit of sharing and trust. The means selected to achieve their goal was simply to share the life of the people. They made personal contacts with the people. In order to facilitate this process they rented two rooms as a kind of community center (2). There, they held group prayer meetings and people initiated meetings and discussions in which people could share each other's problems and provide some kind of support for each other. Basically) they aimed to become some kind of help in the formation of community consciousness (3).

It would have been useless for the team to approach divided and unfamiliar slum dwellers with a general or theoretical plan of resettlement. They would have listened until the land was bought and they knew the actual location. Consequently, they had to wait until the land was purchased before they could effectively approach the target group.

There was not enough time to provide some kind of orientation for the participants to bring them up to a level of community consciousness and cooperation which is a pre-condition to their being able to be in charge of the process.

During the course of construction in Begum Jahri I there was continuous daily communication with the people. There were also four community festivals and six communities Meetings.

1 Peter J. Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 140.

2 Jorge Anzorena and Wendy poussard, A Time to Build People's housing in Asia, 1985, p. 36.

3 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 132.

Naturally, these all had an effect on the process and some decisions taken by the group as a whole, affected the style of the houses. But their participation in the decision making process was minimal, and it was clear that the Begum Jahri I team were in charge of the project.

In Begum Jahri II project the team was able to plan the process; they have enough time and past experience from the first project. In May 1977, they contacted workers in various slums in Seoul and they distributed information about the project. In May the first orientation session was held for interested people at the site (1).

The team had decided to register families' applications to participate only after they had attended three such orientation courses. Each session lasted three or four hours and consisted of an explanation of the basic goals and philosophy of the project and of the need for community responsibility. When families had met this requirement; team members went to each home and conducted a survey. As the houses were very scattered in small slums located in five or six areas of Seoul this was time consuming but a lot of valuable data was gathered in this way.

At this point each applicant family's data was screened at a meeting of the entire team. At this screening, some families were rejected on the basis of their not being in such urgent need of a home, because it seemed clear that they would not actually move into the new home.

2.3.4. Community Organization

In summer 1976 the residents in Ham river slum received a warning from the government that they were to be evicted in 1977. Some people in this slum tried to organize themselves to find a new land for resettling. That was before the beginning of Begum Jahri project. 16 families gathered

1 Ibid, p. 140.

Together, in October 1976 and decided to look for land so that they could move as a group. This group eventually grew to about 50 families, but their efforts to find suitable land were unsuccessful (1).

During the initial implementation of Begum Jahri I project there was a major problem of unguided cooperation and participation by the people. That was due to the fact that they had come from three distinct areas in Ham river slum. These three different groups of families did not know one another and mistrusted one another. Much violence surfaced during the construction phase when they were living in temporary accommodation and building together. It took exceedingly strong and skillful leadership on the part of the team to keep the process going, to prevent the whole project from falling apart. This leadership saved the project but it also created a sense of dependence on the team.

Though this type of participation was actually very weak in forming a community, it helped to remove obstacles to community. It helped to build up a foundation for a community by working together the people came to know one another. Relationship formed, bonds of friendship and respect grew and these are the foundation of a community. In the process, a new sense of self-respect and confidence arose out of the people's cooperation, effort and achievement. The whole village, which now houses 300 families (130 families rent rooms), was built in six months and this is a powerful, reinforcement of the power of people's cooperation and solidarity. Everyone from grand-mother to four years old children participated in the construction of the houses. It is true that the houses they were building were their own but they were participating as workers, not as planners and decision makers. However, the community at Begum Jahri has continued to develop its spirit of cooperation and Commitment.

1 Ibid, p. 132.

Furthermore, communal activities and associations have grown up and succeeded (1).

2.3.5. Community Participation in Decision Making

During the initial phase of Begum Jahri I project there was very little opportunity for the people to participate in the decision making. The eviction had materialized very rapidly and the land was purchased only five days before the people signed up (2). The orientation of the people to the nature of their new situation could not be achieved. The team had originally planned the new site on accommodating 100 to 120 families, but so many applied that they accepted 170 families. According to Korean's building codes, the team was forced to construct row single-storey houses with infrastructure. On the day of eviction, a few families moved to the site. By mid-May 150 families were living in tents on the construction site (Figure, 2.19). The rush in decision making and planning was also due to the fact that since Korean winters are very harsh, the houses had to be completed before the end of November (3).

Begum Jahri II project was different from the first one. In Begum Jahri I project the community participation in construction was difficult. That was due to government's new Building code.

However, the participant's meetings are being held twice a month. Various problems concerning construction or the general process of forming a new community are presented to the people who take over the meetings and come up with their solution. However, their input in decision making has been minimal; although greater than that of Begum Jahri I group. Despite there have being almost no work together on construction, the team members agree that the new group, as a

1 Ibid, p. 138.

2 Jorge Anzorena and Wendy Potshard, A Time to Build People's Housing in Asia, 1985, p. 37.

3 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 134.



Fig. 2.19 The community lived in tents while they constructed their houses (Ref. 28).



Fig. 2.20 The construction of the houses was done by the people themselves (Ref. 5).

result of the intense orientation course, has a stronger consciousness of identity than did the 1977 group at the same stage of the process(1).

2.3.6. Community Participation in Project Management

In Begum Jahri I a village administration committee was elected by the people in March 1978. At the same time, the women's club was formed which has built a Kinder garden which is vital to the needs of the community in which most mothers work. A credit union was formed in June 1978 which is still tremendously successful (2). Then, in July, a farmer's band was formed to play at community functions such as the moon festival and weddings. The money given to the band on these occasions went towards the purchase of a large tent in which such functions could be held (3).

In February 1979, the community of Begum Jahri showed unique initiation and courage in facing the government orders. When the community was instructed to build a road in an inappropriate part of the area, they refused to do so because it was unnecessary and would have been a waste of their money and effort. Another matter on which they have the power to speak up and act for themselves was in response to government direction about painting their houses. Al though the government demanded the use of a color scheme involving four colors, the people used two. They went ahead despite official disapproval and painted the houses as they wanted.

2.3.7. Community Participation in Implementation

In Begum Jahri I, after getting the government approval of purchasing the land, the people cleared and leveled the land and prepared the housing site. Then the Begum Jahri team selected three skilled members of the resettled group to act

1 Ibid, p. 142.

2 Jone Anzorena and windy Potshard, A Time to Build People's Housing in Asia, 1985, p. 38.

3 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 139.

as construction supervisors. With the exception of electrical installation and the contributions of a few carpenters and bricklayers, the construction of the houses was done by the people themselves (Figure, 2.20). Five months after the eviction, 170 houses were erected. From November to December 1977 the people continued working together and completed their own drainage system. In March 1978 the people constructed their own elevated water tank which provided the community with running water (1).

The whole project process, from the selection of the target group to the completion of the houses, covered only a period of seven or eight months. After the basic structure (inner, outer walls and roof) were completed each family got its house through a lottery. Up to that time, everyone worked on all of the houses indiscriminately without knowing whose house it would be. So there is a feeling of "I helped build your house, you helped build my house" rather than a feeling of "I build my own house". There is a collective feeling of "we built these houses, this village" (2).

Later in March 1979, the community decided to build a recreation center for the old people of the village. The people contributed more than 80% of the costs and constructed the center through mutual help.

In Begum Jahri II project, participation of the people in the actual construction was made very difficult by the government's introduction of a new building code. Because the land was so expensive, the team was obliged to build two storey row houses and this kind of construction, according to the new rules, has to be done by a licensed construction company. In fact the restrictive nature of the new building code is such that if all its requirements were to be followed it would be impossible to build houses for slum evictees.

1 Jorge Anzorena and Wendy Potshard, A time to Build People's Housing in Asia. 1985, p. 37.

2 Peter J. Swan, Seven Asian Experiences in Housing the Poor. 1980, p. 138.

It was announced to all participants who signed up for the project that they could be employed by the construction office if they were willing to work for the wages being offered to other workers. Only a few skilled tradesmen accepted. The others found it too difficult to travel to and from Begum Jahri and would only have earned the wages of assistants. However, a community center has subsequently been erected entirely by the participants themselves (1).

2.3.8. Community Participation in Cost Recovery and Loan Repayment

In Begum Jahri I the people paid about 54% of the total costs involved in building the settlement. The remaining 46% were covered by a housing loan from charity organization. The charity organization granted \$US 50.000 to the project team to help the people in completing their housing construction. The people financial resource was insufficient. During the first year the families paid only the interest of 1% per month, the principal amount of money being repaid over the following four years. By the end of 1979, 98% of the participants have duly met their repayment commitments (2).

In Begum Jahri II project the people could not afford the land price, because it became very expensive. So the German funded that part of the project. The team began looking for a new site in October 1978.

In April 1979 land was located within ten minutes walking distance from Begum Jahri I. In order to buy this land before the German money had arrived, the team had to borrow money from the society of Jesus in Korea and to take a three years loan of \$US 100.000 from SELAVIP (funding foundation) and then to use the revolving fund money from the housing loan repayments of the Begum Jahri I project (3).

1 Peter J. Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 142.

2 Ibid, p. 136.

3 Ibid, p. 140.

Housing construction was financed by the people. Participants who were accepted by the team made a contract, but each family determined, according to its own circumstances, the amount and dates of down payments they would make before the end of November 1979. The sum of the payment to be made before moving in was fixed by the team and the entire group of people after consultation, but they were free to decide their own schedule of payments. The participants would become members of a community housing cooperative which would act as the recipient of loans. In other words the people will pay back their housing loans through their own housing cooperative.

2.4. Freedom to Build Project in the Philippines

2.4.1. Project Description:

The Freedom to Build Project in Manila, capital of the Philippines, is a product of government-private sector cooperation. The government developed the land and left the people to create their own housing. The project strongly supports people's participation but this support is different from the usual understanding of this term. People's participation usually implies group action. The organization of a community is meant to assess its needs and react to this assessment in an organized way with priorities and means selected by the community itself through some form of group process (1).

The Freedom to build project proposes a "housing by people" approach, recognizing the ordinary conventional model which ignores community participation in the building process. Group housing action, is preferable to the individual effort, but The Freedom to Build Project emphasizes, not the group or individual, but the user controlled housing action.

In 1974, the Philippines government opened the Dasmariñas area Resettlement Project. Evicted Manila squatters were relocated there. Each beneficiary is given a serviced home site without housing. Since the resettlement area provided some form of security of tenure, it seemed a suitable opportunity to begin the Freedom to build approach the Dasmariñas area is a 234 hectare site, 33 kilometers outside Manila. There were about 4000 families in the area (2).

In 1975, research was conducted among Manila squatters. The research was commissioned by the United Nation's Center for Housing, Building and Planning. The squatters were creative and imaginative people, they have built housing

1 Ibid, p. 47.

2 Geoffrey K. Payne, Low Income Housing in the Developing World. 1984, p. 204.

Stock more than did the government and the private sector combined. Usually operating illegally, they have built without professional assistance, at very low cost, without finance and, most important; they have built houses that enjoyed a high degree of satisfaction. The Freedom the Build Project gathered this data and designed its project accordingly.

2.4.2. Intermediary Organization:

The staff of Freedom to Build Project attempted to identify the constraints to house building freedom and make effort to minimize or remove those constraints. The most obvious constraint to the building aspiration of the poor was the economic one. There was little money for housing. So, the main strategy of the Freedom to build staff was to open a unique form of building supply store which provides a variety of materials at costs considerably below Manila's commercial prices.

The building supply store sells galvanized iron sheets with very low price. The project staff goes to the factory and explain their objectives to the company president and ask for the lowest possible price. Then, they buy rejected quality and in bulk. Also they are not trying to make profit for themselves. They also sell Black Iron sheets for roofing. This is non-coated raw steel with no zinc protection. They coat it with high quality paint and sell it with low price.

The project staff buys their lumber from a saw mill in Ton do, near Manila, where they get odd sizes and cut these into more usual sizes in their shop. They also get lumber from construction sites after they have been used in making cement buildings. In cement, there is very little to do about the price. The staffs just try to get the lowest price possible. They use this cement in producing cement hollow blocks. They have an improved system of manufacturing (1).

1 Peter J. Swan, Seven Asian Experiences in Housing the poor. 1980, p. 52.

They also sell fiber board which the people find very easy to work with; it requires very few nails and very few pieces of lumber for studs.

The building supply store is the most substantial assistance given by the project staff to the resettled families, but they have other strategies to make house building easier. For example, they run a small shop where people can order parts of their houses. They manufacture window lowers, doors, panels, and sometimes they make chairs, tables and beds for families or stairs for inside the house. The project staffs sell these items at the same price as the material in the store plus an additional charge for labour (1).

Moreover, the Freedom to Build staff offer technical assistance, and they have several vehicles which serve the community. The project truck would also be borrowed by the people. For example, if they have materials in Manila and have no way of bringing them to the site, the people just charge the gas and the driver's salary and they can use the truck. All Freedom to build employees is residents in the area, so they are sharing the same living conditions with the people, and they can know better about their actual needs and priorities.

2.4.3. Community Awareness

There was no significant role of community awareness by the staff of Freedom to Build Project before the beginning of the Resettlement project. The project staff began working with the resettlers after they were relocated in the site. However, there was a strong informal communication between the residents and the project staff. All staff of Freedom to Build Project were living in the same area with the residents, and they were accessible to be reached. As mentioned, the project staff offers his technical assistance for the people. For example, they have several trained

1 Geoffrey K. Payne, Low Income Housing in The Developing World, 1984, p. 204.

Carpenters; on request they go to the house and discuss with the owner what he wants to do. Then they draw a simple diagram and estimate the cost. In dialogue with the family they decide mutually how to achieve improvement in the house they are planning.

2.4.4. Community organization

The staff of Freedom to Build Project had nothing to do with organizing the people in small groups, but only gave opportunity to the families and friends to work together. The sharing of house building among several families is a strong cultural value in the Philippines. It emerges spontaneously without assistance from an external agent. From this point of view Freedom to Build is not a housing project at all but an assistance program to almost 4.000 individual projects in the area(1) .

Sometimes groups of families or relatives organize themselves and go together to the project staff to discuss their building problems. Furthermore, mostly neighbors, friends and relatives help each others in the building process of any member's house. This is done on the basis of mutual sharing where everyone offers a hand, money or building materials to build the house.

Also a group of neighbors spontaneously organized themselves into a savings club. They intended to use the savings for house improvement but, according to them, the club served as an instrument of more meaningful concern for each others. The growth of the feeling of a community identity was very obvious.

2.4.5. Community Participation in Decision Making

The site planning of the Dasmariñas Resettlement Project was done by the Philippines government. There was no role for the resettlers to say anything in that concern. The

1 Peter J. Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 56.

Philippines government role was just to give the resettlers a serviced home site without a house. It was left for the resettler to make his home; it was completely his own responsibility (Figure, 2.21). He was expected to do what the poor have been doing for years. He works as the architect, designer, planner, foreman and labourer with the assistance of his wife and children, his neighbors and other relatives. For example, a resettler from the project bought few bags of cement and then with a pen designed his house on the side of the cement bag. Then he mixed the cement and proceeded to build the house (Figure, 2.22).

2.4.6. Community Participation in Management

The resettler in the project manages all the building operations. He makes his own design and selects the building material needed for constructing the house. This is done according to his actual needs and his financial ability. If the resettlers need any outside help, the staff of Freedom to Build Project will be willing to help and assist them (Figure, 2.23).

2.4.7. Community Participation in Implementation

The project employs the Freedom to build concept, which means that construction of houses will be primarily the responsibility of the individual beneficiary. The freedom to build idea assumes that individual families are able and willing to build their own homes, and furthermore, that it can be done on step-by-step basis, with additions and improvements made when resources permit (1) (Figure, 2. 24).

The resettler knows how to use inexpensive materials such as second-hand lumber, factory rejects, used material and anything else which may look like junk to other people but to him it was of value. Labour does not cost so much.

1 Dr. Meara Bapat, Paul Baross and Parwoto Tjondrasugianto, Community Based Housing Development, September 1985, p. 71.



Fig. 2.21 The resettler in construction his own house (Ref. 28).

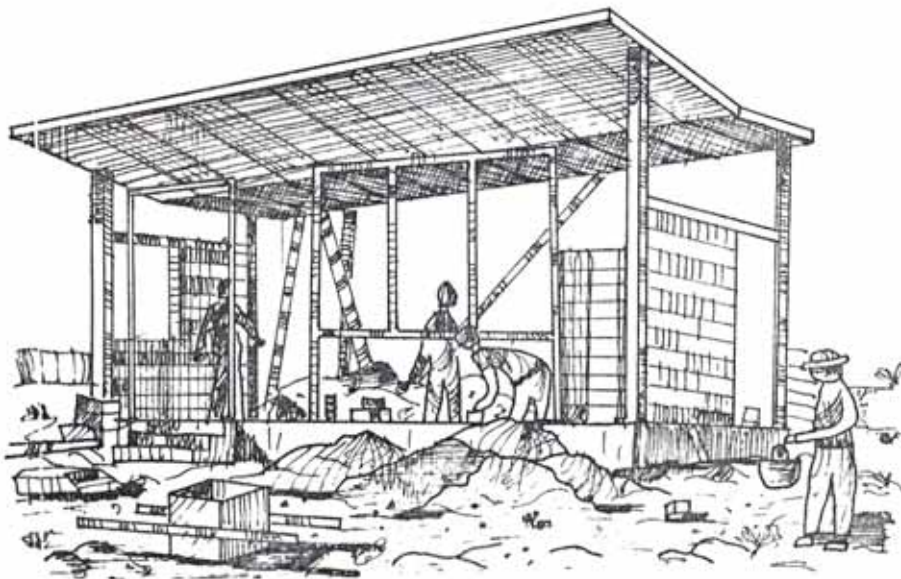


Fig. 2.21 The resettler works as designer, planner, job foreman and labourer (Ref. 28).

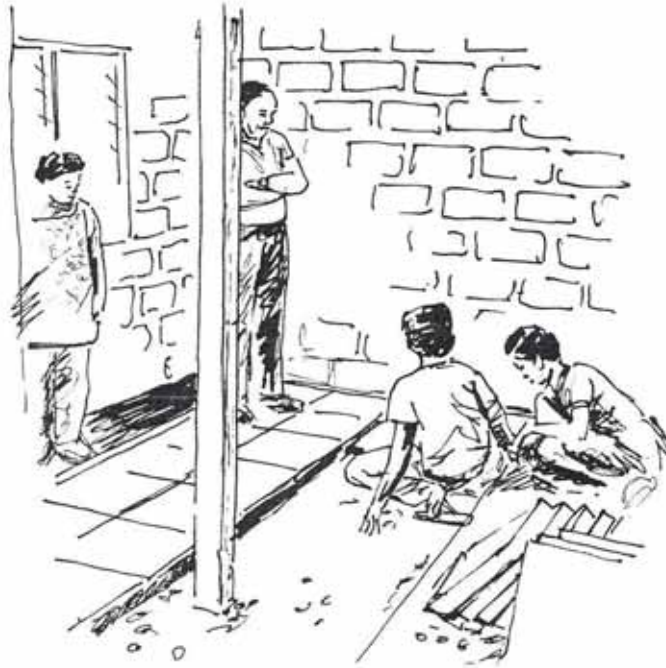


Fig. 2.23 The resettler manages all the building operation (Ref. 5).

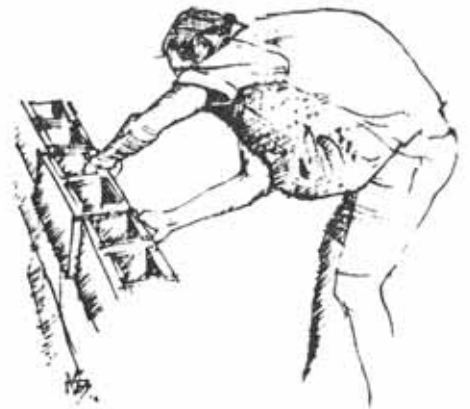


Fig. 2.24 Individual families can build their houses on step-by-step basis (Ref. 5).



Mostly neighbors, friends and relatives are just offered something to be shared together after a long day of work. The real cost of labour is not in cash but in the very deep understanding and concern for each other and the unexpressed promise that the house owner will help others in the group when they, in turn, are ready to fix their houses. So, because of this sharing effort, there are no real labour costs at all. Moreover, there are no professional fees and no financing costs for services.

2.4.8. Community Participation in Cost Recovery

In the Dasmariñas Resettlement Project a group of neighbors spontaneously organized themselves into a saving club called "Paluwagan". When the staff of Freedom to Build Project knew their success and how the club helped their housing with their neighboring spirit, the project staff asked them to help in organizing other groups similar to theirs. The results were quite successful. Gradually many clubs were formed.

The system of the saving club ran this way. Ten to twenty families are grouped together according to some rules and regulations that they themselves agree upon. They also agree to have a saving of certain amount of money from their income each week and use it for the gradual improvement of their houses. Then the group decides who will be the treasurer and who will be the winner of the first week's savings. The sequence of winning is usually done by lottery. Then, the winner uses the money to purchase building materials from Freedom to Build Project store, receiving an incentive discount of 10%. This procedure continues until the last family has won.

In all of this, Freedom to Build Project does not control the groups but they only support them. The people themselves administer the funds and keep the accounting. Through encouraging these groups the staff of Freedom to

Build project felt that they were not only building houses but also building a community (1).

The people build their houses gradually over a period of time. This gradual development of the house is dependent on the availability of some extra cash or money from irregular sources. Sometimes a family would expand its house to earn income from room renting.

1 Peter J. Swan, Seven Asian Experiences in Housing the Poor, 1980, p. 56.

2.5. Comparative Analysis of the International Experiences

Lusaka squatter Upgrading project	Building together project in Bangkok	Community building in South Korea	The freedom to build project in the Philippines
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2.5.1. Intermediary Organization

The Lusaka housing project was set up as a department, housing of project unit, of the council. The housing project unit was a service organization and had a number of departments.

The promoters of this project, all members of academic organization, non-go voluntary team. Their goal was to try to build a more human community, developed the land and left the people desire and community, with a to create their own established the spirit of sharing and housing with the assistance of the building together trust. project staff.

2.5.2. Community Awareness

There was off-site Education course was held for all project leaders and on-site participants. The daily communication of briefings for leaders education course was with the people on awareness by the and community divided into ten sessions based on staff of freedom members. Seminars weekend to build a Jahri II their at the beginning. were held for all aiming to build a Jahri II their at the beginning. leaders. Series of commitment to the orientation sessions However, there residents' briefing project's goals the were held, followed a strong sessions' basis or on through the by families meeting informal small groups were articulation of the at their homes. communication between them. also held. common self-interest of participation.

2.5.3. Community Organization

The community was Participating families were organized through freedom to build the existing party selected according criteria implementing the to do with organization at to special they were project, under organizing the section, branch and and then they were strong and skillful people in small constituency level divided by lottery leadership of the groups, but only in the squatter into cluster groups, cluster 16-20 gave opportunity to the families and areas. each containing 16-20 friends to work together.

2.5.4. Community Participation in Decision Making

The community was involved in the physical planning, and not in the general project planning. This is done by involving the community in consultation on the physical components of upgrading, primarily routes setting of facilities. The people were not involved in decisions on density and site location. People's participation in the design of the houses was limited. Most people appeared to be satisfied with house design and they become more involved in the ongoing planning and design decisions.

During the initial phase of Bagum Jahri I project, there was very little opportunity for the people to participate in the decision making. Also, their input was into decision making was little in Bagum Jahri II project.

The site planning of the project was done by the Philippines government. It was left for the resettler to make his own home; it was completely his own responsibility.

2.5.5. Community Participation in Management

In the Lusaka squatter Upgrading project planners agreed on the importance of local involvement and dividing the responsibility between them. In Together Building project, site management of four styles of management: the contracted mutual aid self-help work and voluntary community Building project, administration was elected by people. Also, women's club and credit union were formed. In Bagum Jahri I a village committee was elected by the people. Also, the women's club and credit union were formed. The resettler in the project manages all the building operations. He makes his own design and selects the building material needed for construction.

2.5.6. Community Participation in Implementation

Residents would participate in project implementation by means of ongoing mutual help and mutual improvements, at three levels of organization, individual, and community basis. Families in project implementation by means of mutual help in fabricating structural components in site factory building houses. In Bagum Jahri I the people prepared the housing site and constructed their houses by themselves through mutual help. In Bagum Jahri II community participation was made very difficult due to new building codes. The construction of the houses was the responsibility of the individual beneficiary by means of self-help. Houses were built on step-by-step basis, with additions and improvements made when resources permit.

2.5.7. Community Participation in Cost Recovery

Resident households were to be responsible for composite charge repayment of infrastructure, water supply, and disposal and drainage. House construction or improvement loans were available. Each family would pay for the land, building materials and the expenses of the company in having skilled labour assist them. Houses were built with income generating opportunities in mind. In Bagum Jahri I the people paid 54% of the total cost involved in building the settlement. The remaining were covered by a housing loan. In Bagum Jahri II German funded the land price and the people financed the housing construction.

2.5.6. Community Participation in Implementation

Maintenance of infrastructures was the responsibility of Lusaka council, but due to some problems, maintenance is to be organized on a community basis. The community will be responsible for project maintenance through the generation of community income. No Information.

2.6. Comment

The study of the international experience of community participation in low income housing in the developing countries reveals the fact that the experience of each country is different one from the other. This difference is due to various circumstances related to each country, notably its political situation, general income, way of living and the social relationships within its communities. There are also many factors which affect each experience, such as: available building materials, modes of communication between the community and the governmental authorities, man-power resources, degree of community organization and the financial resources of the community. The experience of community participation in each country is affected by its local condition and it is not recommended to apply any experience of other countries without being adapted to the new situation.

But there are some recommendations which could be concluded from the comparative analysis of the international experiences. These recommendations are summarized in the following items:

2.6.1. Intermediate Organization

It is important to define an intermediate organization operating between the community members and the governmental authorities. The main task of this organization is to facilitate community participation by providing the initial stimulus for organization and helping the people to articulate their needs and aspirations into meaningful action programme. The intermediate organization can also provide the necessary access to technical, architectural and financial resources. This is done after defining the role and responsibilities of both the community members and the governmental organization in any low income housing project.

The intermediate organization could be formed as:

- a. Governmental agency, e.g., department of the city council.
- b. An academic organization.
- c. Non-governmental voluntary organization.
- d. Government-private sector co-operation.

The staff of the intermediate organization have to include architects, planners, sociologists and other technicians working together in one team.

2.6.2. Community Awareness

Community awareness has to be held by the intermediate organization to all members of the community. Its main task is to inform the participants of the content of their project, the options available and their financial and other responsibilities, aiming to ensure active support and cooperation from their part. This could be done through many modes of communication with the community members, such as:

- a. Personal contacts with community members or with groups.
- b. Public meetings for the whole community.
- c. Education courses for the project participants.
- d. Seminars with community leaders.
- e. Television and radio programmes.
- f. Newspaper, posters, slides and film shows.

2.6.3. Community Organization

The community could already be organized, and it is better to make use of the existing organizations rather than establishing new ones. In other cases the community could organize itself spontaneously without any assistance from an external agency. But sometimes an outside help could be needed, e.g., intermediate organization to organize community participation. In the last case a certain hierarchical structure has to be established, beginning with small groups of participants (20-25 families) and ending with a leading committee (community representatives).

This is done to facilitate the communication between the intermediate organization and the community members in various decision Makings. This is also done to facilitate the division of tasks in construction and maintenance operations among community members.

2.6.4. Community Participation in Decision Making

Participation in decision making may range from "information collection" in which participants are given the opportunity to state their preferences and priorities for the intermediate organization to take into account in project planning and design, to the actual determination of priorities, definitions of components and taking of planning and design decision by participants. It is better to involve the participants in the detailed physical planning of their particular area and not in the general project planning of the whole city.

In any low income housing project it is the responsibility of the intermediate organization staff to explain to the community the objectives, alternatives and basic principles of the project programme, so that the community is able to participate in planning and design decision making. Community participation in decision making aims mainly at ensuring the active participation of the community and the implementation of what they have already decided, and their responsibility to maintain them.

2.6.5. Community Participation in project Management

Project management is the responsibility of both the community and the intermediate organization in a way in which the intermediate organization supports and reinforces the participants own effort to improve their environment rather than taking it over from them. It must act as a stimulus for the investment of community savings, skills and initiatives. Management of low income housing projects could be one or more of four distinct styles of management:

- a. Contracted work, mainly in providing site infrastructure.
- b. Mutual-aid work, mainly in building basic houses.
- c. Self-help work, mainly in completing the houses.
- d. Voluntary community work; mainly in providing community

2.6.6. Community Participation in Implementation

Community participation in implementation is important as it reduces the total cost of the building construction process, and it gives the community the experience which will help them in maintaining their project, and in constructing other projects. Moreover, it will increase job opportunities for the community members which will be reflected on their total income. The actual participation of family members in construction, rather than their relatives, friends or hired hands, is crucial for the success of this construction process as it builds bonds among the participants.

Technical and architectural assistance, tools and access to building materials, have to be given to the community by the intermediate organization through their leaders. Community participation could be seen by means of ongoing self-help and mutual-help at three levels:

- a. Individual basis, in completing housing construction and in improving it.
- b. Group basis, in the housing construction process and in upgrading the housing environment.
- c. Community basis, in undertaking the unskilled aspects of the contractor's work or in constructing additional community facilities.

2.6.7. Community Participation in Cost Recovery

The project participants are responsible for their project and the intermediate organizations have to assist them in their effort, but without ignoring their right and ability to think and act skillfully. The intermediate organizations have to encourage the participants to invest their own financial resources in their project, not only in terms of cost but also in terms of labour skills and organization efforts. Subsidized land, building materials, tools and Housing construction or improvement loans have to be available, if possible, for the community through the intermediate organization.

The community could organize itself on group basis for the collection of services charges and loan repayments by their leaders. Families could also group together according to some rules and organize themselves into a saving club.

Housing projects for low income people have to be built with the income generating opportunities in mind.

2.6.8. Community Participation in project Maintenance

Community participation in maintenance is the final phase in the low income housing project. This should be also the aim of any project concerning community participation. The experience and knowledge gained from the implementation of the housing project facilitate the community to maintain what they have themselves decided to build. The community could make use of their past organization, during the implementation phase, in organizing the maintenance of their projects.

CHAPTER THREE

EGYPTIAN EXPERIENCE IN COMMUNITY PARTICIPATION

- 3.1. Background Experience in Community Participation in Egypt.
- 3.2. The Role of Community Participation in the National Housing Policy.
- 3.3. Factors Affecting Community Participation in Governmental Projects.
- 3.4. Community Participation in Governmental Projects.
- 3.5. Community Participation in Informal Housing.
- 3.6. Individual Participation in Improving Housing.
- 3.7. Community Participation and Home Improvement Loans.
- 3.8. Social Impact of Community Participation.
- 3.9. Community Participation in Aided-Self-Help Projects.
- 3.10. Training Programs for Community Participation
- 3.11. Comment.

3.1. Background Experience in community participation in Egypt

In prehistoric age man built his own shelter by himself. The participation of family members in everyday activities was necessary for their life. When man became familiar with certain work it was necessary for the small communities to cooperate in developing their own environment. Community participation as such is a natural and spontaneous way of life (1) (Fig. 3.1).

During the history of ancient Egyptians it was clear that community participation was the way to build their own environment using the available building materials, mainly the mud deposited by the water of the Nile. At the same time these communities were well organized to build their permanent residences for their masters and villages for themselves. They produced their building materials by themselves (Fig. 3.2). All the construction steps have been done through their participation in decision making of site location, the housing design, the construction, and the maintenance.

Although the ancient Egyptians knew the burnt mud brick, they preferred the unburnt brick for its excellent thermal insulation and its comparatively easy production process (2).

They used a basic mixture of mud, wheat chaff and dung as a fermenting agent to improve the regularity of the brick. This was the appropriate building experience which suited the performance of community participation in the building process (3).

It is clear that the ancient Egyptians possessed the talent, ability and the good experience which was improved, on the basis of try and error system, through many centuries.

1 Mohamed Anwar Shokri, Architecture in Ancient Egypt. 1986, p. 60

2 R.J.S. Spence and D.J. Cook, Building Materials in Developing Countries. 1983, p. 65.

3 A.Sh. Girgis and M.EL. Hifnawi, Rural Low Cost Housing. Bricks and Wall Unit Industry in Egypt. 1977, p1.

They made use of all available resources for them including manpower skills, local materials and local techniques. Most of this past experience is becoming the tradition for Egyptian people living in the rural areas in the present time. Community participation has been inherited and experienced by low income groups in building their own houses, in the present time, in rural areas or their informal housing in urban areas(1).

During the Islamic era the Egyptians developed different forms of community participation. These forms are derived from the Islamic values of cooperation and self dependence. Low income groups were able to apply different forms of participation in building their houses. The inhabitants of each community were able to cooperate and provide the funds, the building materials and labour in building their districts. They participated in the decision making as well as in the construction process, with the assistance of local builders and carpenters who were the only skilled manpower required. Skilled labour were organized in a form of gangs, each had its leader. The interference of local authorities was bound to see that everyone is observing the rules of Islam in building the urban environment and maintaining it.

This was the role of the Mohtaseb who was appointed by the Waly for each neighbourhood. Good examples of architecture without architect was built during the Islamic period in Egypt (2).

Hassan Fathi tries to review the Islamic values of cooperation, community participation and self reliance (3). Not only to build suitable dwellings for the poor by using local materials and manpower but to experience the Islamic values inherited by the Egyptian people.

1 Ibid.

2 Ibrahim, Abd el baki Mohamed, Islamic Prospective of the Architectural Theory. 1986, p. 63. (In Arabic).

3 Fathi, Hassan Architecture For the Poor. 1973, p. 191.

This means that community Participation in housing projects is part of the values inherited by the Egyptian people since the time- of Ancient Egyptians. This also means that community participation requires appropriate building technology as well as appropriate design and planning concepts.



Fig. 3.1 Queen Hatshepsut making mud brick (Ref. 13).

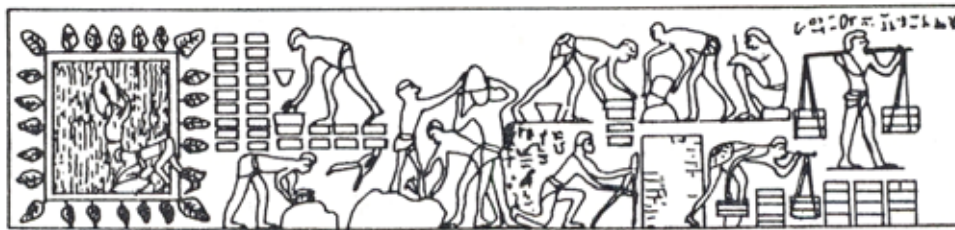


Fig. 3.2 Brick industry in the paranoiac age (Ref. 24).

3.2. The Role of Community participation in the National Housing Policy

3.2.1. The Nature of Housing Problem:

The problem of housing in Egypt is not isolated from the problems facing the social and economical development of the country. The housing problem in Egypt could be seen in perspective of cultural, socio-economic and technical aspects (Fig. 3.3).

In its social perspective, the shortage in housing units affected badly the social values of the community. This could be recognized in the increase rate of crimes, disorder and deterioration of the public health, specially within the over-crowded districts where people have difficulties in living under a shelter. From its economic perspective, the low income groups are unable to pay or rent new housing units and on the other hand the Government do not have the economic resources to finance the required number of housing units for them. From the technical perspective, the building industry depends to a large extent on foreign resources which the low income group could not afford to obtain. This is beside the shortage in skilled labour and appropriate building technology.

The housing problem in Egypt is basically a result of the following factors (1):

- a. The shortage of housing units accumulated along the last thirty years, specially for low income groups.
- b. Increased population growth rate to about 2.7% (Fig. 3.5).
- c. The deterioration of the existing housing stock due to lack of maintenance.
- d. Rural migration to urban areas which contributed to the uncontrolled urban growth (Fig. 3.4).
- e. The lack of an appropriate national housing policy within a national urbanization strategy.
- f. The shortage of money invested in low cost housing projects.

1 Institute for Housing Studies BIE, Excursion to Egypt, 1985, p. 37.

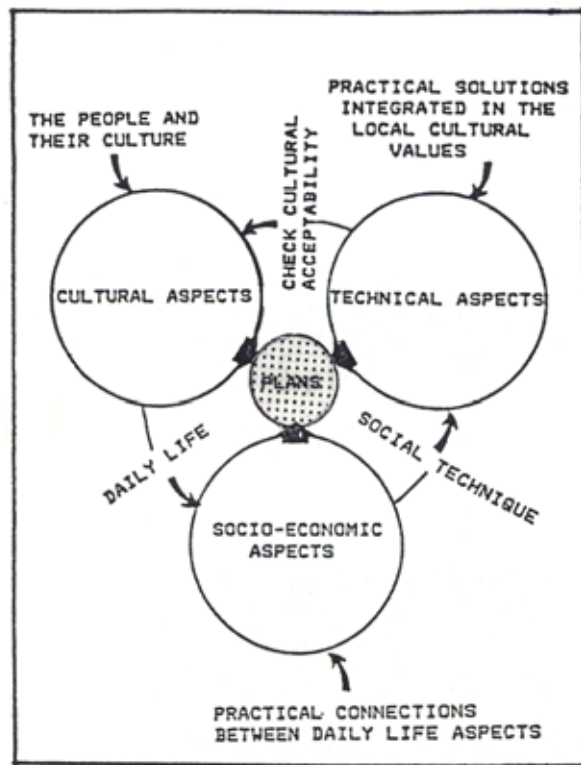


Fig. 3.3: Different aspects affecting housing plans. (Ref. 49).

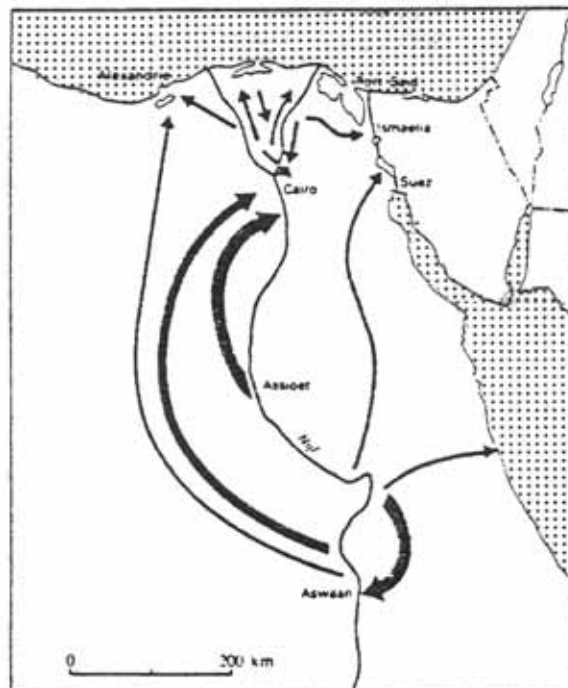


Fig. 3.4: Rural migration to urban areas in Egypt which contributed to the uncontrolled urban growth during the seventies (Ref. 49)

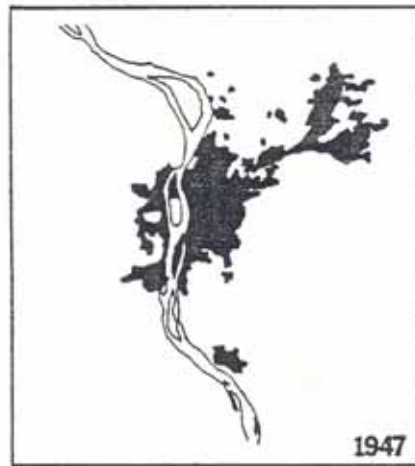
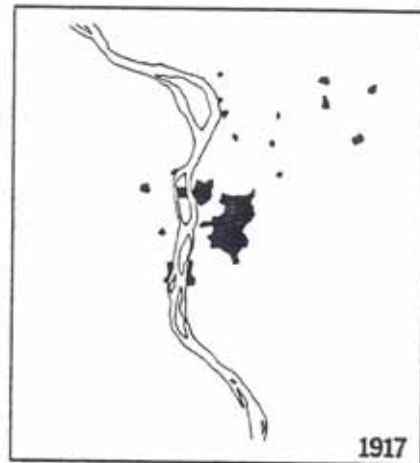
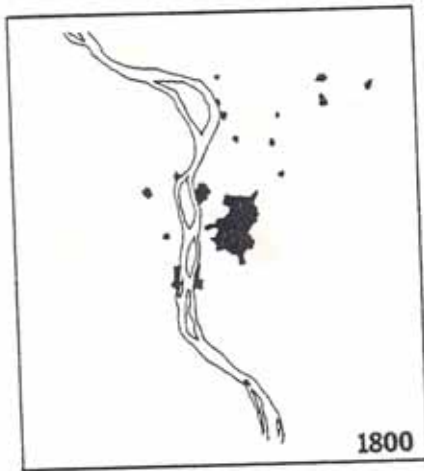


Fig. 3.5: Urban growth of Cairo as a result of the increasing population (Ref. 49).

- g. The increase in the final cost of building due to the increase in cost of land, building materials and skilled labour.
- h. The existence of rent control discourages private investments in low cost housing projects.
- i. The lack of well organized public participation in low cost housing.

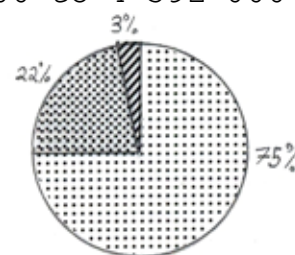
3.2.2. Shortage in Housing units

The amount of housing units needed, as was indicated by a special committee in the Egyptian shoura council in 1981 was about 1,700,000 units in total. They are classified as following (1):

- a. Number of housing units needed to be replaced because of their unhuman condition. 600 000 units
 - b. Number of housing units needed to replace the housing units in deteriorating condition. 700 000 units
 - c. Number of housing units needed to decrease occupancy ratio (person per room) 400 000 units
- Total 1700 000 units

The report also estimated the number of housing units needed in the year 2000 by 3 600 000 to 4 392 000 units classified as following:

For low income families	75%
For middle income families	22%
For high income families	3%



3.2.3. The Lack of Money Invested in Housing

The amount of money invested by the government in housing projects related to the total budget invested in other fields in Egypt decreased from 28% in 1952 to 4.9% in 1978, and started to increase to 10.1% in 1981 and 13.3% in 1983. It is clear that the level of investment in housing, which receives a high priority among the available resources, is nonetheless very small in comparison with the enormous

1 Special Committee in the Egyptian Shoura Council, Housing Problem in Egypt, 1983, p. 16.

Shortage in housing units. This suggests the importance of maximizing the number of units actually built with the investment level available. This also emphasizes the need to seek alternatives for low cost housing solution instead of the construction of standard housing units. Community participation may be the last alternative to reach this objective when the appropriate building technology is developed to serve this policy. The government will then help those who can help themselves through cooperatives and community participation systems. Housing projects have to be coupled with production projects in new communities. Table 1: Percentage of money invested in housing projects by the government related to the total money invested in other fields (1).

Year Percentage	
1952	28.0%
1960	12.6%
1973	8.8%
1979	5.9%
1981	10.1%
1986	13.3%

3.2.4. Housing Suppliers in Egypt

It is important to review all housing suppliers in Egypt and the kind of housing they supply in order to identify in which part community participation could be applied.

The housing projects in Egypt are realized through two major sectors, formal and informal. The formal sector comprises both governmental and private sector projects (Fig. 3.6). The informal sector covers the squatters and spontaneous urban settlements, as well as housing subdivisions and rural housing (Figs. 3.7 and 3.8).

1 Ibid, p. 23

It also covers the extent and alterations in the existing housing stock in order to add more housing units (Fig. 3.9).

The housing supplied by both the formal and the informal sectors could be classified as site and services projects, upgrading projects, appartemental building, row houses, multipurpose buildings, single houses and shelters.

To identify the projects in which there could be an input from the community members the housing suppliers are classified against housing types in Table (2).

Table 2: Housing types and housing suppliers

Housing Types Suppliers	Site & Services	Upgrading	Apartments		Row. houses	Single houses	Multi purpose	Shelter
			Towers	4 walk up stores				
<u>Formal Sector 20%</u>			✓	✓	✓	✓	✓	
Private sector 15%				✓			✓	
Cooperatives				✓			✓	
Government 5%	xxxxx	xxxxx			xxxxx			
Army			✓	✓				
<u>Informal Sector 80%</u>								
Squatter Settlements				xxxxx		xxxxx		xxxxx
Spontaneous Settlements						xxxxx		xxxxx
Housing Subdivisions				✓		xxxxx	✓	
Rural Housing						xxxxx		xxxxx
<u>Extension and Alteration</u>								
					✓			

xxxxx Ability of Community Participation

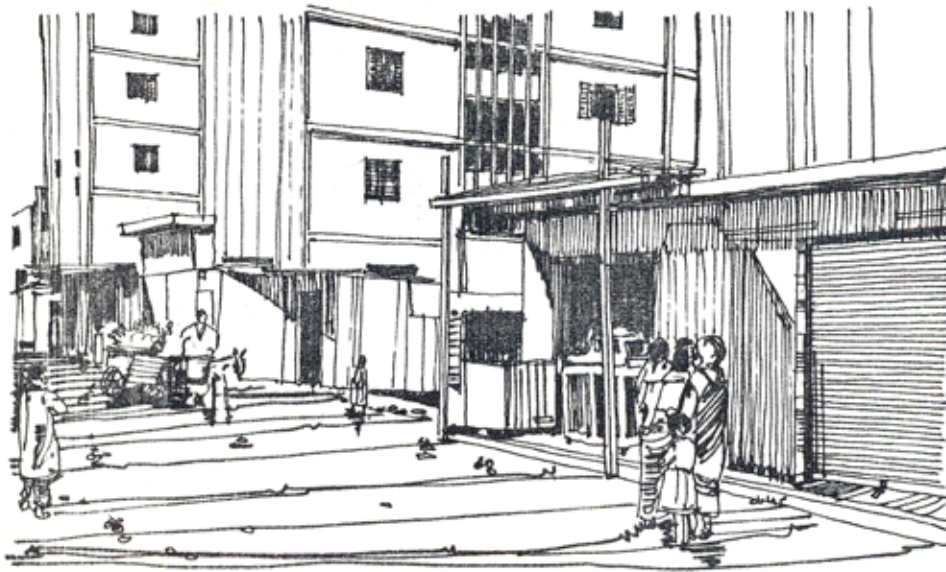


Fig. 3.6 Governmental housing projects in shobra. Each house consists of four storeys (prototype)



Fig. 3.7 Informal housing subdivision in Helwan turning to be a slum (Ref. 62).

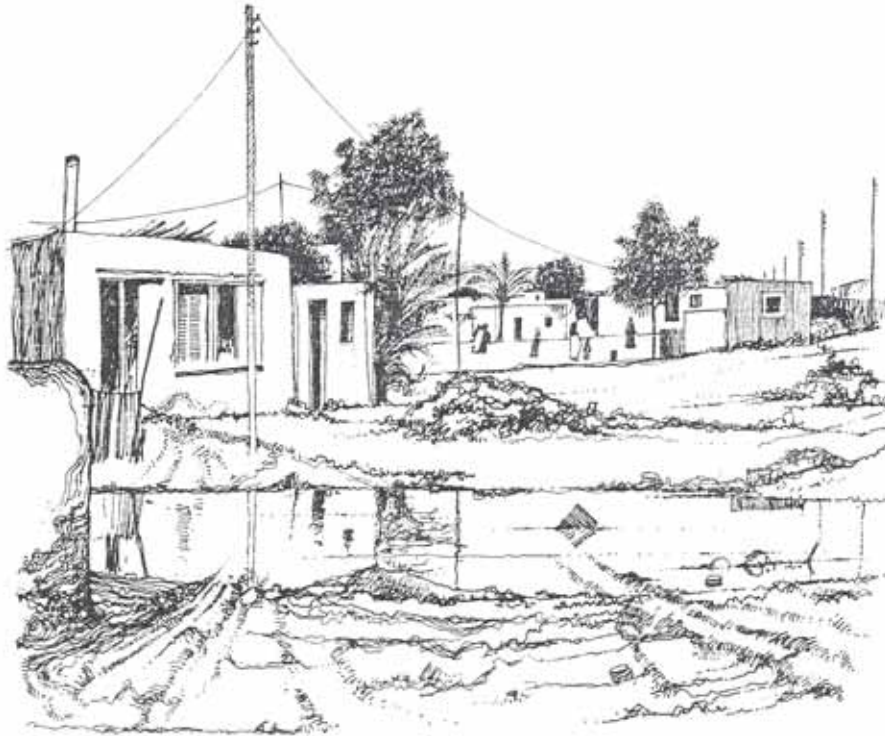


Fig. 3.8 Informal rural housing in poor condition, in Ismailia (Ref.7)



Fig. 3.9 Informal extensions and alterations in ain el sira which was done by the people.

3.2.5. The Housing Policy in Egypt

The Egyptian government has set up a national five-year plan starting from 1981 to 2000 which would have the following major objectives (1):

- a. Increasing the number of units produced by reducing size and improving design efficiency.
- b. Increasing recovery from dwelling units produced by requiring families to pay a larger amount when their income permits, thereby reducing subsidies and allowing construction of more new housing.
- c. Encouraging the production of more housing for low and very low income families and reducing and phasing out government subsidies for upper income families.
- d. Establishing "emergency" programme to meet the needs of the lowest income families, including the conservation of existing housing and improving level of infrastructure and services in existing communities.
- e. Developing an appropriate land use policy.
- f. Developing an appropriate housing finance policy.
- g. Developing a building material policy.

The above objectives of the National Housing Policy may lead to the following consequences:

- a. It is believed that increasing the number of units produced by reducing size which might be reflected in vertical expansion and the social and physical conditions, is going to create inhuman condition for the housing units which could change into slums afterwards.
- b. The housing problem is not the problem of number of units needed but also the problem of how to provide good

1 Institute for Housing Studies BIE, Excursion to Egypt, 1985, p. 37.

Environment respecting the social and cultural characteristics of the community.

- c. The National Housing Policy considered housing as a social service which must be given to the people specially the low income groups. This policy could be oriented to look at the housing problem as a productive mean as well as social service.
- d. It is obvious that the Government does not possess the financial abilities to supply the required amount of housing units, and to satisfy the people needs in term of quality and durability, and to guarantee the maintenance of these housing units(1).
- e. The National Housing Policy lacks the organized approach to encourage the private sector or the community in solving part of the housing problem specially for the low income groups.

In a situation like this, the National Housing Policy has to depend mostly on the contribution of community participation in solving the housing problem in Egypt. This is a new approach which was not given the adequate importance in previous housing programmes.

3.2.6. The Need for Community Participation in Egypt

It is clear that the housing situation in Egypt needs a non-conventional approach which could involve community participation. The Government with financial constraints cannot provide this great number of housing units, specially for the low income groups. The present housing authorities has to be organized to deal with the different forms of public participation. This may be achieved through the cooperative housing authority or by re-organizing the authority of common projects which is involved at the present

1 See 3.6

Time in similar projects with the USAID (1). This issue should be encouraged also by the political parties which are more concerned with public activities.

It has been known that the housing process is divided into different steps starting with decision making then planning, design and implementing. The process continues by maintenance. Community participation could be activated in one or more of these steps. The more participation in these steps, the more reduction in the total cost of housing is realized. This depends on the form of participation which is affected by the social and cultural characteristics of the community.

Housing Process



Community participation will help building up strong social relationship inside the community. If the community members are well organized they will be able to undertake more projects by themselves. Moreover, the social and cultural structure of the community should not be affected by the interference of the government that wants to do the best for the community, from its point of view.

The need for community participation requires a change in the procedures of decision making, planning, implementation and maintenance. By involving the community in decision making, the project will satisfy the needs of the

1 USAID: United States Agency for International Development.

People and the housing product will be accepted by them. Therefore the community will be willing to participate in its implementation; moreover, they will participate in the maintenance of their houses. The project in this form will respect the social structure and the cultural values of the community.

By involving the community in planning, the project design will satisfy the actual needs of the people who will be able to build a healthy environment. Also, the community could give new ideas which might result in reducing the total cost of the project. They may suggest the use of stones for paving instead of asphalt, if they wish to reduce the cost of development. They might suggest the use of natural materials with good finish instead of using plaster. Here they express their wishes and share the responsibilities.

The community could participate in providing labour in or assisting the management and supervision of the housing project. This will help in reducing the cost of the project.

Moreover, the community will gain some experience and feel responsible for what they implemented. In this case they will be willing to maintain the project and keep it in good condition for a longer time.

The community in this case will take over the responsibility of maintenance instead of the government which may be unable to maintain what the people have built by themselves. The responsibility of the Government might be confined to projects like maintaining roads, sewage network and other public services. Once the community takes part in the implementation of their housing projects they will gain the experience which will enable them to participate in more projects in future or to expand their projects.

The government may spend more time in organizing the procedure of community participation but in the long run there will be great cost reduction.

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The main role of the government is to ensure access to essential resources, such as land, credit, building materials and know-how. Moreover, the government should set limits to what may be done, leaving the community free to operate within those limits*.

-
- United Nation Center for Human Settlement (Habitat), Promoting Organized Self-Help through Cooperative Mode of participation. 1984, p. 2.

3.3. Factors Affecting community participation in Governmental projects

Community participation in governmental projects is affected by five main factors, the political, economic and social factor as well as building regulations and building technology. Each of these factors will be dealt with separately in the following paragraphs. Community participation may be a political issue besides being technical and managerial process. In Egypt the political factor is the dominant one in this respect. Community participation is a democratic phenomenon.

3.3.1. The Political situation

Since the Egyptian Revolution, there was no organized community participation in housing projects due to some political problems. In the mean time there were informal efforts by individual members of the community to build their own houses. Most of them were illegal and informal, as they built their houses without building licenses on land owned by the government.

In the recent years the Egyptian government began to realize the importance of community participation in productive projects. A special authority was established for this reason, Public Development Authority. Another authority was established to implement joint projects with USAID applying a form of community participation in housing projects, upgrading programmes and site-and service projects as in Helwan south of Cairo, Zabbalin project east of Cairo. Other upgrading projects have been implemented in Ismailia (1).

Also, new community housing projects are now under construction in Helwan including a form of community participation. These projects could be considered in their experimental phase. The evaluation of these projects may encourage the government to apply other forms of community

1 See 3.4

Participation specially in decision making. This requires a change in the administrative system to simplify the necessary steps required to achieve any work in this nature. All the help has to be given to local agencies who are able to apply community participation in their projects.

The government may be reluctant to apply community participation in its projects for some reasons. This might be due to the long time this kind of projects will take. The government might believe that it knows what is best for the community. The political trend may discourage the communities to participate in the decision making of any public project.

There might be some kind of pressure from big constructing companies or trade unions on not encouraging the building of projects in this way, specially when more than 40% of the building industry in Egypt is imported from foreign countries(1) .

3.3.2. The Economic Factor

One of the important economic factors affecting community participation in housing projects is that most of the low income groups are working in the fields of production and services. The individual is part of the whole and his efforts are part of complexed economic system. His effort in developing his own economy becomes less and consequently his role in building his own house becomes less. This new economic system affects the daily life of the people and organizes their working time, place and environment. The individual is more bound to the monetary system more than self production. Therefore, there is a limited time for the people to organize themselves or to participate in building their own housing project. If there is any free time available to them, they will search for extra work to increase their income and to improve their living condition.

1 The Joint Research Team on the housing construction industry. Cairo University/Massachusetts Institute of Technology. The Housing and construction Industry in Egypt. Interim Report Working Papers 1978, Spring, 1979,

The re-organization of the economic foundation for low income groups becomes an important factor in applying any form of community participation in housing projects. This could be achieved in new communities.

3.3.3. The Social Factor

The urban centers in Egypt are facing a high rate of immigration from rural areas, specially in big cities and their suburbs. These rural emigrants are carrying their social and cultural values with them to the urban centers. Their strong relationship becomes less, unless they live in the same urban area. The rural communities were absorbed in the urban pattern of life with less social cohesion and more individuality. The squatters become semi urban and semirural. An atmosphere of distrust between the new communities and the local authorities was created, specially in informal squatters where the people built their houses without legal permission on lands which they do not own. It is, therefore, important to remove this mistrust in order to create an atmosphere of understanding between these new communities and the local authorities in order to enable them to participate in any local development programme.

Since industrialization has reduced the size of handcraft industry it became harder to apply any form of community participation in building low cost housing projects unless certain modifications can be added to the new building industry to satisfy the technical needs of community participation in housing.

3.3.4. Technical Factor

The important building technology from east and west was not appropriately absorbed in the building industry in Egypt. The new building technology requires mass production and very skilled labour which are not available in Egypt in most cases. The majority of local building industry still depends on conventional systems of construction. In general, the new

Building technology came out as part of the monetary system of the Egyptian economy. The building industry is applied through contractors who have their own way of construction which does not cope with the principles of community participation. The do-it-yourself system is not yet known in the building industry (1).

Public housing projects which were built by the government required large capitals or investments which are not available for low income communities. The low income groups depend mostly on local contractors to build their informal houses as the building materials are not easily accessible by the community. The cost of building materials is also above the purchase capabilities of the community (2).

3.3.5. Rules and Regulations

The prevailing building rules and regulations were imposed in the beginning of the sixties of this century. Most of these rules limited the expansion of housing projects as they created unbalanced relationship between owners and tenants. The physical building rules were not changed since they were derived from French rules and regulations. No consideration was given to local characteristics (3).

The existing rules and regulations imposed high building standards which were not in reach of the low income communities. Till now there are no rules or regulations which organize community participation in housing projects except those of cooperative housing. The form of community participation in housing by applying core-house system or shell house concept is still in its experimental stage (4).

1 Ibid.

2 See 3.5.1.

3 Al-Ahram Al-Ektissadi, Proposal for the amendment of the relationship between the tenant and the owner, and the new housing policy, Issue, 10 February, 1986.

4 See 4.3.

Site-and service approach in upgrading is still also in its investigation stage.

Although the low income communities are not familiar with the system and forms of public participation in housing, it seems from the recent experiments that a lot of experience will be gained in this respect (1). This experience has to be transferred into national policy or a social movement. This seems to be one of the main answers to low-cost housing.

On the other hand it is important to study the positive side of informal housing which proves that community participation is possible in large housing projects. The question now is how to organize this participation and encourage the community to take part in it. The problem again is a political one as it is a managerial issue beside its economic and social implications. Planning will be part of the process. Architecture and building technology could be adopted to meet the new requirements of any form of community participation.

1 See 3.4.

3.4. Community participation in Governmental projects

3.4.1. Participation in Decision Making

There was a small- role for the community in this level of decision making in Helwan upgrading project. This role was found in the response and contribution of the community members during the surveying period where they took part in the Socio-economic and physical surveys. The role of the resident in decision making was clear when he got an access to Home Improvement loans, and made his own decisions on the design, management and implementation in improving and/or extending his house. This was done with the assistance of the (PIU) (1), which is a part of the (JHP) (2), in home improvement design and monitoring the construction. The JHP has placed a great deal of emphasis on the community development aspect of upgrading, which was preceded and developed hand-in-hand with the introduction of the physical improvement(3) (Fig. 3.10).

In Ismailia upgrading project, the involvement of the community was an essential component of upgrading. There is not always a ready-made community organization to work with; the process of creating one requires skill and time. Real community involvement depends on real responsibility for decision making, especially regarding the question of how to use the available resources. It was recognized that work done with real community participation is likely to be accepted. A responsible attitude towards maintenance will be more likely (4).

It was found at the beginning of the upgrading project that community organizations were not well developed, in both El Hekr and Abu Atwa except only one group of refugees from Sinai who were well organized in El Hekr area.

1 PIU: Project Implementing Unit.

2 JHP: Joint Housing Project.

3 Joint Housing Projects Executive Agency. Ministry of Housing and Public Utilities. COll11Unity Upgrading and Urban Development Policy For Egypt.. 1984, p. 15.

4 Forbes Davidson, Upgrading In Ismailia: A Tale of Two Projects, 1984, p. 4.

The Development agency did work with them as a community (Fig. 3. 11).

The original proposal accepted by the local council was that the community would be involved in the process of the detailed re-planning of local area as well as in the maintenance of semi-private areas such as small squares and small streets used by the surrounding inhabitants. This was proposed in order to achieve the positive advantages of community involvement and spreading the responsibility of decision making¹.

In Abu Atwa (2) more efforts were made to discuss the proposals with the local community, via their traditional leaders. This helped to achieve a high level of local support for the project and resulted in significant achievement in difficult situation. Upgrading could be achieved without formal structure of participation, particularly if there is flexibility in the proposal, in the management. of construction and easy access of the residents to those responsible for decision making. In fact, in Ismailia upgrading project, the individuals had access to the management and staff, discussing their problems and ideas which helped to prevent any major difficulties.

3.4.2. Participation in Planning and Programming

In Helwan, all areas of the upgrading projects have local community development association registered with the Ministry of Social Affairs to represent the residents in the planning process. The PIU worked closely with these local associations for the preparation of the overall land use plans and community social programmes.

JHP and PIU were responsible for planning and implementing the community upgrading project. They made use of the

1 Ibid, p.6.

2 Ibid, p.12.

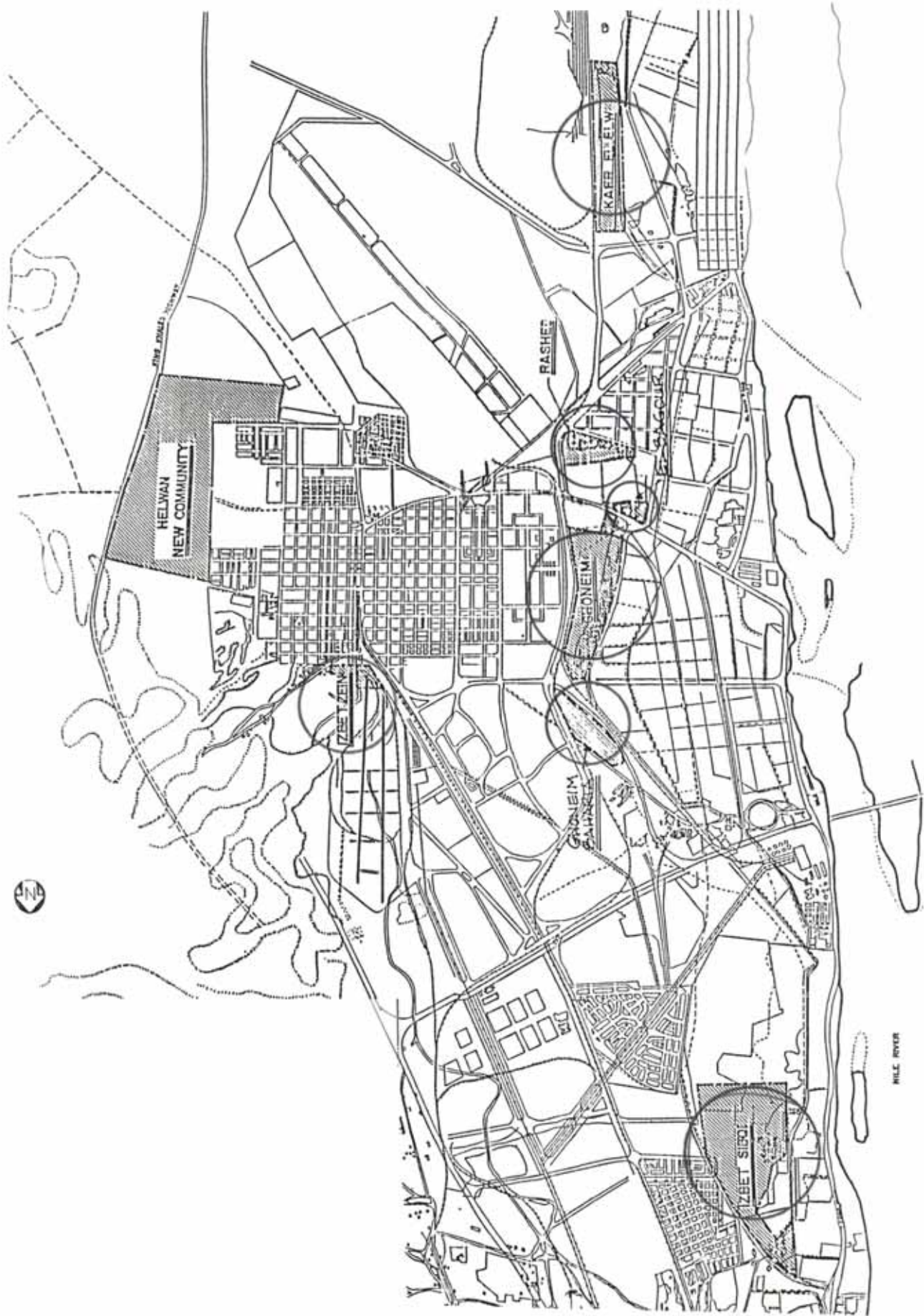


Fig. 3.10 Helwan upgrading projects location (Ref. 18).

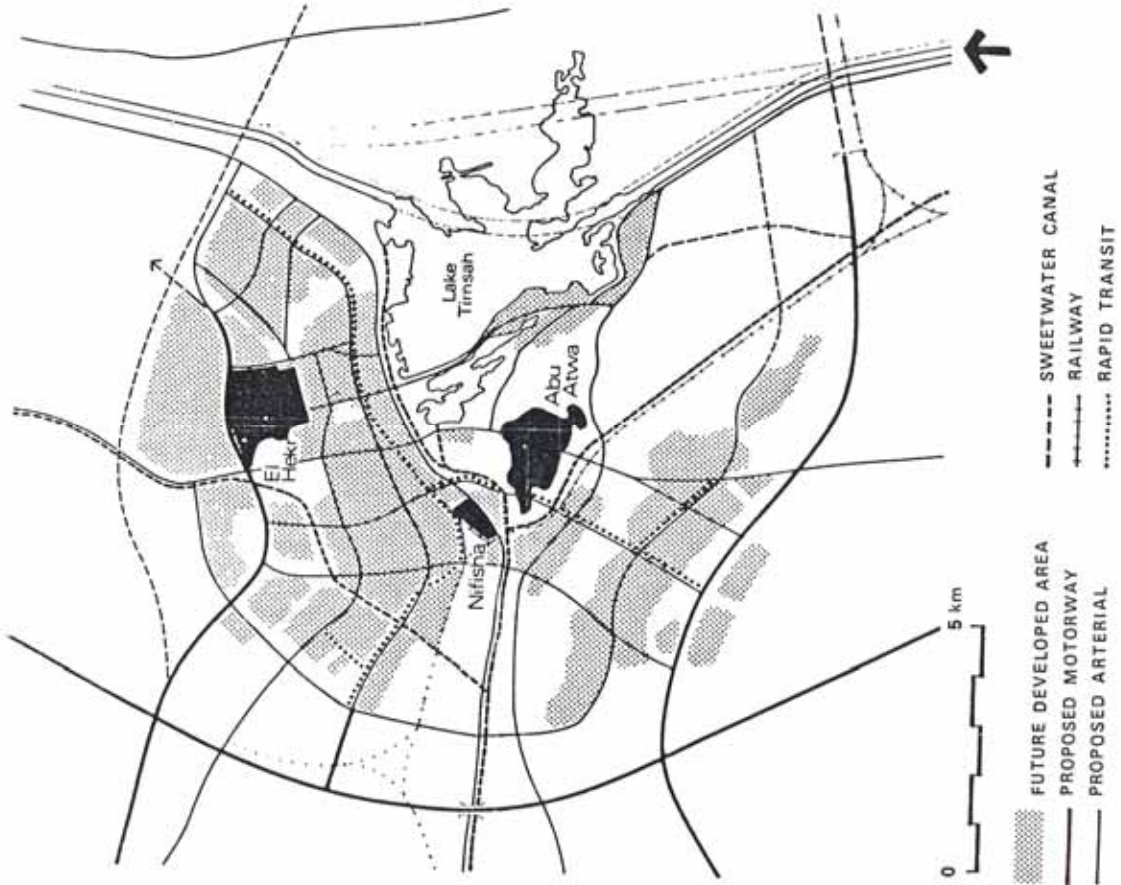
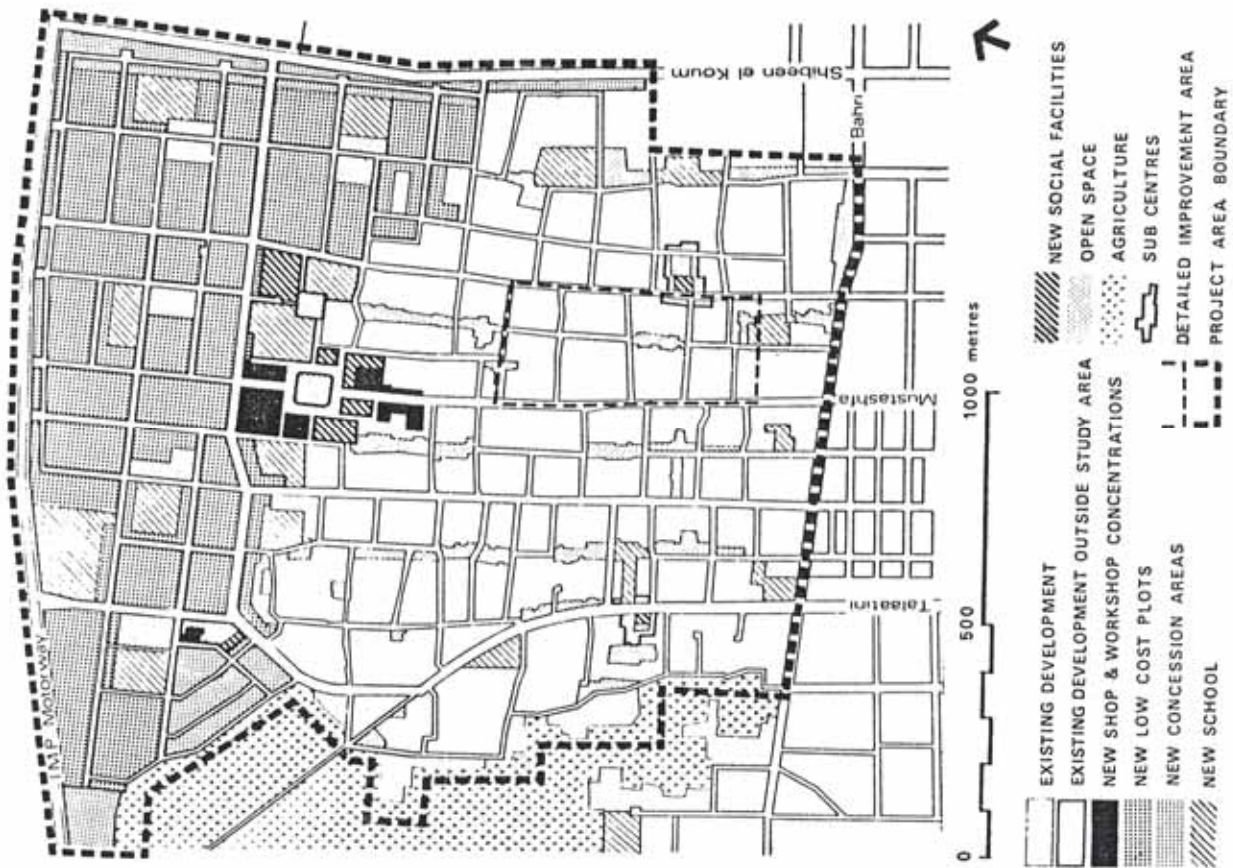


Fig. 3.11 Ismailia upgrading project location (Ref. 7).

El Hekr: community plan

Information gathered from the community and organized meetings with some of its members and representatives in order to know their response towards the plans and implementation programmes. Both the JHP and PIU made use of the advice given to them by the members of the community (1).

The initial planning in itself is merely a framework for action, and one which must give room for both residents and management to make their own contribution: In Ismailia the upgrading process was able to be carried out without much disagreement. In certain cases, however, plans were modified according to the wishes of the community, so there was a great flexibility in planning. Also, the system of letting out small scale contracts to local contractors meant that changes of plans could be made with little difficulty (2).

3.4.3. Participation in Management and organization

One of the major aspects of the programme of Helwan upgrading project was community organization which was meant to enable the residents to initiate their own projects and to take part in the planning and development of project components as well as the maintenance of community services and facilities which were implemented in the project (3). The technique of community organization was extensively used to encourage community associations to initiate and manage their own common facilities, solid waste collection and cesspit emptying. This is beside other community programmes including child care, nursery, and sewing classes. The participation of community associations in the comprehensive planning process in urban areas ensures the construction of school, sewer and water, roads, electricity and other community facilities in a way to meet the needs of the residents in each community. In

1 Joint Housing Projects Executive Agency. Ministry of Housing and Public Utilities, Helwan Housing and Community Upgrading for Low Income Egyptians, 1984, p. 7.

2 Forbes Davidson, Upgrading In Ismailia: A Tale of Two Projects, 1984, p. 11.

3 Joint Housing Projects Executive Agency. Ministry of Housing and Public Utilities, Helwan Housing and Community Upgrading For Low Income Egyptians, 1984, p. 4.

Ismailia the implementation process of the upgrading project was locally managed and flexible (1). Designs were made more detailed than needed, within the framework of the plan, and contracts were let in small units mainly to small local contractors as funds were available. This meant that changes could be made easily and they could respond to the resident's wishes. The locally based teams operating within their own budgets worked well compared to the normal local government department. The lack of project efficiency due to public easy contact was more compensated by the value of that contact.

3.4.4. Participation in Implementation

The role of community participation in the implementation of the Helwan upgrading programme was very clear, starting with the improvement of their own houses until the construction of infrastructure and public facilities. The community facilities were constructed by the community associations, with a grant from the PIU. The architects were consulted by the community associations who selected the sites and signed construction contract.

In Ismailia upgrading project the building of houses has been by a combination of self-help, the use of skill workers for tasks such as concrete pouring, bricklaying and carpentry and the use of small local contractors (Fig. 3.12). The proportion of each depends on the income of the owner. If owners can possibly afford it, they try to build in red brick with a reinforced concrete frame, as vertical expansion is seen as future accommodation for the family or as a source of income (2)

El Salam district upgrading was easier than in Abu Atwa, and involved less community as opposed to individual Participation.

1 Forbes Davidson, Upgrading in Ismailia: A Tale of Two Projects, 1984, p. 16.

2 Forbes Davidson, Ismailia: Combined Upgrading and Site and Services Projects in Egypt. Low-income Housing in the Developing World, 1984, p. 142.

Families removed parts of their houses by themselves, being affected by the widening of main streets.

3.4.5. Participation in Maintenance

The community associations which were established in Helwan areas, organized programmes to enable beneficiaries to maintain their community services and facilities beside maintaining their own houses. The community associations carried out these responsibilities with the help of both JHP/PIU, who are the two main bodies monitoring the overall project on behalf of the Egyptian Government. The JHP is affiliated with the ministry of reconstruction and the PIU is part of JHP in the site.

It is worth mentioning that the Joint Housing project JHP authority was established to deal with housing projects financed by both the Egyptian Government and a loan from USAID. These projects were chosen in squatters and new Housing in Helwan district which comprises large working communities. The work of JHP will end with the end of the projects at hand unless loan is provided for other projects.

The question which is usually raised, can the Egyptian Government launch other similar projects without foreign assistance? This is the great challenge the Egyptian Government has to face.

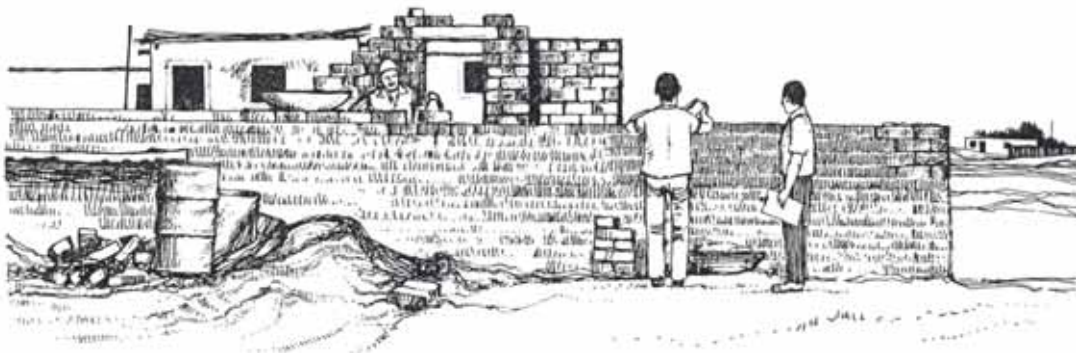
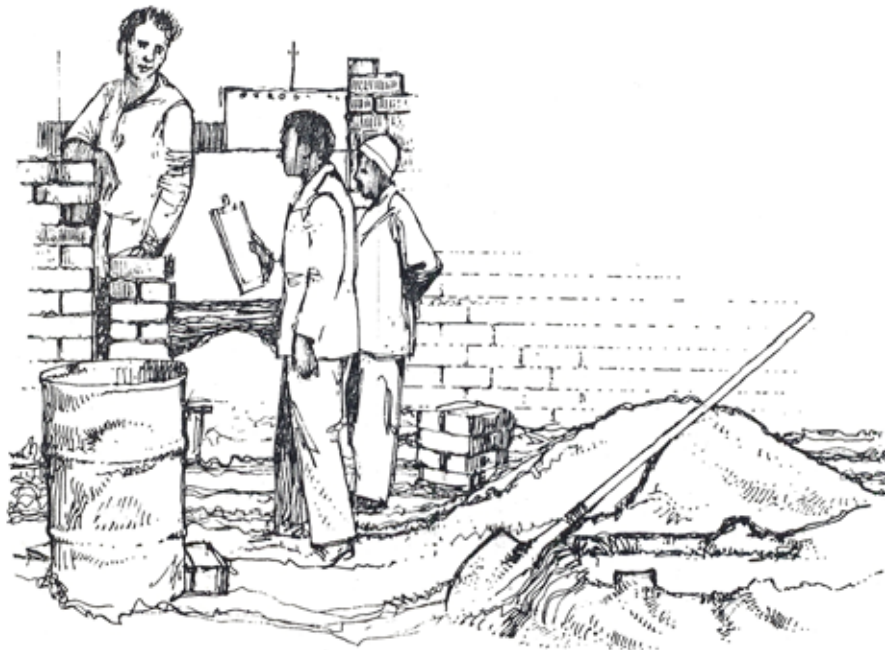


Fig. 3.12 Project participant improves and extends his own house, through mode of self-help, with technical assistance (Ref.7).

3.5. Community participation in Informal Housing

3.5.1. Community Participation in Informal Urban Housing

It was found that the bulk of housing units currently supplied in Egypt is informal. It was estimated that 84% of the housing units built in Cairo between 1970 and 1981 were informal. It was also estimated that 81% of the housing units built between 1960 and 1976 in urban areas were informal, while 89% of them in rural areas were informal(1) (Fig. 3.13).

In many aspects, informal housing is similar to formal housing in terms of condition. It was estimated that 56% of the informal housing units built in Cairo were classified as in good condition against 40% of formal housing units built in the same time and place. This means that the informal housing units constitute the majority of housing units built in good condition in recent years. This indicates that the people are able to build their informal houses even better than those built in the formal way, although they are not provided with the adequate utilities and services. In both cases utilities and services are the responsibility of local authorities (Fig. 3.14).

In the building process it was found that 76% of formal housing units were built by contractors. In about 17% of the cases the work was done by gangs of workers supervised by the owner. In the case of informal housing 45% of the owners used gangs of workers, while 40% of them used contractors to build their houses(2).

Hardly a single contractor or owner consulted an architect to design an informally constructed house. In 47% of Cairo informal household cases the contractor did the design, and in 31% of the cases the head of the household did the design.

1 General Organization for Housing, Building and Planning Research, Informal Housing in Egypt, 1981, p. 32.

2 Ibid, p. 101.

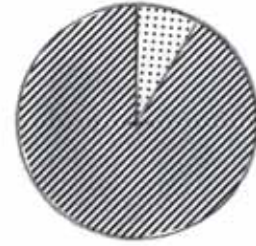
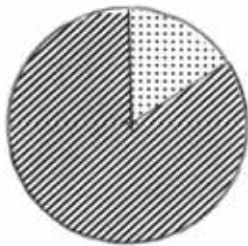
The above facts would be summarized in the following points:

- a. The percentages of informal housing units built in relation to the total number built could be shown as follows:

In Cairo 84%

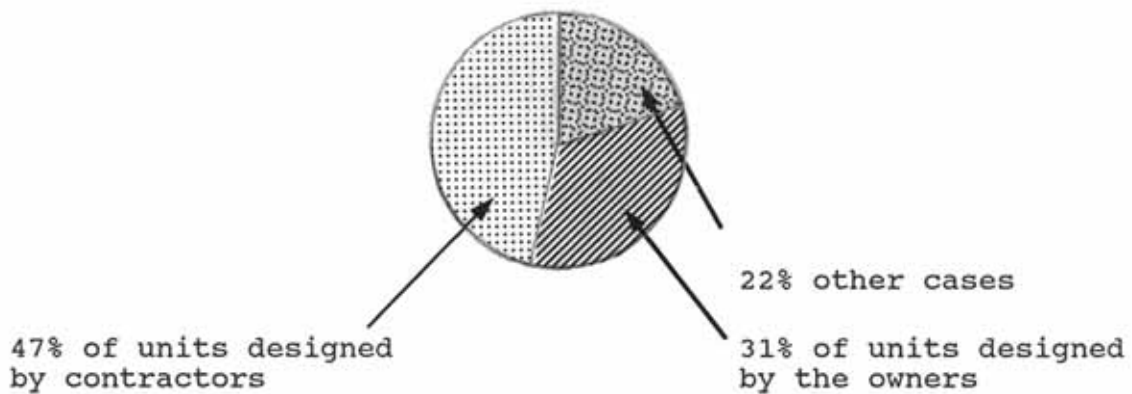
In Urban areas 81%

In rural areas 89%



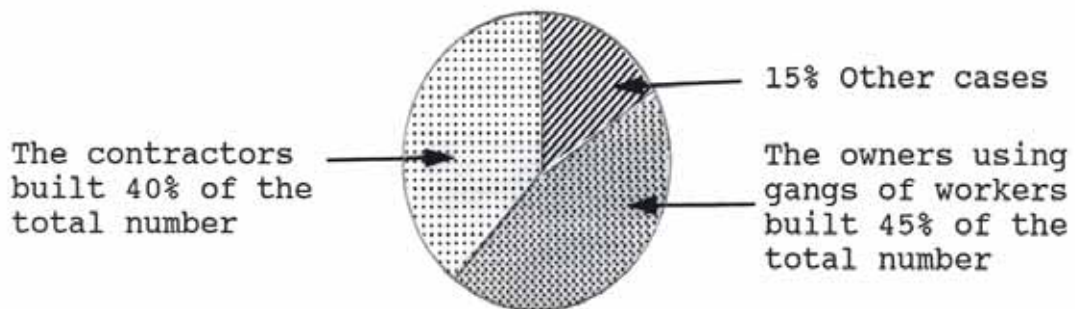
This is a clear indication that the organization of community participation in housing is feasible in all areas.

- b. The participation in decision making in designing informal housing could be divided between the contractors and the owners as follows:



This means that with some more guidance the household can be able to participate in the design of their houses.

- c. The construction of informal housing units could be divided between contractors and gangs of workers as follows:

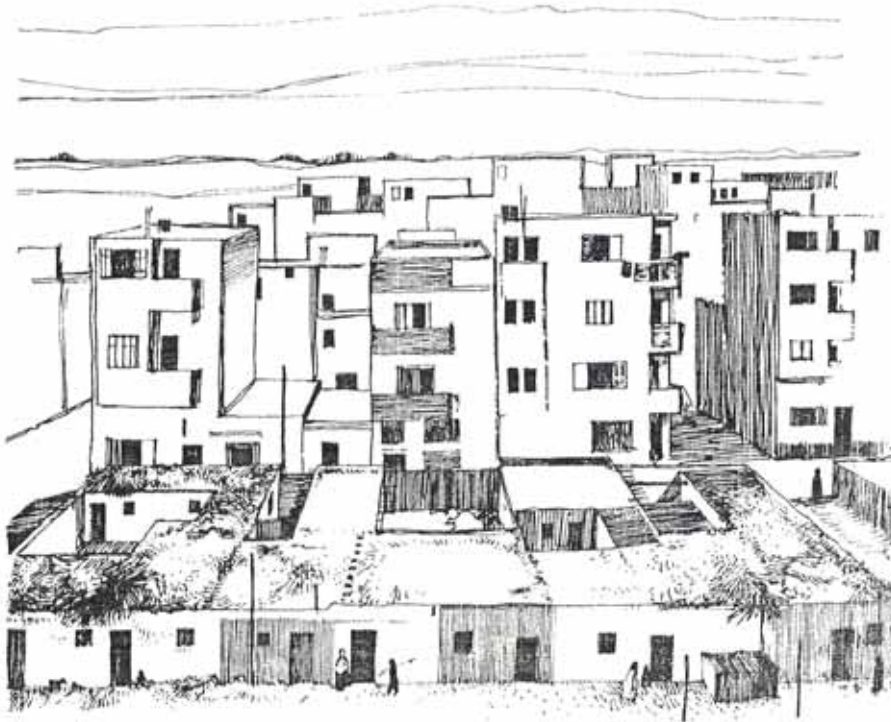


This also means that community participation in the construction process could be easily achieved.

The informal districts have more rural migrants than those in the formal districts. It was found that among formal housing owners in Cairo 89% were born in urban areas, while among informal housing owners in Cairo 53% were born in urban areas (1). Most of the owners of informal housing had the characteristics and habits of rural communities in term of social, cultural and economic life. They have a lower level of education and less knowledge of subdivision systems, as well as registrations and building regulations. This means that there is a need for training in the field of community participation where people could be aware of planning and design implications.

It was also found that there is a willingness among the informal households to pay for the improvement of their houses similar to that among formal households. This means that the people have the initiation and willingness for financial contribution in any project concerning the improvement of their situation. They just need to be

1 General Organization for Statistics and Public Recruitment, Report 1979.

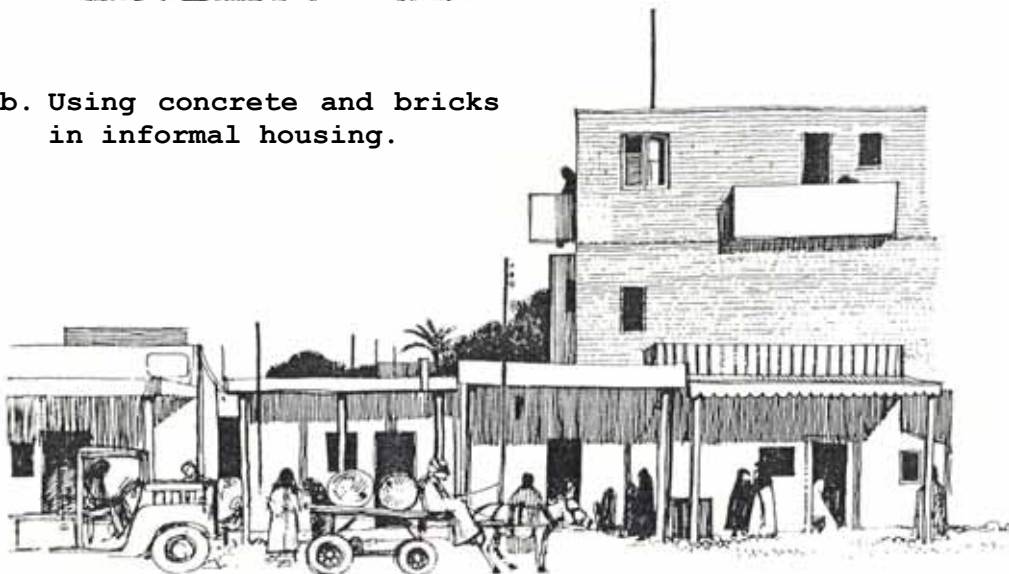


a. Informal rural housing style in urban areas in Ismailia.

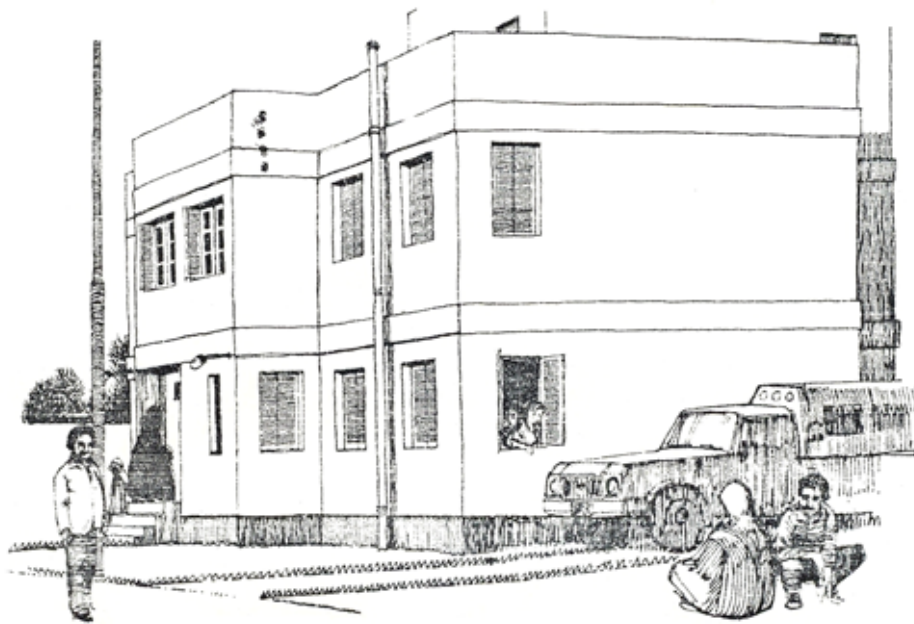


Fig. 3.13: It was estimated that 81% of the housing units built between 1960 and 1976, in urban areas, were informal (Ref.7)

b. Using concrete and bricks in informal housing.

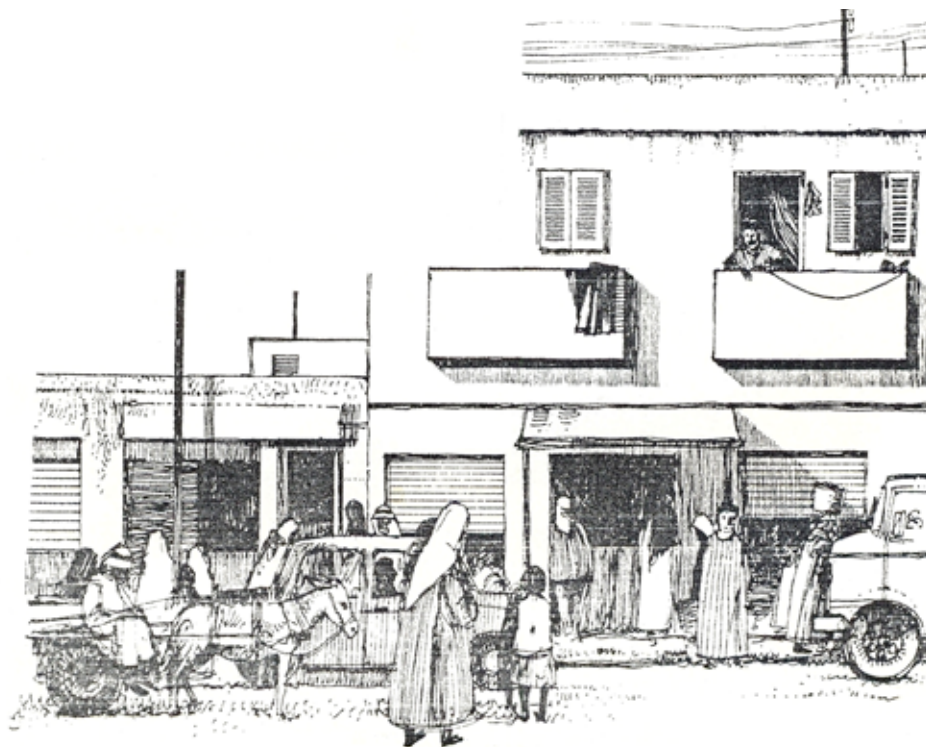


c. Informal shop and workshop



Formal housing.

Fig. 3.14 informal housing is similar to formal housing in terms of condition and building technology. (Ref.7)



Informal housing.

Organized and shown the way to participate in building their houses (1).

3.5.2. Community Participation in Informal Rural Housing

Hassan Fathy (2) wrote in this concern that "when a man wanted to build a house, he would launch into some of the most complex and prolonged decision making of his life. From the first family discussion of the idea, to the day when the last workmen left the completed house, the owner would be working with the builders, may be not with his hands, but by suggesting, insisting, refusing and maintaining a running consultation with them and making himself responsible for the final shape of the house (Fig. 3.15). Men, who worked in housing construction, would all be craftsmen, knowing what they could do in term of their own limitations. Probably they would be from the same neighborhood of the owner, and would know him well, so that he would have no difficulty in explaining what he wanted, while the building contractor would understand very well how much the owner could afford to spend and what he could get for his money. As the work progressed, the owner would choose the various fittings: with the carpenter, he would talk about mashrabeyas, doors and cupboards, with the stone carver, about side boards and ornaments around the door, if he was poor, with the marble cutter about mosaic side boards, fountains and floors. He would be real conscious of these objects and it would be impossible to fool him. He would know what he wanted, and be sure that he got it. Each craftsman would show him in practice what was possible, and the owner would choose between alternatives in three-dimensional design that could

1 Joint Housing Project Executive Agency, Ministry of Housing and Public Utilities, Community Upgrading. An Urban Development Policy for Egypt, 1984, p. 15.

2 Hassan Fathy, Architecture for the Poor, 1973, p. 27.

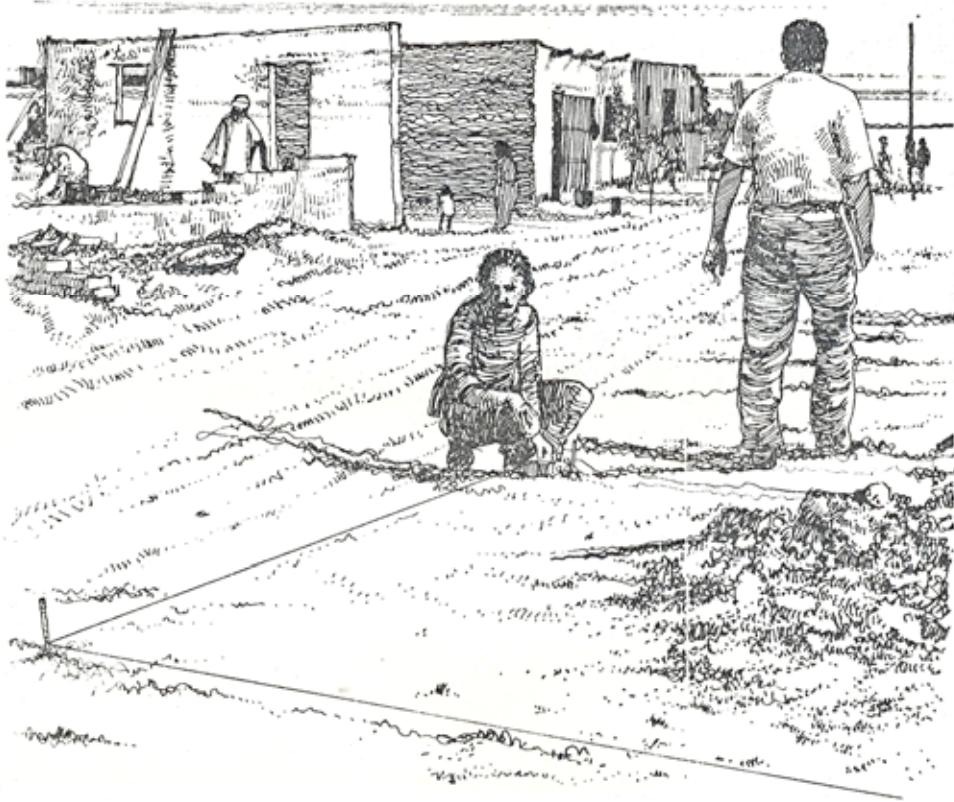


Fig. 3.15 The owner of the house would be working with the builder (Ref. 7).

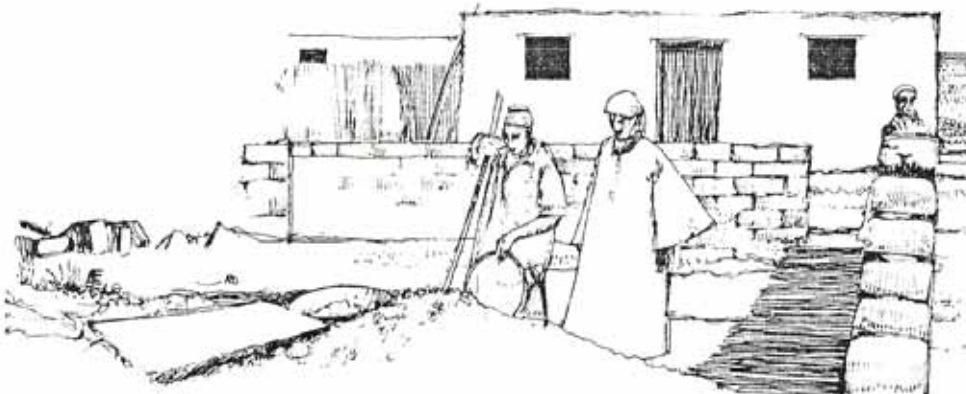


Fig. 3.16 The owner acts as a contractor for his own building (Ref. 7).

Never be represented on an architect's plan. In this case, the owner will act as a contractor for his own building. (Fig. 3.16).

In this building approach, the role of the architect is missing. The owner dealt directly with the men who did the work, and he could see what he was getting. On their part, craftsmen were free to vary their designs according to the owner's approval. If an architect had come between owner and craftsman, he would have produced plans that neither could be understood, nor be able to escape the drawing board and he would have remained quite ignorant that the variations of details make the difference between a good design and a bad one.

The experience of Nubia in community participation Differs from other rural areas in Egypt in terms of the cooperative system in housing construction and social relationships. As Hassan Fathy explains this, he says (1): "When a new house is to be built in a village, everyone is expected to help. Many people help in the work, and the house is soon finished. None of these helpful neighbours is paid. The only return expected by a man who puts in a day building a fellow villager's house is that the fellow villager will do the same for him one day. Building thus becomes a communal activity, like harvesting, dealing with a fire or a wedding." The villagers in Nubia seem to work together to help each other as naturally and with as little direction or supervision. The cooperative system, however, can only work in this traditional way when it is dealing with traditional problems and when the society is truly traditional itself. A dozen of new houses a year does not put a great strain upon the labour resources of a village. There is still time for the farmers to work in the field and to care for other affairs of life. The experience gained from the Nubian

1 Ibid, p. 120.

Example could be transferred to other new communities (1). This example gives a new meaning to cooperative housing system specially in rural areas. In this concern Hassan Fathy maintains (2), "if a system of cooperative building can be made to work, it will have enormous advantage over any system employing professional builders. First and foremost, a village built by its own inhabitants will be a living organism, capable of growth and of continuing life, whereas a village built by hired professionals will be a dead thing that starts to fall to pieces the day after the builders leave. Second, a cooperatively built village will be much cheaper than one built by hired labour." In fact, it will be cheap enough for a country like Egypt to afford building villages of this kind in large numbers. This statement could be applied to both, existing and new rural settlements. If the traditional cooperative system can be made to work under non-traditional conditions, then it can be clearly expanded and applied to a mass housing programme.

Cooperation, in its social sense, could be achieved as Hassan Fathy puts it in the following statement (3): "the basic motive in voluntary donation of time and labour in the cooperative system is the desire to receive similar help oneself." "Do as you would be done by." In fact, every neighbor by helping to build a house establishes a right to receive help himself, opens an account in a kind of labour bank. If this principle is recognized and if the exact amount of work to a man's credit can be calculated and recorded, the cooperative system will begin to appear to the most commercially minded peasant." This is the way where community participation could be based on a real cooperative system. What remains is the transformation of these ideas to the decision makers and the official organizations responsible

1 See 4.2

2 Ibid, p. 120.

3 Ibid, p. 19.

For cooperative activities in the country. The meaning of cooperative science is still practiced within its commercial concept. Co-operative activities in Egypt are bound to urban housing and very little has been seen in rural areas although agricultural cooperative are active there. This is why housing and productive cooperatives should work together in one system.

As most of Egyptian rural houses are built through self-help method of construction, in some areas houses are built through mutual aid method of construction. This could be found, for example, in the cost rural area at AI-Arish city, in the north of Sinai. The community in AI-Arish consists of deep rooted families, with strong relationship among its members. They participate together in all aspects of life specially in cultivation, craftwork and housing construction (1).

This community has been well organized for many generations. They have a settled hierarchical social structure which consists of the chief of a group of families, the head of each family and then the family members. For building a traditional house, community members use bricks made from 20% sand and 80% clay. The two materials are available in surrounded areas. All community members are involved in all the construction procedure; their role could be identified as follows:

- a. In Decision making: Those deep rooted families have a system of decision making where the chief of the expanded families selects the site location and takes the critical decisions and gives them to the heads of families to implement them. Also the chief of the families divides the work of the building process among all members of the families.

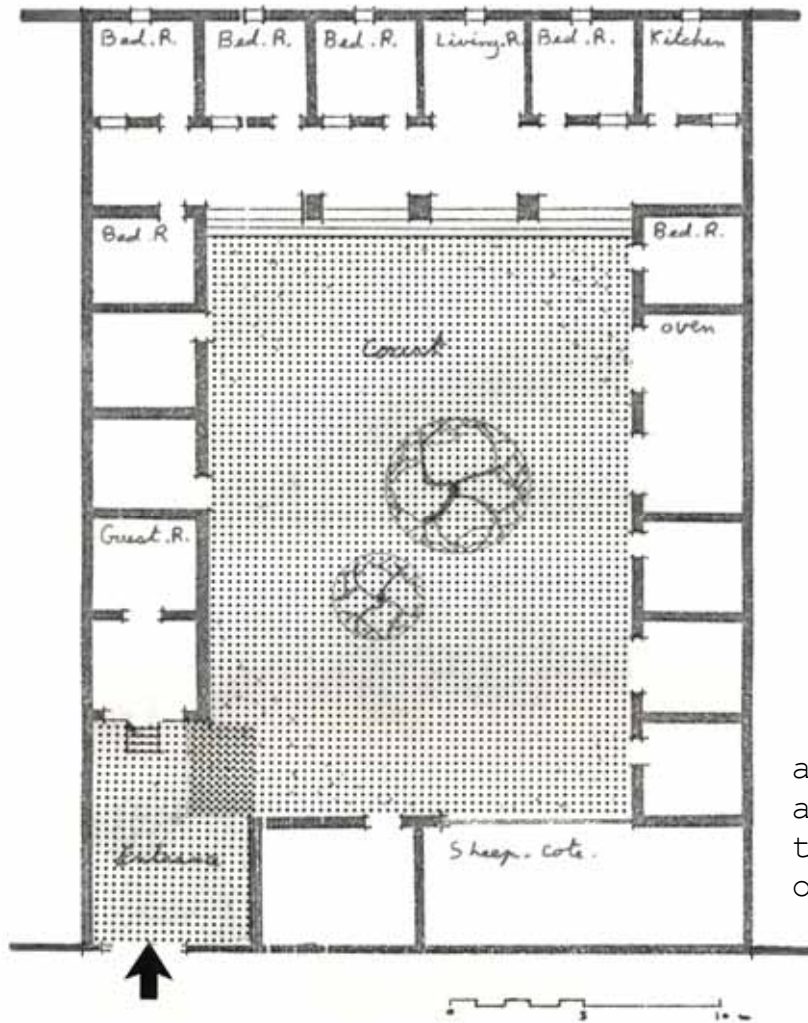
1 Dr. Hamed Ibrahim Al-Mously, Technology and Urban Growth. Study Case Al-Arish. Seminar on Environmental Problems of Human Settlements in Arab and African Countries, 12-16 November, 1982, p_ 13_ (In Arabic)

- b. In Planning: The head of the family, with other members, do the planning of the house on the site. They draw lines on the ground as a guide for the foundation. In all steps they make use of their experience which they gained along many years, with their cultural and local environment.
- c. In Management: The head of the family is the one responsible of the management of the building process, and he gets some help from other members.
- d. In Implementation: All the family members join together in the implementation of their new house, or its extension. In some cases they get some help from their relatives. Families sometimes hire one builder to help them in constructing the foundation and walls. Women prepare the mortar, young boys and girls deliver the mortar and bricks to the builders. Members of the family make the doors and windows from wood by themselves, also they set-up the electric connections and all the finishing necessary for the house.
- e. In Maintenance: Because the members of the family built almost all parts of their houses, they continue to maintain them. Every year they maintain the walls by covering them with a new layer of clay. Also they maintain the ceiling by changing some palm leaf stalk and adding another layer of clay. They take care of maintaining electric and plumbing fittings.

This autonomous self-help method of construction is very economic. It costs much less when compared with the conventional contracting system using concrete or manufactured bricks. For example a house in Al-Arish consisting of 12 rooms and 30 m², costs about 530 Egyptian pounds - 300 \$ U.S. (1970) (1). This autonomous self-help method of construction is self-sufficient. Families built their houses without any professional assistance at a very

1 Ibid, p. 19.

Low cost. They do not depend on outside finance because they feel that they enjoy building their houses with a high degree of satisfaction. These houses are built to satisfy the actual needs of the family. This helps in strengthening the social relationship among the members of the families (Fig. 3.17).



a. The rooms are surrounding the main court of the house.

Fig. 3.17 A house built in Al-Arish by family members (Ref. 40).



b. Lanes between houses.

3.6 Individual participation in improving housing

3.6.1. Community participation could be seen through the role of the individual in improving his own environment. This could be organized as a common movement. In El-Khalafawy district community participation in environmental development was expressed through the community members who made some improvements in their houses. The reasons for these improvements are different. The improvements could be done for security reasons or a desire for alteration. The size of improvement is affected by the financial abilities, and family needs. In El-Khalafawy district, these improvements differ according to families living in one, or two and three room apartment. These improvements are defined in "Table 3" (1):

1 Dr Abdelkarim Al-Ahwal, The Phenomenon of Individual participation in Environment improvement and Changing popular Housing Types. El Kalafawy District Shobra, 1983, p 48.

Table 3 Individual improvements in El-Khalafawy district housing

Families living in two or three room apartments	Families living in one room apartments
a. General Changes:	
a.1. <u>For Security:</u>	
- Changing the material of the main door from soft wood to hard wood	
- Putting iron grill on the windows in the first and fifth floor.	
a.2. <u>Modification for other or better function:</u>	
- Adding the balcony and use it as living area or for children studies (Fig. 3.19).	- Adding the outside corridor to the apartment in the ground floor, by building private stairs and doors.
- Installing water tanks in the upper floor.	- Adding the outside corridor to the apartment in the rest of the floors for the apartments at the two ends of the corridor.
- Disconnect the sewage pipe of the ground floor from the main sewage pipe of the house and connect it with inspection chamber to avoid overflowing (Fig. 3.20).	- Building a Partition in living room to use it as children bedroom (Fig. 3.18).
a.3. <u>According to Financial Ability:</u>	
- Changing the quality of windows from soft wood to hard wood for safety.	
- Changing the water plastic pipes to lead pipes for durability.	
- changing the oriental toilets to modern toilets.	
b. other Changes:	
B.1. Changing the quality of plaster on walls.	
B.2. Removing part of wall partitions in the apartment for flexibility in use.	
B.3. Changing the floor tiles to better finished quality.	
B.4. Covering the walls with wall-paper for better appearance.	
B.5. Fixing ceramic tiles on the kitchen and bathroom walls.	
B.6 Changing or improving the electric system of the house.	

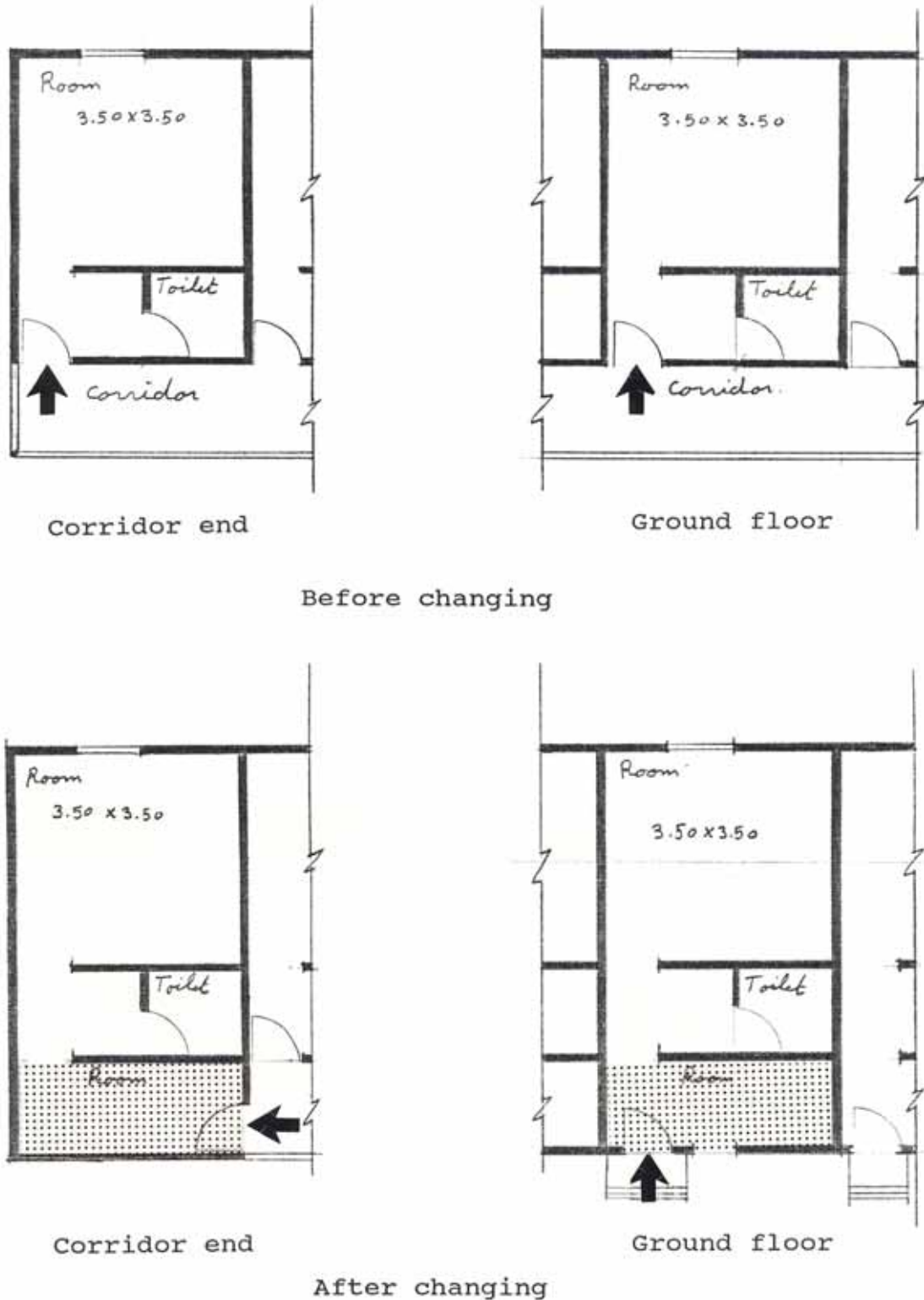


Fig. 3.18 Individual improvements in one-room apartment by adding the corridor area to the apartment, noting that the toilet is not ventilated. Scale 1:100 (Ref. 1).

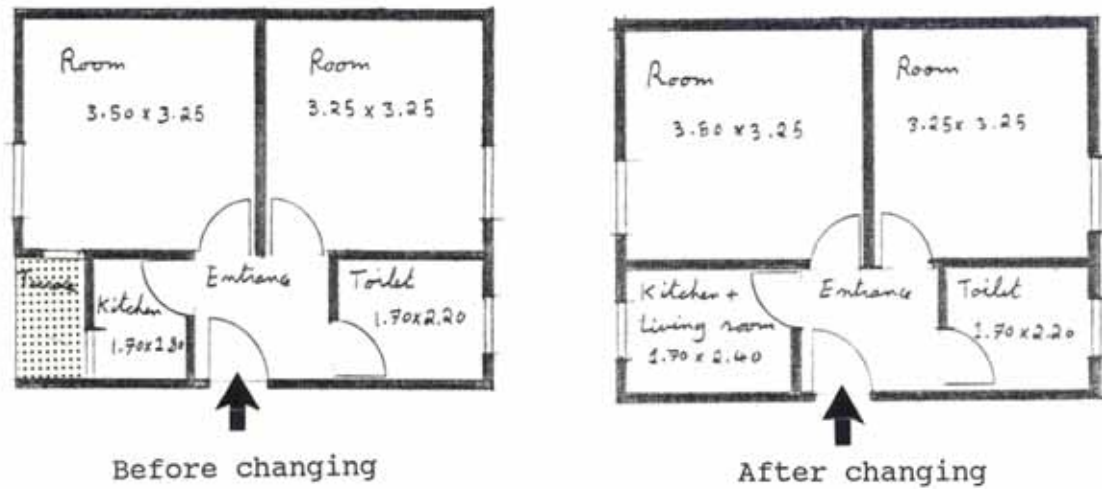


Fig. 3.19 Individual improvements in two-room apartment by adding the terrace to the kitchen as a living area. Scale 1:100 (Ref.1).



Fig. 3.20 Individual improvements in three-room apartment. Increasing the bedroom area by adding the balcony to it. Scale 1:100 (Ref. 1).

This means that the individual is willing to use part of his savings for the improvement of his apartment. The participation of the individual in improving his house is done according to the priorities of his needs and requirements. This also means that individual participation in improving his house could be the base for his participation in completing the finishing of his house, if he is provided with a shell house. This trend could be implemented with do-it-yourself system if the fitting and equipments are available to him in a cooperative store where he can buy what he wants and fix it by himself. These are the factors which affect the design of the shell house. Architecture therefore is bound to the principles and concepts derived from the participation form. Several design concepts could be derived from the modifications done by the individuals to the given plan. This is why individual participation in the design process will save time, money and effort in housing project. The minimum needs could be defined and a space is given to the individual for any future extension according to his capabilities, financial resources and expected family size.

3.6.2. In another project; EI-Sawaisa district in Nasr City, Cairo, which is a governmental public housing project, it was found that 68.8% of the families made some changes and improvements in their houses. Almost half of them (56.5%) made their improvements after they felt secured, and (30.6%) when they needed extra space in their houses for children, and the rest (12.9%) after they have got more money(1).

These improvements and changes can be classified as in Table 4, with their percentage from the total number of people who did the improvements.

1 Dr Abdelkarim Al-Ahwal, The Phenomenon of Individual participation in Environment Improvement and Changing Popular Housing Types-District No 7 Nasr City. October, 1983, p 67 (In Arabic).

Table 4 Improvements and changes in El-Sawaisa district housing (1)

Action	Percentage of people
1. Repainting the walls with oil paint instead of lime (Fig. 3.21).	74.2%
2. Changing the electric connections in the apartment.	37.1%
3. Closing the balcony and using it as a separate room (Fig. 3.22).	30.6%
4. Repainting the walls with lime.	29.0%
5. Changing the water supply pipes.	29.0%
6. Changing the quality of the doors and windows from soft wood to hard wood.	
7. Closing the balcony and adding its area to the rooms.	25.8%
8. Changing the floor tiles.	22.6%
9. Fixing ceramic tiles on the walls.	17.7%
10. Installing water heater.	11.3%
	6.5%

This means that the majority of the families are willing to pay for the improvement of their houses according to their saving capabilities. This is one factor affecting the economics of building industry. The items mentioned in the above table can be alternative in the original specifications in order not to double the cost and avoid the waste.

3.6.3. *In the Third Project*, the Workers' City of Helwan is a governmental housing project, built in 1960 west of the town Helwan. It was noticed that the community members made some transformation in their houses because of their increased income and family size.

1 Ibid.

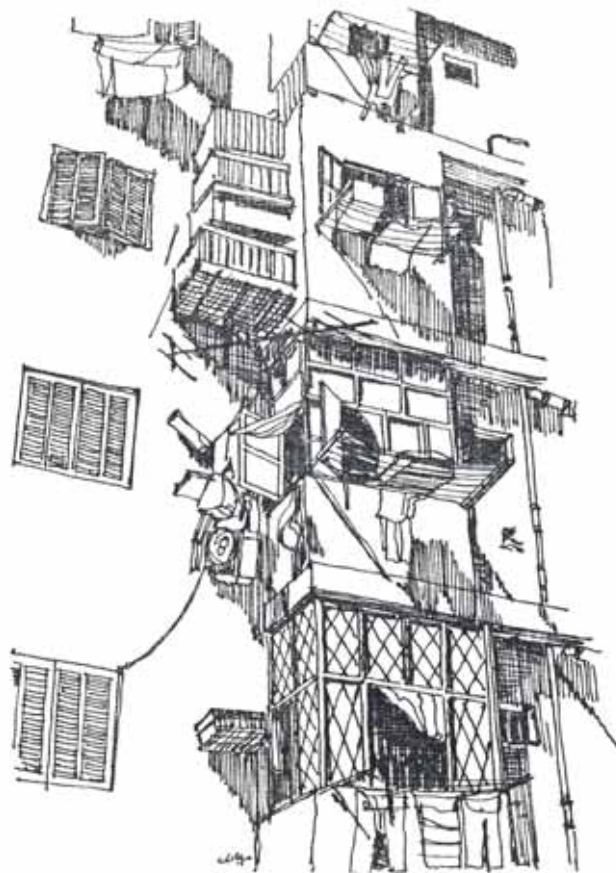


Fig. 3.21 Closing the balcony and using it as a separate room in El-sowisa district.

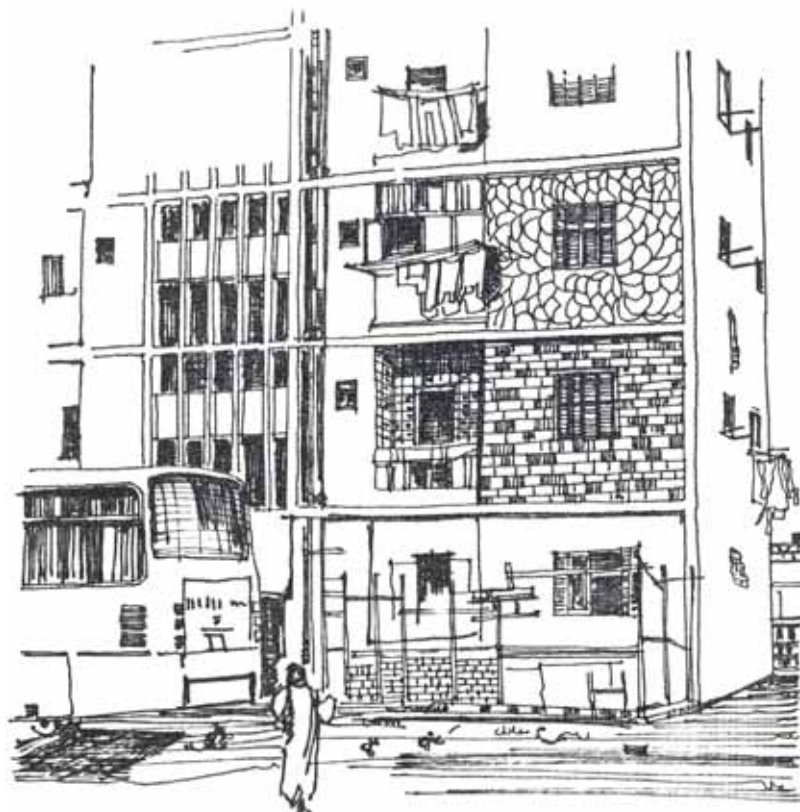


Fig. 3.22 Repainting the walls.

The site covers approximately 41 hectares and contains 6800 housing units just less than half of them are of two-rooms while the rest are of three-rooms (Fig. 3.23). The five storey walk-ups planned in monotonous rows or around open spaces, are built in reinforced concrete frames, while the external and partition walls are built with bricks or concrete blocks. The housing blocks are grouped according to number of rooms and area of each flat. The first block comprises flats of two rooms with an area of 35 m² each, while the second block comprises flats of two rooms with an area of 34 m² each, and the third block comprises flats of three rooms with an area of 46 m² (Fig. 3.24).

Table 5 shows the different improvements which took place in each block including modification and extensions with their percentages and expenses (1):

1 A. Graham Tipple, Nicholas Yilkinson, Magdi Nour, The Transformation of Yorkers' city. Helwan. Multi.storey extensions observed. Open House International, Vol. 10. No. 3 1985.

Table 5 Improvements and Changes in Worker's City of Helwan Housing

Modifications Alterations are defined as internal changes of the layout of the flats without increasing the overall net floor area except by incorporating the balcony

Block 1	Block 2	Block 3
<p>All flats have had the balcony incorporated into the living space. The space gained is equal in width to the kitchen and is used for extra dining or sleeping space, or both (Fig. 3.25).</p>	<p>Only one stack of flats had not been extended and this showed minor changes to kitchen and balcony arrangements with the ground floor flat having temporary brick walls and corrugated sheets cover as additions (Fig. 3.26).</p>	<p>Most alterations affected the kitchen, W.C. and balcony area. The balconies have been incorporated into the flats to give a greater depth to the kitchens. In some cases, the kitchen width has been increased by re-building one of the internal walls perpendicular to the façade (Fig. 3.27).</p>
<p>Extensions</p> <p>Extensions which include the incorporation of the balcony space as an room per additional building which add at least one flat. They normally involve the column and/or provision of a five-storey framed concrete of brick structure to any side the existing building.</p>		
Block 1	Block 2	Block 3
<p>Extensions have been made on the balcony side of the first two flats from the west on each floor. They appear to form a single five storey high structure, 4.6m deep and 12m wide, covering the full 6m width of each flat. In nearly all the flats,</p>	<p>Unlike block 1 where extensions are continuous and of equal depth, those in block 2 vary from 2.22m to 4.55m. Each extension is built to leave a gap of approximately 2m to allow access to service pipes. There is a relationship between depth of extension in block 2 and function.</p>	<p>There are hardly any extensions in them.</p>

Block 1

The extension is divided into two rooms and a new balcony. The additional rooms have access from the kitchen area and, in some cases; the original brick infill facade wall has been removed to provide a 9.5 m deep room. The function of the extension spaces is a combination of living and reception, dining and sleeping activities.

Percentage of extensions

30% of the householders extended and 43% intended to do so in 1985 as the footings were already in.

Extensions expenses

Mean expenditure on extensions was L.E. 1700, with a range from L.E. 1200 to 2500 per housing unit.

Block 2

Those of 2 to 3m are used as one room while the deeper ones are generally subdivided to make two rooms (Fig. 3.28).

83% of the householders had extended and the remainders intended to.

Mean expenditure on extensions was L.E. 1000, with a range from L.E. 350 to 2040 per housing unit.

Block 3

No household had extended.

Of those intending to extend their flats in 1985, L.E. 1500 was the mean expenditure expected with a range from L.E. 1000 to 2000 per housing unit

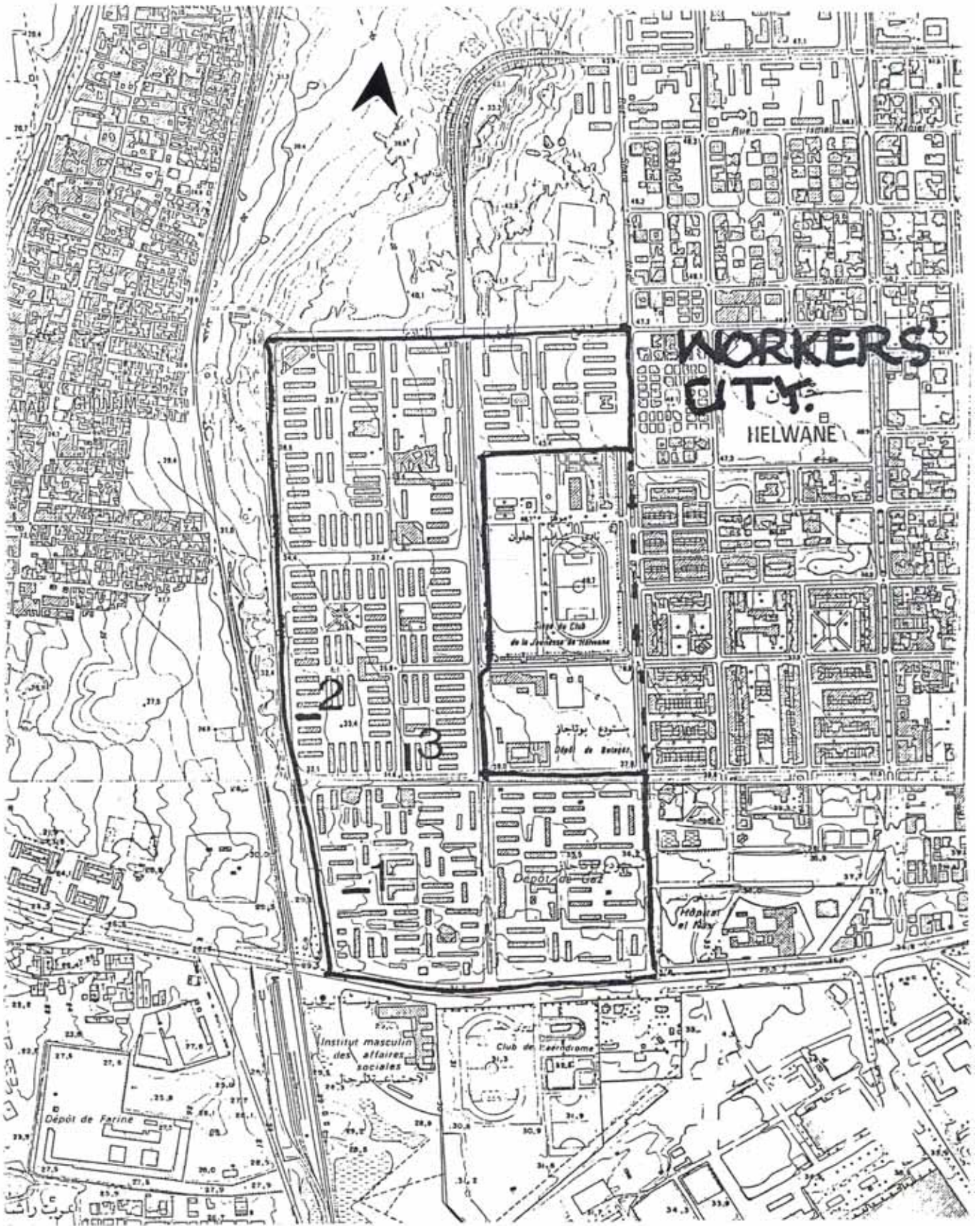


Fig. 3.23 Layout of the worker's city of Helwan showing the location of block 1,2and 3 (Ref.60).

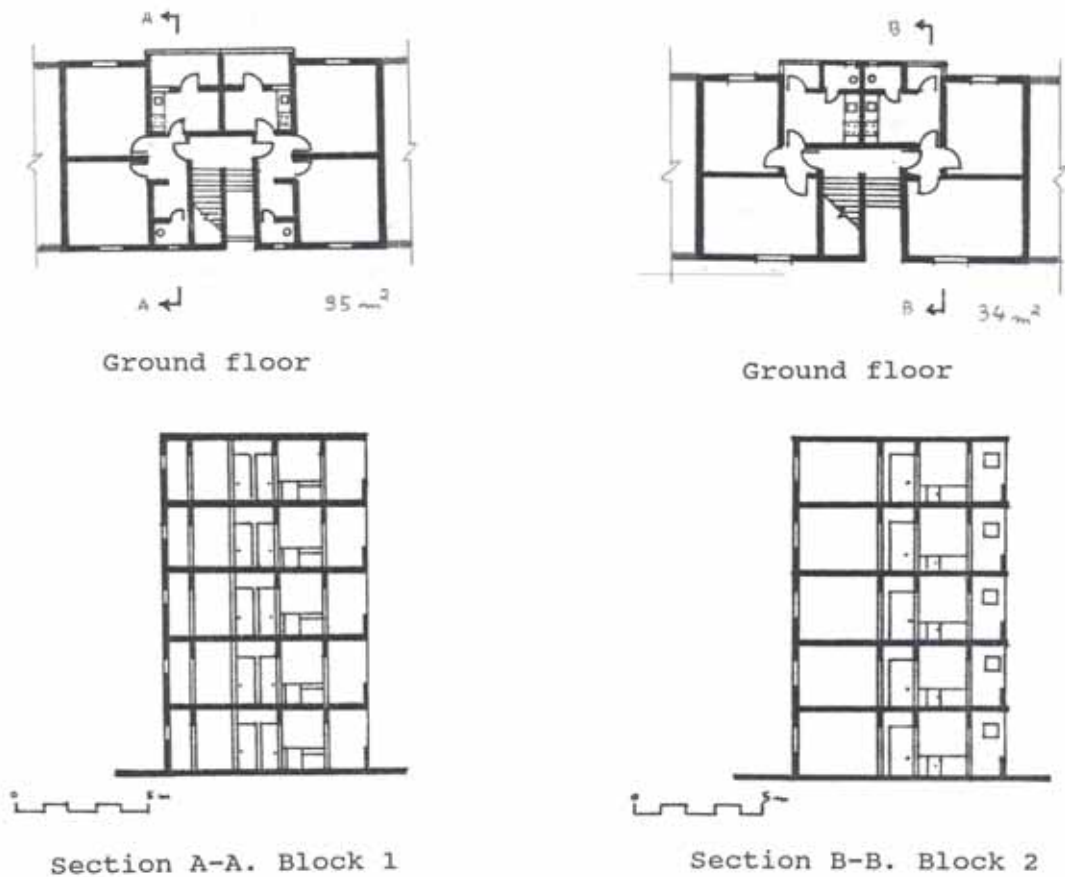
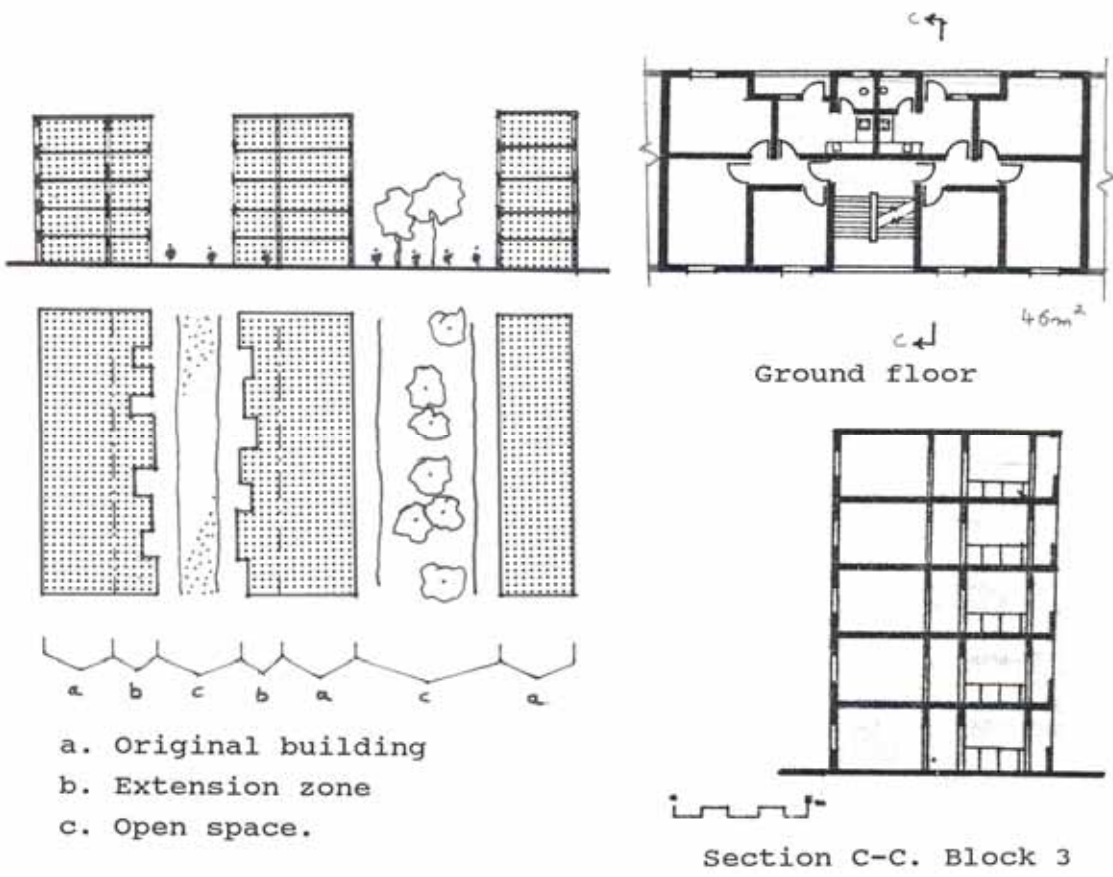


Fig. 3.24 The initial plans and sections of the housing blocks (Ref. 60).



- a. Original building
- b. Extension zone
- c. Open space.



Fig. 3.25 Extensions and alterations of 2nd floor - block 1:

- Adding the balcony area to the living space.
- Extensions have been made on the balcony side for extra two rooms and new balcony

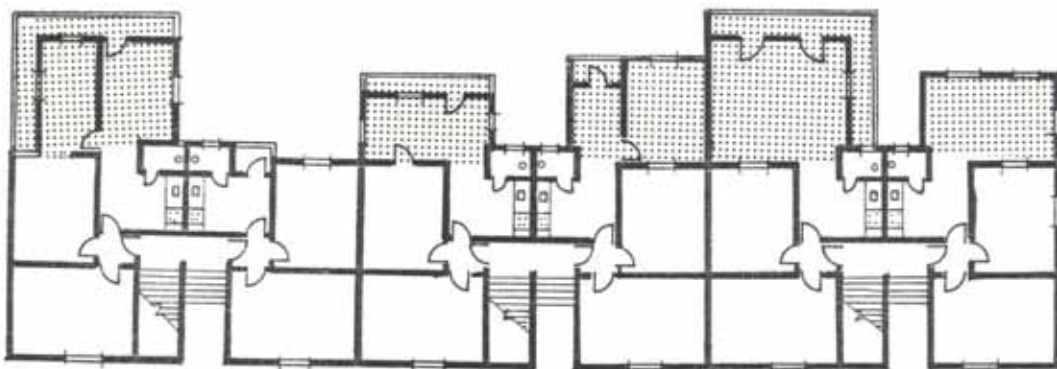


Fig. 3.26 Extensions and alterations of 2nd floor - block 2:

- Incorporating the balcony space.
- Extensions of one or two extra rooms.

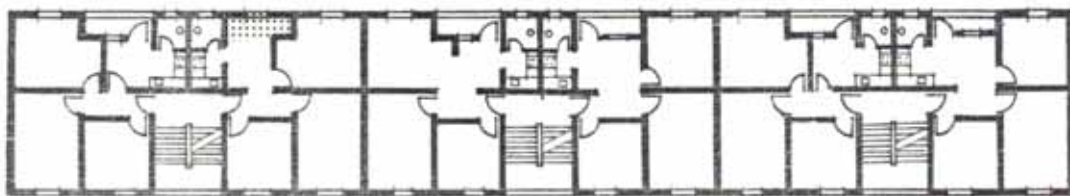


Fig. 3.27 Alterations of 4th floor - block 3 (Ref. 60):

- Most of the alterations affected the kitchen, W.C.
- There are hardly any extensions in them.

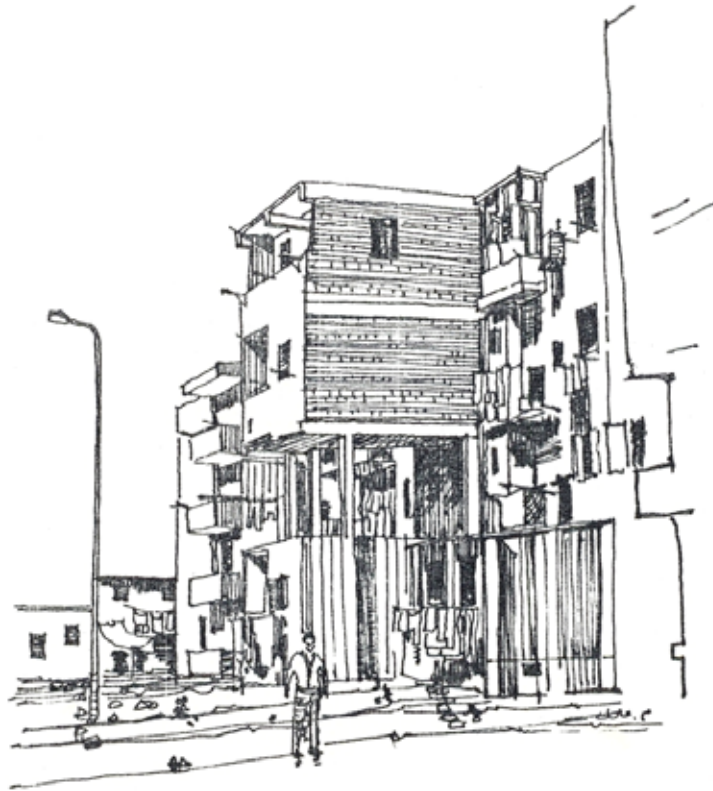


Fig. 3.28 The extension of an annex of a single five - storey high structure built in the street (Ref. 62).

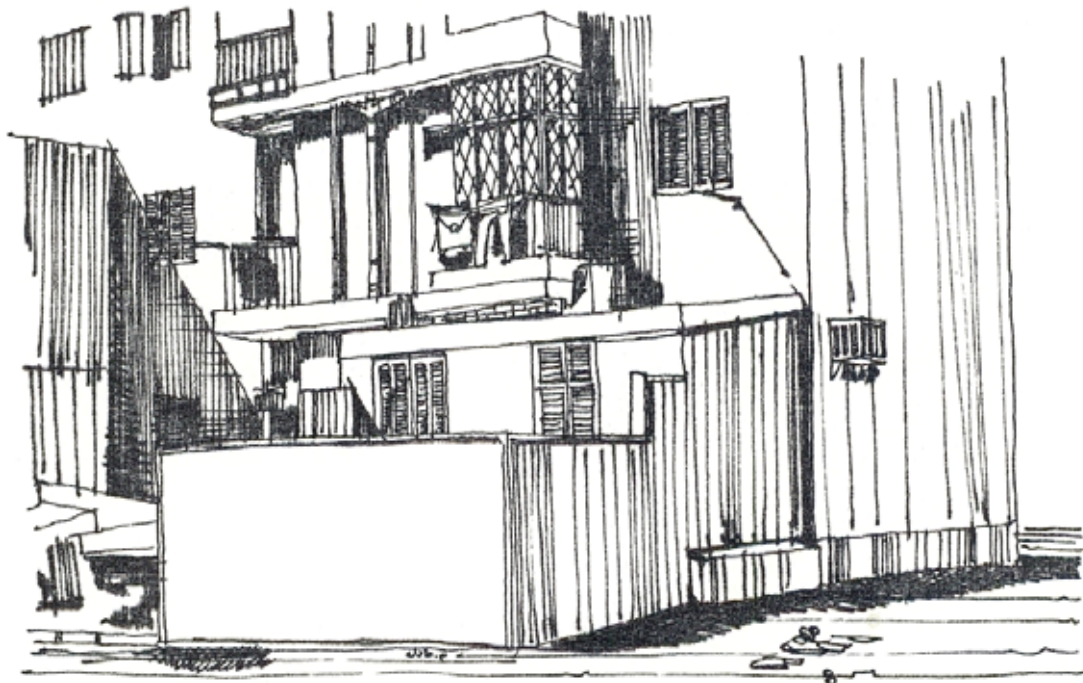


Fig. 3.29 The relatively wide space between blocks was transformed by the people's own extension activity into an urban layout of narrow streets (Ref.62.)



Example a :



Example b :

Fig. 3.30 The extensions of the housing blocks reflect the actual needs and the cooperation action of the community. (Ref. 62).

The relatively wide spaces between blocks were transformed by the people's own extension activity into an urban layout of narrow streets which suits the hot dry climate of Egypt regardless of building regulations. It is likely that the process of construction is also creating a great sense of communal identity than been planned or designed previously (Fig. 3.29).

The participation of the community becomes essential whether in new projects or upgrading old areas. Therefore it becomes important that the beneficiaries of the project should be known before-hand to the authorities. Their participation in planning and design follows bearing in mind that they are willing to pay for the modification or extension of these housing units.

In the design of modification in the Worker's City of Helwan, it was noticed that the sizes of columns and beams were generally sufficient, to meet any extension or alteration, though floor slab thicknesses, especially those for balconies seemed rather thin. Brick and plaster work appeared to be technically good. The plaster covering and paintwork were of good standard. The external appearance of the extensions for five floors high was a reflection to the actual needs and the cooperative action of the community. Most of the extensions were financed by contractors who received deposit from their clients and the remainder was to be paid on two years installments (1) (Fig. 3.30).

3.6.4. In the fourth governmental project the government built a new community for the Nubians in Kom Ombo, South of Aswan City in Upper Egypt in 1964(1). Those Nubians emigrated after constructing the High Dam and the formation of the High Dam Lake.

1 Ibid.

2 General Organization for Housing, Building and Planning Research, Report on: Field Study on Nubians' Houses, 1978.



Fig. 3.31 Individual changes in governmental housing project in kom ombo (Ref. 46).

The government made the planning and constructed the residential units in a short time, without making deep surveys on the community and finding their actual needs and wishes. As a result, the community made different changes and improvements in their new houses; moreover, many of them are trying to go back to their homeland.

The different improvements which took place in the residential units are defined as follows (Fig. 3.31):

- a. Covering most of the stone walls of their houses with plaster or clay as climate insulation.
- b. Building a Mastaba for sitting in front of their houses, as it is a traditional habit for them.
- c. Constructing a concrete slab supported on iron beams, with a 60 cm distance between those iron beams, over the guest room for climate reasons.
- d. Opening two large window units in the guest room, instead of the small opening which is closed, for ventilation.
- e. Demolishing the toilet and transferring it beside the kitchen and building a store room beside the toilet for better use.
- f. Building a corridor parallel to the bedrooms covered with timber structure, palm-leaf and clay for providing shade.
- g. Closing windows opening on the neighbor' court for privacy.
- h. Closing the sheep-cote entrance for security.

It is worth mentioning that all these improvements were done by the people themselves without any outside assistance, just depending on their past experience which they gained many years ago.

3.6.5. Comment

It is clear from the above study that the government built these public housing projects without knowing the actual needs of the-community, their habits or their way of life.

The authorities concerned prepared the designs of houses and implemented them regardless of any kind of community participation. This is why the occupants made many changes in their houses in order to suit their living requirements. The consultation with the individuals and the community becomes very essential in order to understand their actual needs and to give them a chance to participate in the project specially in decision making steps.

All these changes and improvements were done by the members of the family themselves. They identified their own problem, found alternative solutions for it, made their final decision and then did whatever they want according to their needs and ability, with some outside help specially in the technical aspects. In this case the individual family has its initiation, ability, past experience and the talent to improve and change their housing situation, but with some limitation in the technical aspects. The answer in this case lies within the development of appropriate building technology for the people to assist in building their houses in future.

3.7. Community Participation and Home Improvement Loans

Loans are provided to people who want to improve their houses by favorable terms in order to encourage community participation in this form. In the case of Helwan upgrading project, loans were available at favorable term of 7% interest for 5 to 10 years. This loan is provided with the following:

- a. Construction drawings of standard recommended improvements
- b. contracting assistance,
- c. plans approval and supervision,
- d. a limited amount of training in building skills
- e. Access to scarce or specific building materials.

Emphasis would be placed upon development means to assist the traditional and successful process of construction in informal settlements without abstracting the self-help improvement process. The Project Implementing unit (PIU) has developed a relatively accomplished field team which does promotion, takes loan applications, assists in home improvement design and monitors construction(1).

Since home improvement loans in this project began in 1981, demand for these loans has been very strong. The programme originally assumed a total demand for 1400 loans in seven communities. The actual number has reached 1275 from only three communities. This is a remarkable achievement in community participation. Estimates at that time showed that it may reach 5000 for seven communities. Table 6 shows the number of loans and its value by different community as of 31 December 1983(2).

1 Joint Housing Projects. Executive Agency, Ministry of Housing and Public Utilities, Helwan Housing and Community Upgrading for Low Income Egyptians, 1984, p. 5.

2 Joint Housing Project Executive Agency, Ministry of Housing and Public Utilities, Community Upgrading. An Urban Development Policy for Egypt, 1984, p. 21.

Table 6 Number of loans and their value in some of Helwan's Community

Community	Total	Arab Ghoneim	Ezbet Rashed	Zein
Number of loans	1275	716	484	75
Value (\$ millions)	2.02	1.24	0.70	0.08
Average loan amount	1580	1725	1220	1110

A recent spot survey, of the home improvement loan program completed in September 1984 in conjunction with a USAID mid project evaluation, showed that on the average, borrowing households added 60% more of their own funds to the amount that they had borrowed. There has been substantial demand for the loan programme, with the majority of the loans being used for unit expansion. This means that people are willing to pay for the improvement of their houses if they found sincere guidance and gain confidence (1) (Fig. 3.32).

One of the assumptions of the programme was that a home improvement loan programme not only maintains the existing house, but also adds new houses. Table 7 shows the number of new flats and rooms constructed with home improvement loans, as of 31 December, 1983(2).

Table 7 Number of new flats and rooms constructed with home improvement loans

Community	No. of flats completed	No. of extensions Of three rooms	No. of extensions of two rooms	No. of extensions of one room
Ezbet Rashed				
Zein	120	24	135	65
Arab Ghoneim	152	92	134	75
Total	272	116	269	140

1 Ibid, p. 15.

2 Joint Housing Projects Executive Agency, Ministry of Housing and Public Utilities. An Urban Development Policy for Egypt, 1984, p. 21.

In addition to increasing the supply of new housing, the home improvement loan programme did maintain the existing houses. Table 8 shows the number and type of improvement to existing houses (1).

Table 8 *Number and types of improvements to existing houses*

Community	Plumbing	Electrical	Carpentry	Finishing	Stairs	Concrete Roof
Ezbet Rashed, Zein	25	32	117	196	20	767
Arab Ghoneim	4	9	30	75	81	883
Total	29	41	147	271	101	1650

The home improvement loan programme has been effective in reaching low income groups with 15% of the borrowers following below the twentieth percentile of national urban income and the large majority (90%) falling below the medium income. Moreover, the funds used in this programme had been recovered, suggesting that they will be able to be recycled into yet more home improvements.

The loans were provided through the following steps (2):

- a. Filling in the loan request form and presenting the required documents.
- b. The site will be investigated by the development-agency and the costs and size of the loan would be estimated.
- c. A contract would be written with the loan requester after getting the approval of the chief of the house improving groups and preparing the installments schedule, and the building permission.

The monthly installment value to pay back the loan is determined according to the investigation covering the price list, and the income of the loan requestor and his age. The

1 Ibid, p. 22.

2 Article published in Al-Ahram newspaper, No for Destruction. Yes for Upgrading. January 30, 1984, p. 3. (In Arabic)

Installment should not exceed 0.25 of the salary. The installment period ranges between 5 and 20 years. The loan is given in three amounts; each one is related to a certain size of the work in the house. There is a technical assistance to execute the construction works presented by engineering drawings, technical supervision and publications. The execution in this case would be in accordance with the engineering and the technical specifications.

These terms are put by the JHP presented by PIU in accordance with the lending Real Estate Bank. This means that community participation involves a financial system which could be easy to apply. This is beside the other managerial and political implications. These are the three main bases for planning, design and construction.

In other projects like that of Manshiet Nasser upgrading(1), home improvement loans were available of up to L.E. 50 per household to purchase materials for home improvement in all areas. But due to problems in implementing the project, the National Bank of Egypt, which was supposed to provide these loans, was dropped out of the project. Consequently, no loans were even made for this purpose. This means that loans system has to be in accordance with a national programme for upgrading or site-and-service projects.

In Ismailia upgrading project, credit in the form of small loans, was to be made available to facilitate home improvement and progressive addition to basic structure. There was no specific loan delivery system or loan terms in the design documents, but credit was available for home improvement loans from the General Association for Housing and Building Cooperatives at less than market rates (2) (Fig. 3.33) .

1 Stephen C. Silcox, A comparative Evaluation of Three Upgrading Projects in Egypt. (Helwan, Manshiet Nasser and Ismailia), April, 1985, p. 15.

2 Ibid, p. 20.

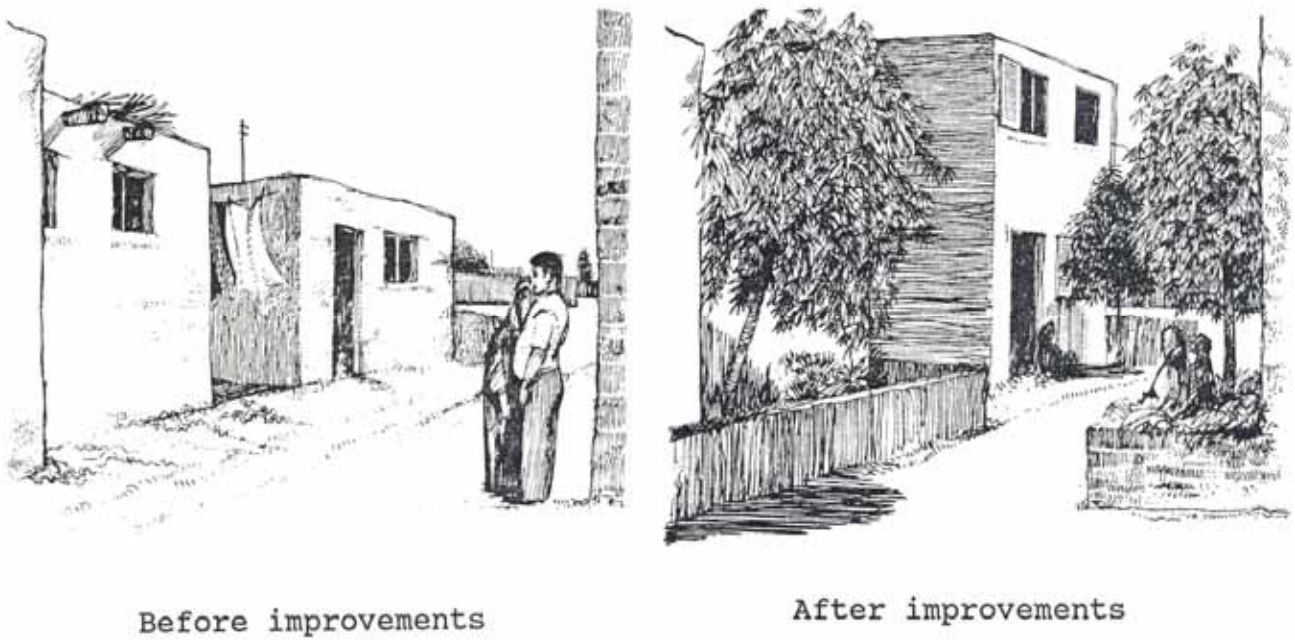


Fig. 3.33 The improvements achieved by using loans in Ismailia upgrading project (Ref. 7).



Fig. 3.32 The majority of home improvement loans were used in unit expansion in helwan upgrading project (Ref.62).

3.8. Social Impact of community participation

The social aspect is one of the main factors which affect community participation, besides the political, economic, and technology factors.

There are three main social characteristics which are essential to motivate community participation. These factors are:

- a. The availability of social stability in the area especially after the community members owned their own houses and the acceptance of using the idea of community participation in improving their environment.
- b. The conviction of the members of the community with the possibility of participation, of taking their own decisions, making their own plans and implementing them by themselves.
- c. The existence of minimum level of social and cultural impact is essential for the continuation of community participation.

In case of Egyptian communities, these characteristics vary from one area to the other. Most of the low-income groups, living in informal areas or requiring new housing projects come from rural communities with suspicious feelings towards any formal action affecting their life. In this case the economic incentives will be more effective in promoting community participation. This includes offering them new jobs or giving them the right of landownership after a certain time. If community participation is accepted by the people they will take part in the planning and design process. The planners and architects will act as advisors for the community.

From the experience of El-Kalafawy district in community participation in environmental development, it is found that

the community was divided into two groups (1). The first group comprises families living in housing blocks of two and three room apartments with an entrance serving ten apartments. The second group comprises families living in housing blocks of one room apartment and these blocks consist of five walkup storey's each with a corridor serving from 8 to 12 apartments (see 3.6.1). Each of these groups has different social characteristics which reflect their degree of participation in developing their environment. It is found that the first group of families was much active and organized, and succeeded in developing the environment. While the second group of families was neither keen nor active in developing the environment.

The social characteristics which affected community participation in this district could be classified in the following areas (2)

-
- 1 Dr. Abdelkarim Al-Ahwal, the Phenomenon of Individual Participation in Environmental Improvement and Changing Popular Housing Types-El-Khalafawy District-Shobra, 1981, p. 7. (In Arabic).
 - 2 Dr. Wafaa Abdallah, Community Participation Experiment in E l-Khalafawy District, January 1983, p. 12. (In Arabic).

Table 9 Social Characteristics which affected community participation

Group (I) Families in 2-3 room apartment.	Group (II) Families in 1 room apartment
<p><u>a. Job classification</u> The people are working as teachers, artisans, owners, government employers and employees in public or private sectors. Some of them are architects, army officers and technicians. Out of the total population 15% of the women are working as teachers and civil servants.</p> <p><u>b. Educational condition</u> Most of the youth are learning in schools, institutes and universities. A great number of the women have middle education.</p> <p><u>c. social condition</u> This community was more or less homogeneous in culture, education and type of work. They enjoy some kind of social relationships. During and after the implementation of the project, this relationship became more stronger and acquired new habits as evident in self-denial, cooperation in common work, cleaning their environment, teaching their children to keep their garden tidy and clean, and moreover mutual respect and confidence was clear among all members of the community. It was noticed that this community have common ambitions for their future</p>	<p>Most of the people are working as workers, car drivers. Some of them are governmental employees.</p> <p>Some of the women are working as workers in factories or as nurses.</p> <p>A small number of youth are educated and most of the women are not educated</p> <p>This community is in a state of unrest. There is no strong relationship among them. They live, individually, trouble makers, have no loyalty to their place, no cooperation in common work and they are selfish. Moreover, they have no efficient and capable leaders, they have no respect among themselves and this situation resulted in robbery and disrespect. They have no ambitions for their future and the family relationships are neglected. This community is characterized by disorder and dissolution.</p>

d. Participation in Implementation and maintenance

There is an implementation unit which consists of a teacher, a doctor and workshop owner. Of this unit came out many maintaining units. They carried on the experiment with some contacts with the government administration in order to get financial and technical assistance.

The type of work of this community, with the variety of professions, helped them to find free time for implementing and maintaining this experiment.

The implementation unit which consists of three labours; one is working in sporting club, the other in an electrical company and the third one in welding workshop. Out of this implementing unit came a temporary maintaining unit which could not continue due to lack in finance, labour and talents.

The majority of this population is of hardworking labours who do not have free time to work in implementing and maintaining the project. They did not try to contact the government administration.

It was obvious that the experience of Group I improved the way of life of the community members and their way of thinking. During and after the project/I there were strong relationships between them. They were happy and proud of what they had achieved. Great loyalty was born into their souls toward their new environment, for example, they stopped throwing garbage in the streets, and instead they collected their garbage in special places. They taught their children how to take care of gardens and keep their environment clean and proper.

This experience encouraged the people to have more hopes such as the need for a multi-purpose hall, night medical care, mechanical bakery, public telephone, street pavements and sewage pumps. These hopes cannot be realized unless with the help of the local authorities. Community participation in this way becomes a tool in serving part of the budgets allocated for urban development.

The conventional concept of urban development has to be modified to cope with the form of community participation. This will be reflected in the planning methodology, criteria, standards and phasing of implementation as well as in the design concepts. Both the planning methodology and design concept cannot be determined except through the experimental approach. What could be achieved here is only the principles of planning and design for community participation.

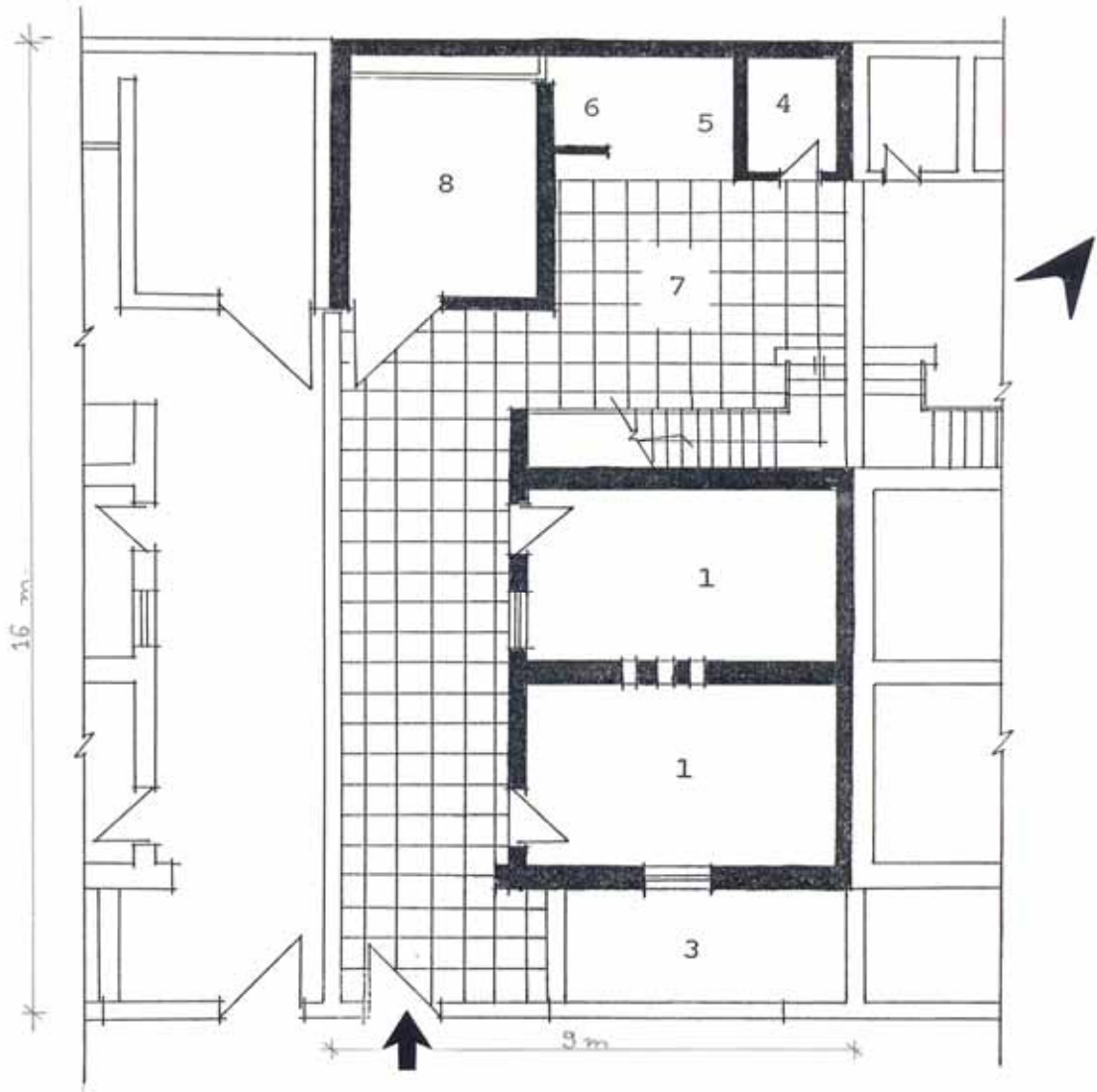
3.9 community participation in Aided-self-Help Project

At the beginning of the sixties, the Ministry of housing implemented a new experimental project in the reconstruction of Egyptian villages. This was through community involvement in the building process of new houses in the extended areas of old villages, or in upgrading and improving old houses. In this project, the community was supposed to participate in building their new houses, upgraded old ones and, improved their environment. They were organized according to their financial contribution and the work which they perform in their free time. They were trained to perform special kind of work using local materials and precast units in building new houses (1).

The government input in this project included the following actions:

- a. Offering technical advice in village planning, housing design, building materials and building techniques.
- b. Developing and producing local building materials.
- c. Buying building equipments which were needed, with a maximum of 300 L.E. for each village.
- d. Paying financial assistance to the participants with a maximum of 10% of the estimated cost of the project.
- e. Granting loans for the participants with a maximum of 60% of estimated cost of the project, with long-term repayment and low interest.
- f. Organizing training courses for the participants as unskilled labour.
- g. Supplying the participants with all building materials required.

1 Academy of Scientific Research-General Organization for Housing, Building and Physical Planning Research, The Rural House and Physical Planning in The Egyptian Village-Part Three: Traditional and Modern Rural House. 1980, p. 54. (In Arabic).

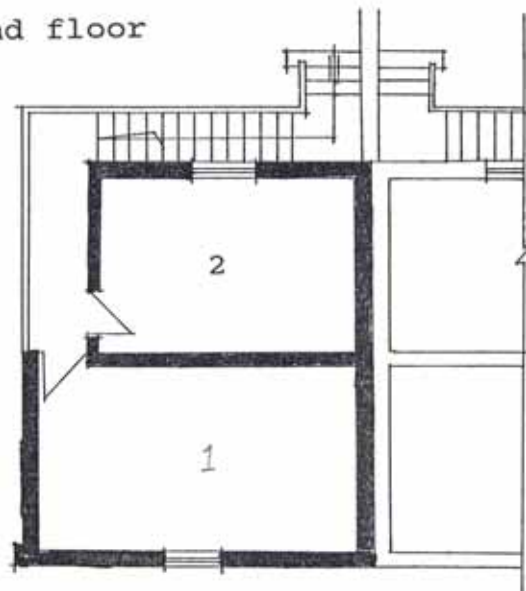


Ground floor

Key:

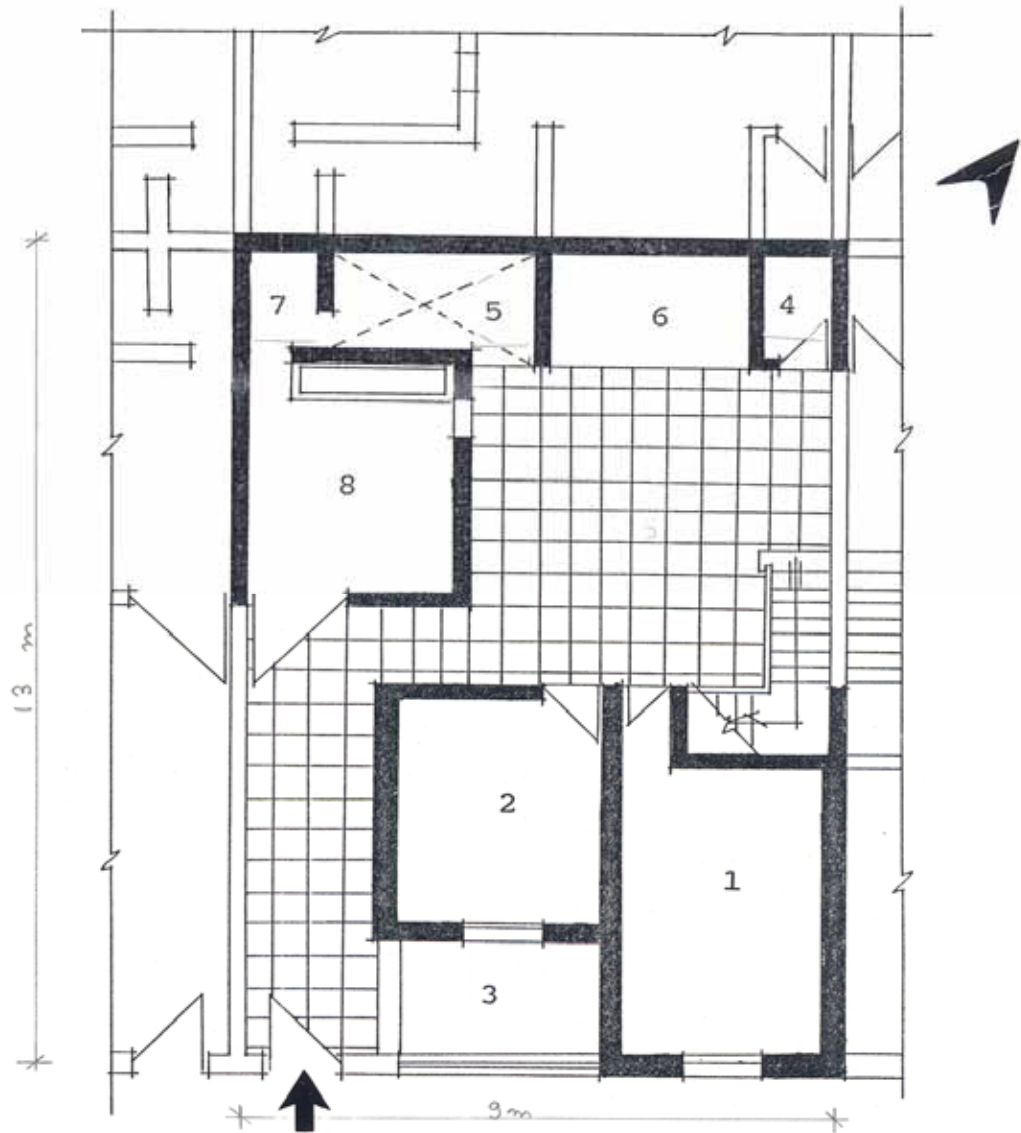
- 1. Room 2.90 x 4.75 m.
- 2. Room 2.90 x 3.10 m.
- 3. Mastaba 1.90 x 4.10 m.
- 4. Toilet 1.40 x 1.90 m.
- 5. Kitchen 2.00 x 2.00 m.
- 6. Straw store.
- 7. Open court.
- 8. Stable 2.90 x 4.00 m.

Total floor area: 80.00 m²



First floor

Fig. 3.34 Rural house. Example A-1 (Ref. 2).

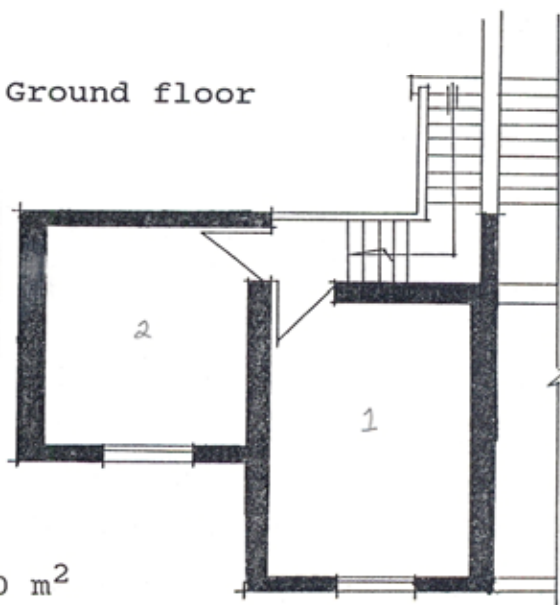


Ground floor

Key:

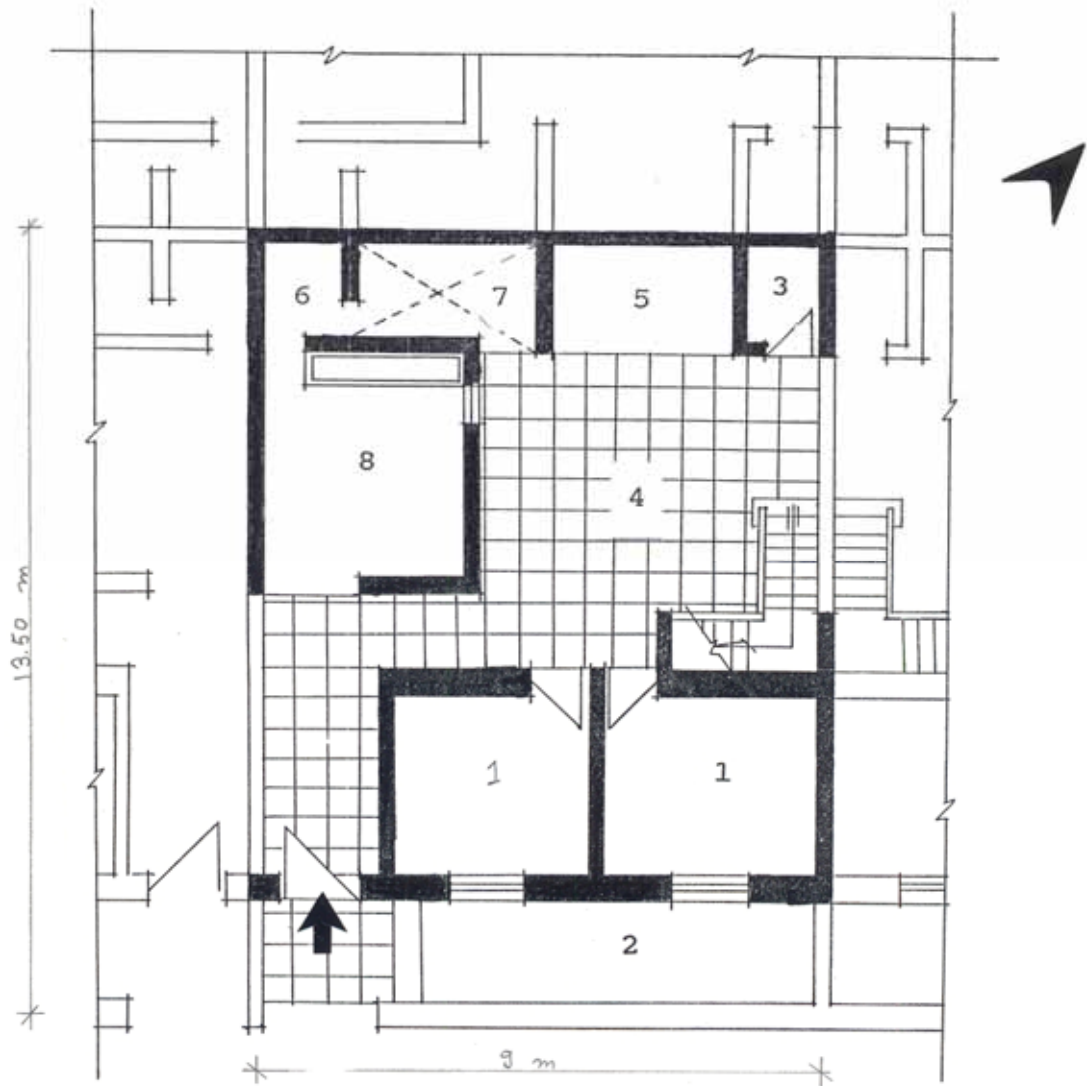
- 1. Room 3.00 x 4.50 m.
- 2. Room 3.00 x 2.50 m.
- 3. Mastaba 1.80 x 2.50 m.
- 4. Toilet 1.00 x 1.60 m.
- 5. Open court.
- 6. Kitchen 1.75 x 3.00 m.
- 7. Straw store.
- 8. Stable 3.00 x 2.50 m.

Total floor area: 72.50 m²



First floor

Fig. 3.35 Rural house. Example A-2 (Ref.2).

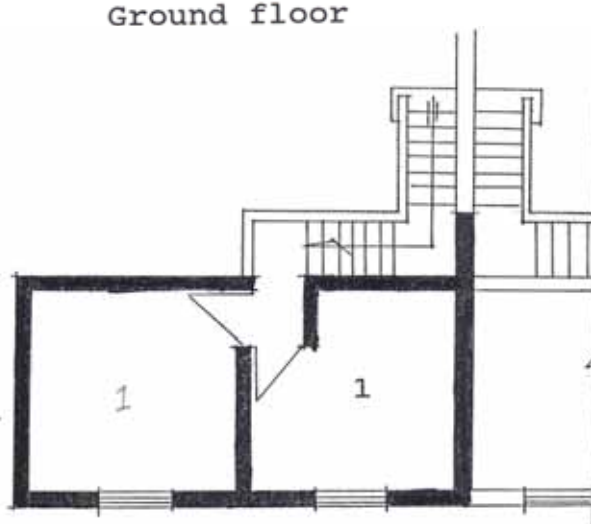


Ground floor

Key:

- 1. Room 2.25 x 3.00 m.
- 2. Mostaba 1.60 x 6.50 m.
- 3. Toilet 1.00 x 1.60 m.
- 4. Open court.
- 5. Kitchen 1.50 x 2.00 m.
- 6. Straw store.
- 8. Stable 3.50 x 3.00 m.

Total floor area: 63.90 m²



First floor

Fig. 3.36 Rural house. Example A-2 (Ref.2).

On the other hand the input and responsibilities of the participants were as follows:

- a. Paying in cash part of the cost estimated for housing.
- b. Working according to the time schedule and the kind of work designed by the supervision committee.
- c. Carrying out all unskilled work needed in an organized and, cooperative way.
- d. Paying other expenses after subtracting the government contribution.

Nazlet El Ashtar village was one of the villages in Giza Governorate which was selected to implement the experimental (pilot) project in building rural houses through aided self-help system in the year 1962. In this pilot project the ministry of housing carried out the following studies (1):

- a. Site observation.
- b. Detailed social survey.
- c. Detailed physical survey.

These studies included researches and experiments which were applied to building materials, building process and suitable house design which cope with the villages needs and the building technique applied (Figs. 3.34, 3.35 and 3.36). These studies also covered the human and natural resources available in the village and the possibilities of using them according to the feasibility studies.

3.9.1. Community Awareness of the Project

The public awareness in the pilot project can be seen in many ways and on many levels, beginning from the awareness of the government administrations dealing with the project up to the awareness of the community and its members.

1 Salah ELdin Mahamed Zaki, Rural Housing. Aided-Self-Help Method of Construction. Site Experience in One of Giza Governorate Villages'. Seminar in Cairo: Rural Housing in Arab Countries, 6-11 November 1977, p. 8 (In Arabic).

There was pre-awareness which took place before selecting any particular village, and post-awareness which took place after choosing the village.

3.9.1.1. Community Pre-awareness

The objectives of this step were to examine the response of the people and to insure that they are going to cooperate with the governmental representatives in giving them all the needed data and information. There were many ways to contact the community members to explain and define the objectives of the project, these ways were:

Personal contacts with the community members and their leaders.

- a. Organizing public meetings with the whole community.
- b. Showing educational and recreational films.
- c. Publishing papers, posters, and prints and organizing an exhibition about the project.

3.9.1.2. Community Past-awareness

After selecting the village in which the pilot project was to be implemented, according to the results of community pre-awareness and their response to the project, the suitable families were chosen to participate in the project. The selection of families was according to criteria for general conditions and another for priorities as follows:

The general conditions which must exist in all the families going to participate in the pilot project are:

- a. Willingness to participate, by attending the meetings, asking to participate and understand the objectives of the pilot project.
- b. Good reputation.
- c. Working ability according to age and health condition.
- d. Financial ability.

Special standards were put to find out the willingness of the families to contribute to the pilot project, according to the number of degrees they collect. The classification of these standards were as follows (1):

a. The degree of enthusiasm for the project.	30 points
b. Housing condition	20 points
c. Health condition	20 points
d. House crowdness	20 points
e. Working willingness	<u>10 points</u>
Total	100 points

A governmental social survey was done on the families that were going to participate in the pilot project to ensure that the data they gave was true. After that the families were reselected according to the standards put by the agriculture cooperative society in the village, which is going to organize the families financial contribution and. the repayment of governmental loans. This society puts one condition on the families selected which is each family must own at least one feddan or rent an area of two feddans in order to ensure that they were capable to repay their loans.

3.9.2. Government Organization Awareness

There was awareness for the government organization which was going to deal with the pilot project and to implement and supervise it. To guarantee that, there has to be a common understanding between the community and the government organizations concerning this pilot project. The objectives of this phase were to explain the project objectives and its steps in details to the representatives of those official organizations, and to tell them how to deal and work with the community. This was done through lectures, meetings, site visits in rural areas, publishing books and

1 Ibid, p.9.

Prints, showing films and slides about similar experiences, as well as showing them the results of experiments done on building materials and technique which they were going to work with.

3.9.3. Financial Resources

The ministry of housing (1) set out the means for financing the projects after the studies of each one depending on the contribution of community members which could be classified as follows (Fig. 3.37):

- a. Participant's contribution in labour.
- b. Participant's savings.
- c. Simple loans from the government.
- d. The government contribution had to be in supplying land, technical assistance and supplying building materials and equipments.

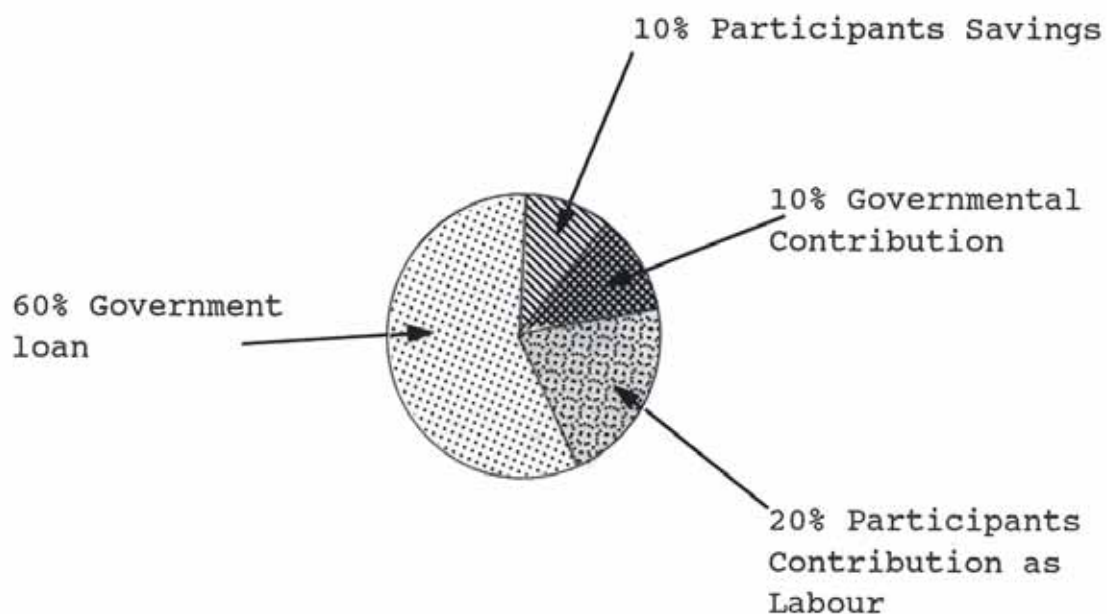


Fig. 3.37 Financial Resources for the Project

1 Academy of Scientific Research-General Organization for Housing, Building and Physical Planning Research, The Rural House and Physical Planning in the Egyptian Village-Part three: Traditional and Modern Rural House. 1980, p. 54 (In Arabic).

The cost of building a new house in 1962 was estimated as L.E. 280. This included the cost of building materials, labour and land, with an addition of 70 LE for participants working as labour to make the total cost L.E. 350(1).

10%	of the estimated expenses had to be paid cash by the participants	LE 35
10%	of the estimated expenses had to be paid as contribution from the government, with maximum of	LE 35
60%	Of the estimated expenses as loan from the government repaid on 25 years with 1.5% interest, and maximum of	LE 210
20%	Of the estimated expenses had to be paid for the participants work as labour	<u>LE 70</u>
	Total	LE 350

The amount of money for upgrading an old house in 1962 was estimated by LE 48, with an addition of LE 12 for participants work as labour(2).

10%	of the estimated expenses paid cash by the participants	LE 6
10%	of the estimated expenses contribution from the government with a maximum of	LE 6
60%	Of the estimated expenses as loan from the government repaid on 6 years with 1.5% interest, and maximum of	LE 36
20%	Of the estimated expenses paid to the participants work as labour	<u>LE 12</u>
	Total	LE 350

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- 1 Salah Eldin Mohamed Zaki, Rural Housing. Aided-Self-Help Method of Construction. Site Experience in One of Giza Governorate Villages. Seminar in Cairo: Rural Housing in Arab Countries, 6-11 November 1977, p 8 (In Arabic).
 - 2 Financing Rural Housing: Selected Policies and Techniques for Developing Countries. United Nations, New York 1974, p. 39.

In this village, the main work of the peasants was cultivation. The peasant's time was bound to the cultivation season. It was found that the peasant works between 150 and 270 days a year. It was also found that December was the best month for the peasant to contribute in building his new house or to improve his environment, because there was almost no work during this month. The beginning of the project had to be six months before that time in order to carry out the required preliminary studies.

3.9.4. Training Programme

The training plan for this aided-self-help pilot project was organized on two levels; the first, on the central level and the second on the local level. There was a training course for official technicians who were to implement and supervise the project after being designed. The participants and their leaders were selected as members in the implementing units. Each unit consists of an architect who lives in the area and acts as the chief of this project, a civil engineer, a sociologist and foreman. The working system was prepared after consulting with the participants.

3.9.5. Participants Working Regulations

The participants working regulations were put by the government administration after consulting the community and in accordance with their living conditions. These regulations define and explain the duties, jobs' description, and the responsibilities of the members of the community.

The participants working regulations consisted of the following items:

- a. The participant must accept to work by himself with other participants in the building process during the implementation of the project.
- b. The participant must work according to the working rules and attend all the meetings and accept all decisions taken by the implementing unit.

- c. The participant must work according to the time schedule put by the implementing unit. He should not work less than 24 hours per week with an average of four hours per day.
- d. The weekly working programme was put according to the free time available for the participant. The implementing unit estimated the total time needed to finish the work. This depends on the effort done by the participants. The implementing unit had the upper hand in deciding whether the work is done as required or not.
- e. The participant must work according to the weekly working schedule, and if he was absent for a forcible reason accepted by the implementing unit, then another member from his family must take his place.
- f. Every month there was a revision on the working time achieved by all participants.
- g. Each participant must work more than 80% of all working hours required from him each month, according to the working schedule. If he failed in this, he would be given a chance in the following month to compensate the working hours lost. Otherwise he would be considered withdrawn.
- h. In case of working a number of hours between 80% and 100% of what were required, the participant had to pay money instead of the last working hours. In case of working extra hours more than 100% there would be a reduction of the repayment of loan, with a maximum of 120%.

After implementing the pilot project through aided-self-help the following results were gained:

- a. Estimating a standard required. the exact amount of building materials to build measuring unit in each step of the project was
- b. Developing the designs in order to get the optimum use of labour and building materials available.

- c. Estimating the total working hours needed from the skilled and unskilled labour in the building process related to the free time available.
- d. Choosing suitable building methods and simple techniques which could be used without the need for outside assistance or long term training.

It is clear from the above experiment that community participation was not called upon from the very beginning. The gap between the community and the official authorities remained unclosed. The rural community has gained through its long history a sense of suspicion towards the official authorities. This pilot project was introduced to them by the under-secretary of state for housing affairs and not through local associations. The people were very reluctant to take part in the implementation of the project as they did not take part in the decision making in the planning or design process. Plans as designed were prepared before-hand by official planners and architects. This proves that community participation in planning and design is an important part in the rural or urban development process. The role of the planner or architect will be as a technical advisor to the community. They cannot force any pre-conceived ideas or concepts against the desire and wishes of the community who know better their needs and requirements. A dialogue between the planners and architects on one hand and the community on the other is essential. The planners and architects should be prepared to offer technical options which could be accepted by the community.

3.10. Training in community participation

3.10.1. In Urban Area

In Helwan Upgrading project training programmes were designed for:

- a. Project Implementing unit (PIU).
- b. Credit Foncier d'Egypt (CFE) [financial institute].
- c. Ministry of Housing (MOH).

The training programme for the PIU in general included project implementation, community/cooperative development, home improvement credit, communities/cooperative management, building products design, marketing analysis and evaluation, and construction management. The training programme, for the CFE included branch bank operations, project financial management, and electronic data processing methods. For the MOH the training programme included housing planning, housing finance policy and plan development (1).

In April 1985, most of the training sessions which took place during the first two years of the project were on-the-job training performed by the Cooperative Housing Foundation (CHF) for PIU staff. Few seminars on other upgrading programmes both in and outside Egypt were held to explain the concepts of upgrading to the PIU staff.

Most of the training funds provided for by the project (\$ 400,000) were kept under the control of the United States Agency for International Development (USAID) monitoring office. USAID controlled the Joint Housing Project directly to request participation for training seminars outside Egypt from time to time. In addition most of the top level officials of the project visited the U.S.A. and other foreign countries to attend seminars and to inspect relevant housing or infrastructure projects.

1 Staphen c. Silcox: A Comparative Evaluation of Three Upgrading Projects in Egypt. Helwan. Manshiet Nasser and Ismailia, 1985, p. 29.

CHF has prepared a number of training plans for the project. It is not clear how effectively these have been implemented to date (1). In any case, training programmes were tailored to serve the project. They were not considered for nation actions in this field. This means that the role of the trainers and trainees ends with the end of the project. The establishment of national training institutions becomes necessary.

In Ismailia upgrading project no formal training element was given in project design documents although there was implicit on-the-job training to be imported from the foreign consultants to the local project agencies staff during the design and implementation of the project(2).

Until 1985, the following types of training were provided to the local staff of the project agency:

- a. On-the-job training with the consultants working with Agency staff on specific tasks (3).
- b. "Formal training", I. e., the holding of a regular weekly planning seminar where the ideas behind the practical day-to-day work could be explained and discussed.
- c. The production of an "Urban Project Manual" which explains the process of designing the project, illustrates options, and explains relevant techniques (4).

The project manual, being written in English, is a very sophisticated manner which was hard for the staff or the community members to understand or follow. The problem was how to transfer the experience of the foreign consultants to the local staff.

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1. Mohsen A Sidki, Proposal for Funding Urban Development Policies Initiatives. 1984, p. 14.
 2. Stephen C. Silcox A Comparative Evaluation of Three Upgrading Projects in Egypt. Helwan. Manshiet Nasser and Ismailia. 1985, p. 21
 3. Forbes Davidson, Upgrading In Ismailia: A Tale of Two Projects. 1984, p. 9.
 4. Forbes Davidson and Geoff Payne, Urban Project Manual. 1983.

Most of the project documents were prepared in the English language and few Arabic texts were available to the staff. It was essential to train first the trainers from the local staff in order to enable them to transfer the experience to the junior staff and the members of the community. As in Helwan, the role of the trainers and trainees ended with the end of the project. The upgrading concept is still applied on certain areas according to size of loans provided by foreign agencies to the Egyptian Government.

3.10.2. In Rural Areas

In rural housing, there is a need for a method of teaching the peasant the elements of practical building so that he can contribute usefully to the building of his village, but not to turn him from a productive farmer into a highly skilled but unemployable mason. He must, as Hassan Fathi says, acquire a manual ability to put up walls and stores on his own land, he will be in a position to help his neighbour with a bit of building and to keep his own house maintained, but he will always consider himself to be a farm worker, not a builder(1).

How to start the training programme, has been answered by Hassan Fathi as he says, "It is necessary if the village is to be built by the cooperative system, to start with the public buildings, which provide plenty of opportunities for training the villagers in building crafts that they can later apply to their own dwelling. By training the villagers on the public buildings, which will be erected first as the core of the village, we can make use of the architects and master craftsmen engaged by the building authority, and they can pass on their skills to the people. Then even if the authority cannot afford to build any private houses, the skills will have been implanted, the village center will be there, and the inhabitants will be able to go on for themselves". Training in this sense, as explained by Hassan

1 Hassan Fathi, Architecture for the Poor, 1973, p. 122.

Fathi, should be put in its national scale. It is not a local problem which could be part dealt with by private initiation. This could be of the national housing policy of the state.

The implementation of this training policy is explained by Hassan Fathi(1) when he says: "A cooperative building system can only work if a man's work can be recorded as a loan for the society and repaid in the form of a building. Now clearly the work of a skilled mason should be assessed more highly than that of an untrained labour. Again, if the community allows its masons to spend their valuable time instructing trainees, someone should pay for this time. Therefore a scheme of in-service training should provide the trainees to pay for their training by giving their newly acquired skill to the community at a lower rate than normal. The helpers, the young men and boys who do the unskilled work, are invited to watch the masons at work so that they can get an idea of the kind of work done. The training course is advertised both verbally and written, with detailed explanation of the stages of training, the skills to be taught, and the rate of payment appropriate to each stage. Those among the helpers who seem keen to learn and who show any interest at all are placed on the first step of a ladder leading to their final qualification as mason" (Fig. 3.38). There are five stages of training:

- a. Trainee: (the same as unskilled boy-labour).
- b. Apprentice.
- c. Assistant Mason.
- d. Mason.
- e. Master Mason (Mouallem).

The trained labour in the above categories had to be classified in numbers according to their role in the building process. A master mason might require the assistance of three masons with three assistants and nine apprentices using 18

1 Ibid, p. 123.

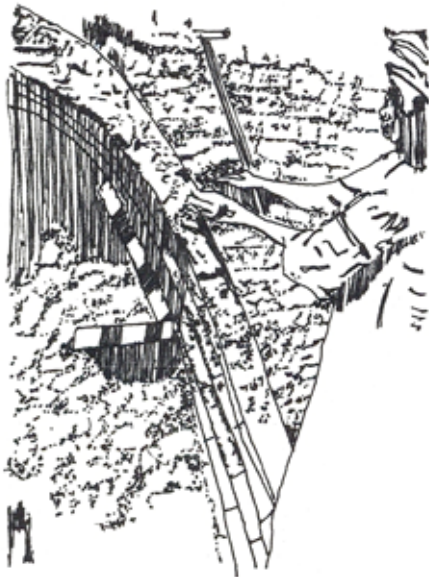


b. The first brick is laid against the end wall and then the second course is done.



a. The third course leans more sharply from the vertical and then more mud is laid against the last course.

Fig. 3.38: Steps of building a vault by one of the trainees. (Ref. 11).



c. The fifty courses are completed.

Trainees (boy-labour) to build a number of 25 houses. These figures might vary from one project to the other.

Hassan Fathi estimated these members from his experience in building the houses in Gurna. A similar pilot project could be established in order to acquire the reasonable numbers required for urban areas. In all cases any community participation project will require permanent teams of workers to build and maintain the project in future.

Training programmers vary according to the form of community participation in urban or rural areas. In rural areas a training schedule was proposed by Hassan Fathi as shown in table (10) - (1).

The training system proposed by Hassan Fathi is the result of personal experience in this field. He says that such a training system is a practical and popular way of producing the skilled workmen we need. It commends itself even to contractors, if the government wishes to make use of them, because the contractor's biggest worry is how to find the labour he needs in remote places. It would indeed save them money, for to induce a mason who lives in a town to go out to some distant village, the contractor has to pay him double the usual rate. Nevertheless, a project would be still cheaper if the government loaned equipments to the small local builders instead of engaging big contractors. As the small builders do the actual work so if they are given the chance of using the equipments, the big contractor's profit will be knocked off the bill? The local enterprise and prosperity is encouraged, and the training of local craftsmen is more easily put in hand. The training system as proposed by Hassan Fathi has social and cultural values as well as its economic values. Hand work has an Islamic value. In all

1 Ibid, p. 214.

Table 10: Training schedule for rural areas

Stage	Duration Week No	Class Lessons	Field Activities	Grade
A	Two Weeks 1-2	<ul style="list-style-type: none"> - To square a layout for a rectangular unit - To lay bricks for walls 1, 1.5, 2 bricks thick - To lay bricks for intersecting walls - To lay bricks for corners - Laying 200 bricks/hr 	Without mortar	Trainee Helper
Test				
B	Two Weeks 3-4		<ul style="list-style-type: none"> - Helping 2 masons by handing them the materials they need - Learning from watching them 	Trainee Helper.
	Two Weeks 5-6	<ul style="list-style-type: none"> - Laying bricks as before but by using mortar. - Build 0.5 brick partition - Build square columns 1, 1.5 and 2 bricks thick - Plaster 1, 1.5 bricks wide on walls. 		Trainee Helper
	Two Weeks 7-8		<ul style="list-style-type: none"> - Assist 2 master masons by filling the core of the walls they build 	Apprentice
C	One Week 9	<ul style="list-style-type: none"> - Build segmental arches 1.5 brick deep on walls 2 bricks thick. Span 0.9 m and 1.2 m. - Pointed arches 2, 2.5 meter span. 		Apprentice

Stage	Duration Week No	class Lessons	Field Activities	Grade
D	One Week 10			Assistant mason
	Two Weeks 11-12	<ul style="list-style-type: none"> - Build vaults without centering over a span of 1.5, 2.5 and 3 meters. - Build a Byzantine dome on pendentives of 3 m span. 	Field Practice	Assistant mason
	Two Weeks 13.14		<ul style="list-style-type: none"> - To build a vault 1.5 m. span at a rate of 1m/hr (152 bricks P.M.L.) - 2 m. vault at 60 cm/hr (204 bricks P.M.L.) - 2.5 m. vault at 30 cm/hr (272 bricks P.M.L.) - 3 m. vault at 20 cm/hr (304 bricks P.M.L.) 	Assistant mason
E	Two Weeks 15-16		<p>To build domes on squinches 3,4 meter in diameter.</p> <ul style="list-style-type: none"> - A vault on walls which are not parallel, with the large and 3 m. span. to build a staircase supported by vaults 	mason
	One Week 17		<ul style="list-style-type: none"> - To work with stone masons, learning to handle stones. 	Master mason

cases, any training system will be designed to use the appropriate building technology available in the area. The appropriate building technology has to dominate the building industry in the country as it is supposed to serve the low-income groups who present about 70% of the total population. This is how the community participation form can reflect its strategy on the planning process, the design method and the building technology all together in an integrated manner.

3.10.3. Vocational Activities

In Helwan upgrading project(1) a vocational training facility was constructed, equipped and adequately staffed to graduate up to 900 skilled craftsman per year in the building trades. In 1983, after setting up a vocational training program in the construction trades at the expanded social center in Arab Rashed, the upgrading area of the project, the Joint Housing Project and USAID decided that the project would construct and start operations of a number of smaller vocational training facilities in various upgrading areas rather than to build and staff large facility.

The vocational training program began when the Arab Rashed Community Center was completed in 1982. Table (11) shows the number of students trained in construction trade who have completed training since the facility began operations (2).

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- 1 Stephen C.Silox, A comparative Evaluation of three Upgrading Projects in Egypt. Helwan. Manshiet Nasser and Ismailia, 1985, p. 26.
 - 2 Joint Housing Projects Executive Agency. Ministry of Housing and Public Utilizes, Community Upgrading. An Urban Development Policy for Egypt, 1984, p. 22.

Table 11 *Number of students trained in construction trades*

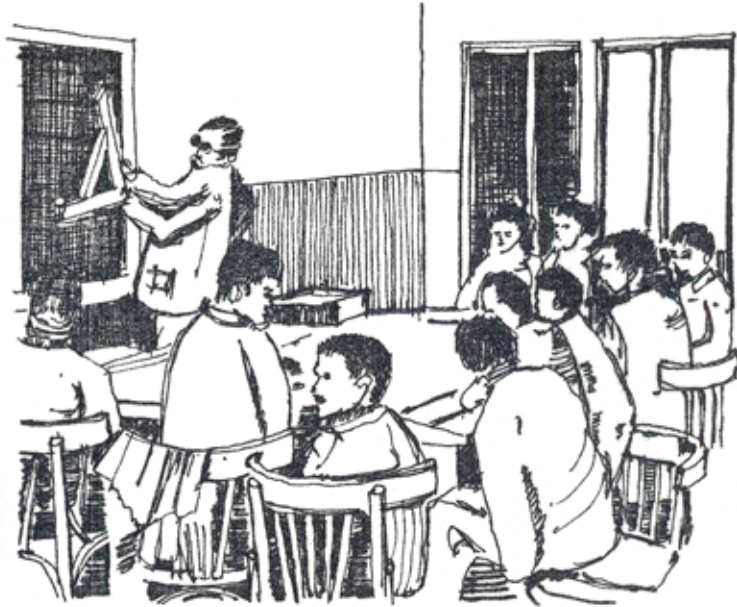
Year	Mason	Tile fixing	Plumbing	Electricity	Carpentry	Total
1982	21	20	11	18	-	70
1983	9	8	14	11	-	42
1984	14	13	15	16	5	63
Total	44	41	40	45	5	175

The vocational training center consists of five sections. Building, tiles, plumbing, electricity, carpenter (Fig. 3.39). Five sessions have been accomplished, each one took 4 months. There were 10 individuals in each session of each section. During the training period, each individual got 75 piasters per day. After passing all the tests he got a certificate approved by the American party. These trainees work for contracting companies and get high wages which might reach 10 LE/day (1).

In Manshiet Nasser upgrading project it was proposed to establish a vocational center to serve the training needs of the four major cooperative societies that operated locally. The center would accommodate 200 students and would offer courses in furniture and woodworking, leatherwork, welding and metal work, and production of handicrafts. Training programmers would also be implemented in the new sites and services projects in Alexandria and Assiut. In 1985, the vocational training center for artisans and handicrafts was under construction in Manshiet Nasser Main Settlement. It was not clear whether the vocational center was meant to serve the implementation of the project or it was part of the development programme aiming to create working opportunities for the young generation of the community. The establishment of local vocational centers had to be part of the project to support its continuity (2).

1 Al-Ahram Newspaper, No for Destruction Yes for Upgrading, 30-1, 1984, p. 3 (In Arabic).

2 Slephenc. silose. A comparative Evaluation of Three Upgrading Projects in Egypt. Helwan. Manshiet Nasser and Ismailia, 1985, p. 14.

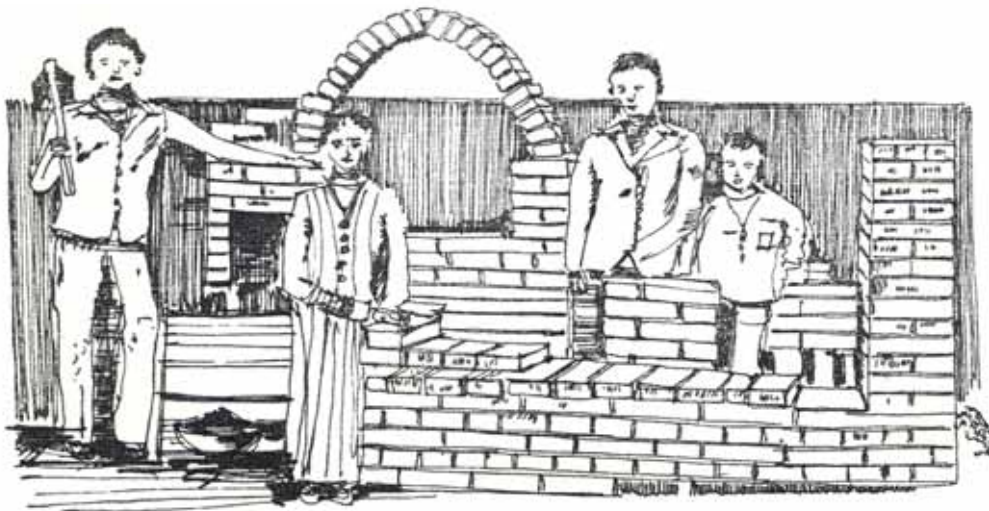


Electricity Section



Fig. 3.39 The vocational training center in Arab rashed (Ref. 62).

Tiles fixing section



Brick building section

3.11. Comment

Community participation in low-income housing projects in Egypt is still in its early stages. There are few examples of governmental projects where community participation is not fully exercised but they are just few attempts to encourage the community members to take part in their projects. These projects need to be assessed and evaluated in order to improve the performance of community participation as a national target.

After reviewing the attempts of the Egyptian experience in community participation, the following conclusions are reached:

Community participation and cooperation and self-reliance could be looked at as Islamic values inherited by the Egyptian people.

- 3.11.1. The housing problem in Egypt needs a non-conventional approach in order to solve it which could involve community participation. Therefore the present national housing policy has to be modified in order to consider community participation as an active part in the housing process, starting from decision making of design, planning, management, implementation and ending with maintenance.
- 3.11.2. To introduce community participation approach for housing projects, it requires appropriate building materials and building technology as well as appropriate design and planning concepts. Relevant to the existing condition in each region of the country.
- 3.11.3. The government has to be aware of the actual needs of the community, their habits and their way of life when planning its public housing project. Consequently community participation becomes essential because the people know better their needs and situation.

- 3.11.5. The role of the government is to support and assist community participation in order to ensure accessibility to essential resources such as: land, credit, building materials and the know-how. The government has to guide them without imposing special conditions.
- 3.11.6. The government has to encourage community participation in low income projects through home improvement loans, training programmers and vocational centers.
- 3.11.7. It is important to study the positive side of the informal housing which proves that community participation is possible in large housing projects. Their participation needs to be organized and encouraged.
- 3.11.8. The low income communities have the initiation, ability, experience and the talent to improve their housing situation, but with some limitation in the technical aspects. The latter factor has to get special consideration from the building research centers.

CHAPTER FOUR

DEVELOPMENT OF COMMUNITY PARTICIPATION IN EGYPT

- 4.1. The Need of Community Participation in Low Cost Housing
- 4.2. Community Participation through Cooperatives.
- 4.3. The Need of Appropriate Housing Design.
- 4.4. The Need of Appropriate Building Technology.
- 4.5. The Need of Training Modules for Community Participation.

4.1. The Need of community Participation in Low Cost Housing

The Egyptian five-year development plan for 1978-82 carefully projected the needs of the country up to the year 2000. The whole area of the country is thought of simultaneously in this process. The same approach is even more comprehensive and detailed in a number of publications by the Ministry of Housing and Reconstruction (1). Settlement policies, according to these documents, are based on a total population of 40 million people in 1978 increasing to 66 million by the year 2000. The respective urban percentages are projected as 44% and 50%. These projections assume the use of some measures for checking the fast increase of the population and rural-to-urban migration, and accept temporary and permanent migration abroad. The central challenge to the country's settlement policies is the proper provision for the increase of 24 million people by the end of the century, an increase of over half the current population, who are already over-crowding the land.

The policy classifies the various parts of the country into four categories according to their attitude to future expansion. The first category includes the overcrowded areas where decongestion (rather than expansion) seems to be the only possible option. Cairo is the obvious example, plans for decongestion of Cairo, envisage the setting up of industrial cities around the capital.

The second category of regions according to the attitude to their future expansion consists of the saturated parts of the country that cannot accept any more expansion or congestion e.g., the provinces of Menofia and Gharbeia. The third category is formed of the normal areas where existing densities make it possible to accept only a normal increase in the population e.g., Alexandria, Damietta, Fayoum and the Canal Zone.

1 Omer M.A. El Agraa and Adel Mustafa Ahmad, Human Settlements in Arab Countries, 1978, p. 67.

The fourth category contains the virgin areas that possess promising potentiality but are hardly populated at present, e.g., areas around Marsa-Matrouh, the Red sea, the New Valley, and Sinai. Present population densities in most of these locations range between 0.2 and 0.4 persons/sq. km. The plan faces the development of these areas by absorbing 17 million people by the year 2000 at an average density of about 150 persons/sq. km, as follows (the remaining increase of 9 million people by the year 2000 is presumably to be absorbed in the remaining normal areas): 33 000 km² by the Red Sea for 3.5 million people, 30 000 km² around Marsa-Matrouh for 3 million people, 60 000 km² in the New valley for 6.5 million people, 7000 km² in Sinai for 1.5 million people and 20 000 km² in Canal zone for 2 million people(1).

The human settlement policy looks impressive on paper. Yet, there is considerable suspicion concerning its implementation. The high cost of the plan coupled with the economic difficulties of the country and the large military expenditure are obvious handicaps. The results of lack of implementation in the recent past are clear and different solutions in future cannot be tolerated at all.

Nothing much is going to be done for improving human settlement situation unless there is some changes in the recent policy, and in the government organizations. This takes quite a long time, so it is better to look for another approach to solve this problem in which the private sector is given a place to give a hand because the government can't afford doing anything alone. It is better to put programmers for individual families and communities to improve their situation and build their houses without waiting for the Government to take action. And in this respect it is important to involve the community and/or its members in putting their programmers and give them the chance to make use of all resources they have and to invest them all.

1 Ibid.

It may be said that Egypt has drawn up an apparently good policy that can hardly be improved on in its handling of the general distribution of the population, major economic activities and major items of infrastructure, but very special efforts indeed are needed in order to implement this policy.

There could be some difficulties which could face the plans of distributing the population all over Egypt. It was noticed that all those areas in which the population is going to settle in, are quite far from the Nile valley, and there could be some difficulties in those areas in terms of labour, building material, contractors and money needed if the government is going to use its traditional way of building houses.

It would be difficult to find the labour needed for construction in those areas and it would be expensive to bring them from the valley where they could be easily found unless they make use of local people and immigrants by training them in the construction field. The same could be said in transporting building materials and its building techniques from far away unless they obtain or discover local building materials and search for the suitable building technique to use. Also it would be risky and expensive for contractors to move and work in those areas while local small contractors could make better if they were organized and well used. There could be difficulties and shortage in money needed to be invested in those areas, and the government cannot afford it alone, so there could be a place for money invested by private sector and by members of the community who are going to live there.

It was seen that community participation in governmental projects in Egypt came into reality through governmental upgrading project. The government housing policy for low income groups was based on building complete housing units, with high subsidies, and selling or renting them to low income people (see 3.6).

This housing policy was from the period after the Egyptian revolution 1952 until the middle of the seventies, where the governmental housing policy changed and began to realize the importance of housing upgrading projects. The Ministry of Housing implemented few upgrading projects as examples to be examined and then evaluated to see whether they will fail or succeed (see 3.4).

The nature of housing upgrading projects deals directly with the community and it is impossible to exclude the part of inputs done by the community. It is a chance for the community to express itself in a better way, and the government cannot deny that role of the community any more in its projects.

But as the Egyptian government is making its new steps in this new approach there were some suspicions and confusion of the actual role of the community. Some minds in the governmental system were not willing to change their previous policy. So the government began its new approach slowly, carefully and without taking great risk. This was expected because it is the nature of any new approach.

The Egyptian Ministry for Housing began some upgrading projects in big cities and also sites and services projects. All of these projects with different degrees of community involvement in its steps. But this is just the beginning and farther steps have to be taken in the direction of involving the community more and more in all low-income housing projects. It will take some time to reach the concept of full community participation in housing projects, beginning from the decision making to the maintenance of the project.

For the approach of community participation in housing projects to be optimum, it includes the participation of the community directly in decision making and in putting policies. It would be better to encourage community participation on the local level and not on the regional Level.

The present system of national, government, town and village levels of involvement may be improved if the last three levels are involved more actively than at present in the formulation of policies. This may be done by allowing the said levels to have decentralized institutions that can work out their own plans, combining the national objectives of housing projects with their first-hand knowledge of the realities of the locality. The community through its members must have a chance in decision making of policies and plans related to their situation (see 2.1.4).

Aims and objectives of community participation in low-income housing projects in Egypt could be summarized as follows:

- a. To facilitate speedy implementation and to reduce costs, by informing the beneficiaries of the project, gaining their support and mobilizing the necessary individual labour and financial resources.
- b. To improve the collection of service charges and loan repayments.
- c. To increase satisfaction with the results of the project.
- d. To develop a sense of responsibility for the maintenance of services and facilities provided by the project.
- e. To strengthen self-reliance and provide a basis for continued upgrading and developing arising from community initiative. One of the primary purposes of participation is commonly seen as replacing attitude of dependency with a sense of control over one's own life and environment and a spirit of self-reliance.
- f. To involve local residents in local level decision making. This may be interpreted either as taking into account resident's stated needs and priorities without directly involving them in decision making, or as giving residents the opportunity to formulate plans, choose between alternatives and take decision. This could be done through establishing co-operative societies within the community.

4.2. community participation Through Co-operatives

Community participation could be achieved through cooperative societies. This co-operative society acts as an intermediate organization between the project beneficiaries and the governmental administrations and it organizes the relationship between them. Members of the co-operative society are the project beneficiaries themselves through elected representatives. This approach was presented to a competition of Housing low income families in EI-Obour new town (1).

4.2.1. The administration structure

The proposed administrative structure for the project depends upon the participation and mutual interrelation between the following parties (Fig. 4.1):

- a. The Government: Through the Ministry of Urbanization, or any governmental, public, or official agencies which are directly related to the project and its developments.
- b. Beneficiaries: These are the persons living in the city and utilizing its residential units, whether they are from the working classes, government officials, or public officials.
- c. The co-operative society: Which incorporates the group of beneficiaries, specially the working classes.

The Government is responsible for supplying the co-operative society with the following: legalizing the existence of the society, giving access to land, subsidized materials and building equipments, also giving the society supervision, technical assistance and financing grants and long term loans. The co-operative society is obliged, regarding the government, to keep to the plans according to the criteria, regulations, designs and conditions, also

1 Dr. Hazem Mohamed Ibrahim, A Study Upon the Provision of Housing For Low Income Groups in The Muslim Society, Housing In The Islamic City. July 1984, p. 107.

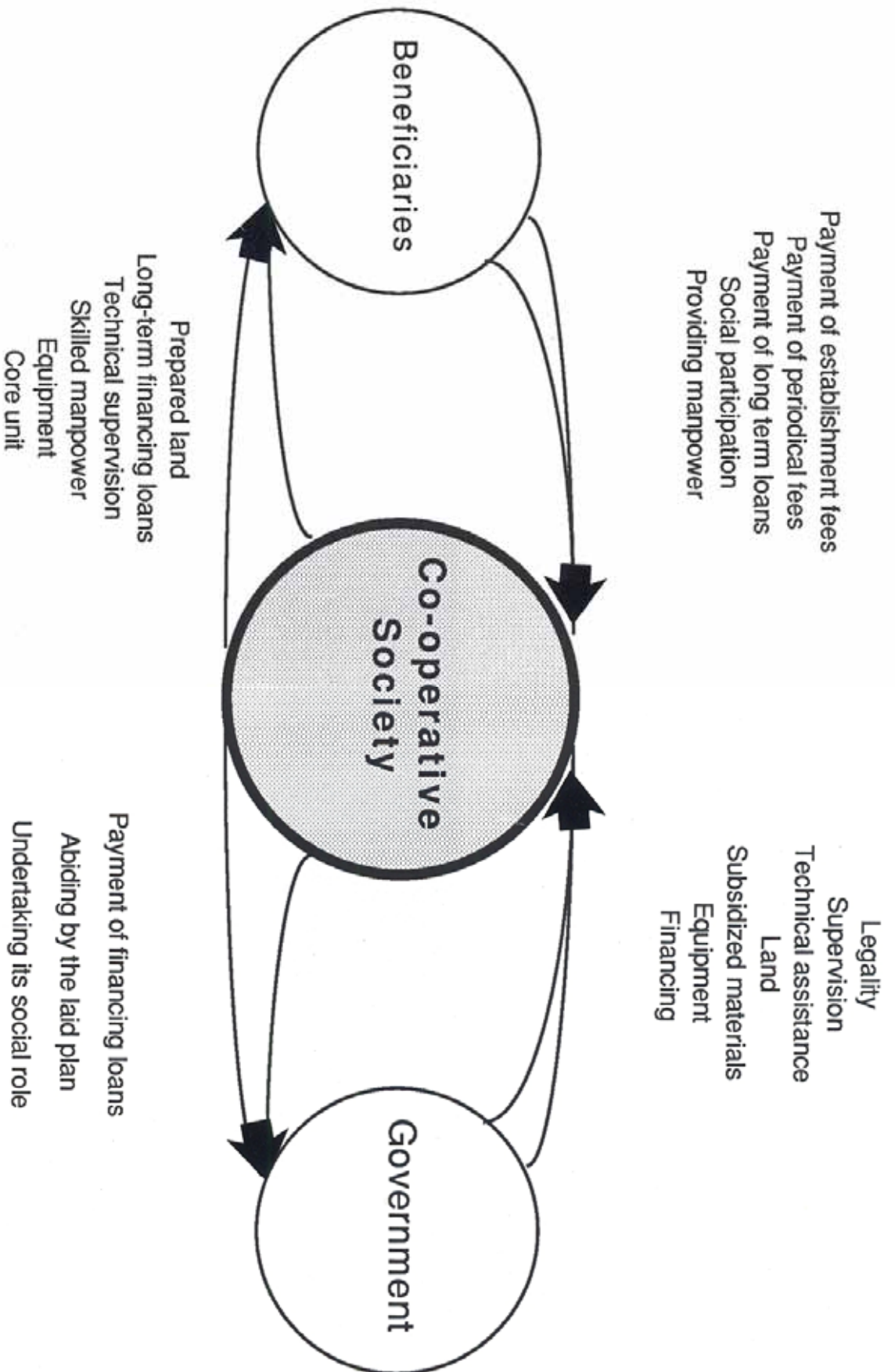


Fig. 4.1: Responsibilities and mutual interrelation between the different

Repayment of financing loans and undertaking the social role defined for it.

On the other hand the co-operative society is responsible for supplying the beneficiaries with the following: the prepared land with the care unit, technical supervision and assistance, trained manpower, machines, subsidized materials and long term loans. While the beneficiaries are obliged regarding of the society to pay the establishment fee, the periodical fees and repaying the long term loans, also providing manpower and social participation in the project.

The basic concept in the proposed co-operative society is transferring from a mere service society depending on financing and loans from the government and official directions, into a separate productive identity. Thus the society would be a productive social unit depending upon self financing. Hence, it is clear that the establishment of the co-operative society is the care of the project in addition to its being an investment and a mean of production.

The co-operative society carries out its various activities through the following channels (1) (Fig. 4.2):

- a. Services: Direct services to enable the beneficiaries to build a suitable residential unit, according to the laid plan.
- b. Production: The co-operation society practices production in order to supply the community with its needs of manufactured materials, i.e., bricks, tiles, stairs, in addition to trained manpower needed for the building process.
- c. Investment: It results from utilizing the excess in products and trained manpower to provide others with their

1 Center for Planning and Architectural Studies, Report on: El Obour. Competition for Design of Residential Area and Housing Affordability by Low Income Families, 1984, p. 3.

needs, in return for the actual costs and a small interest.

The co-operative society is financed through five different resources which are (Fig. 4.3):

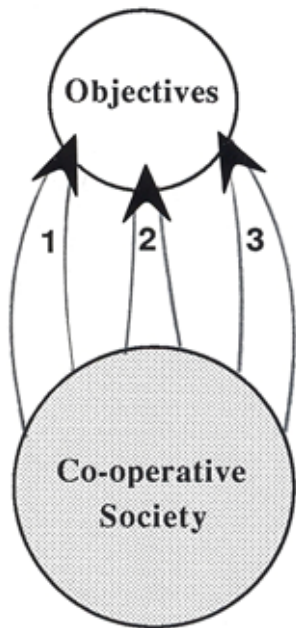
- a. Government loans which are presented in the form of subsidized materials and installations, necessary machines, together with technical supervision, 75% of the skilled workmanship, and 50% of the ordinary workmanship.
- b. Establishment fee paid by the beneficiaries only once, as L.E. 100 for each dweller/unit.
- c. Membership fee paid monthly by the beneficiaries as L.E. 0.50 for each dweller/unit.
- d. Indirect financing, which represents half the workmanship, is paid by the beneficiaries.
- e. Direct financing from revenues of investing the machines used in the project in producing materials like bricks, tiles, and stairs and marketing them.

4.2.2. Manpower Policy

The basic concept in providing manpower depends on the inhabitants of the area, especially the working classes which represent 70% of the total number of inhabitants. The advantages of depending on the inhabitants as a source of manpower is to decrease the percentage of workmanship in the total cost of the residential unit, and to intensify the relation between the inhabitants and their residential neighborhoods (1)

The participation of the inhabitants in building the residential units is a basic necessity for the beneficiary to own a unit in the project. The participation could be either by working as skilled workers or as untrained manpower, or by working in administrative duties, supervision, etc.

1 Ibid, p. 7.



The cooperative society accomplishes its objectives through three channels:

1. Services
2. Production
3. Investment

Fig. 4.2: The nature of the co-operative society

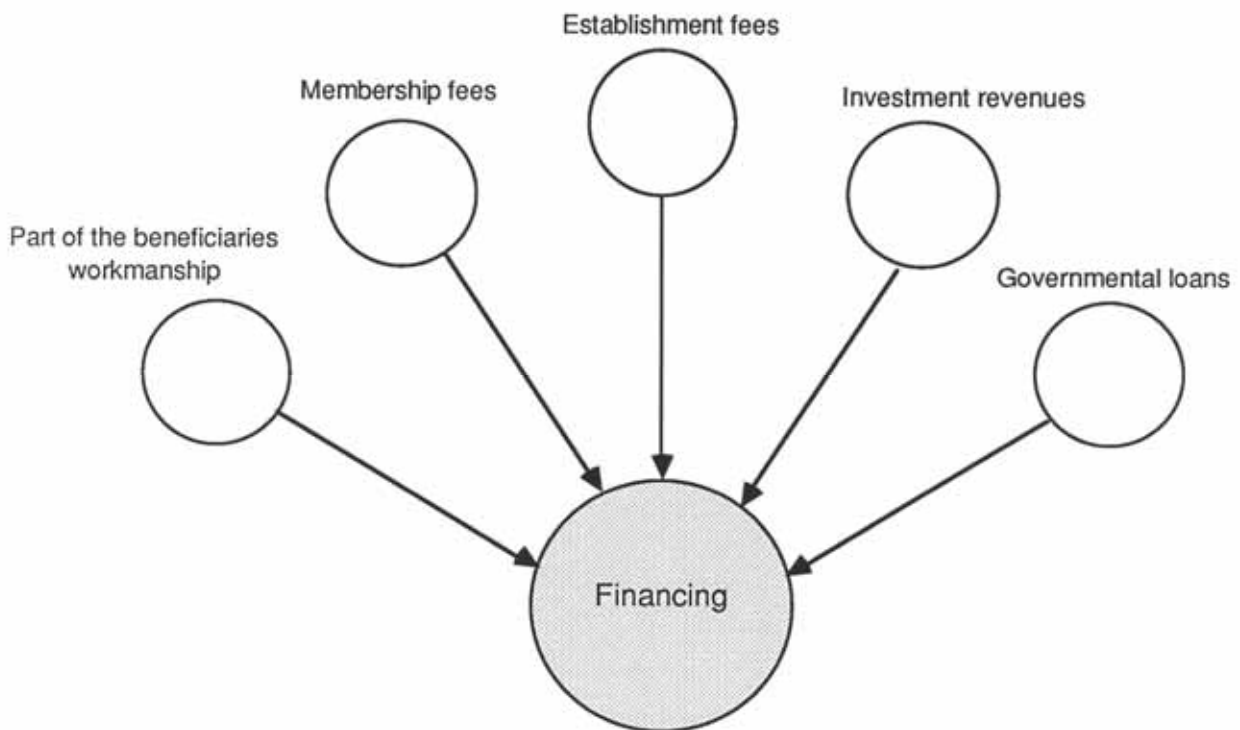


Fig. 4.3: Sources financing the co-operative society

The important thing is that each person should give according to his personal ability.

The personal participation of the inhabitants necessitates the organization of working hours, without interfering with the economical activities of the families. Hence, work could be organized in the form of working camps, especially during laying the foundations; furthermore work could be conducted by night. Weekends and vacations with its different categories and school vacations could be utilized in organizing the needed manpower (1).

If the beneficiary is untrained for the building work he has to provide an adult person to be trained for 30 days in the year with a minimum of two days a week. He will be trained for one of the trades related to the building operation. After the training period the society could make use of his abilities in the execution work in return for certain wages according to the salaries scale put down by the society. In this case half of the daily wage is paid in cash, while the other half is added to the credit of the beneficiary to pay for the cost of the residential unit.

In case if the beneficiary is a skilled worker, he could work for the society without any training, in return for a daily wage. Half of the salary will be paid in cash while the other half is added to his credit to pay for the cost of the residential unit.

4.2.3. Housing Types

Housing in the project is composed of a group of types on pieces of land which varies between 6 x 12 m, 6 x 15 m, 7.5 x 15 m and 9 x 18 m. The architectural design of these types' permits staged execution of the unit (Fig. 4.4). It is well understood that the first stage of the unit, core house, should be a complete stage, giving the minimum needs of a

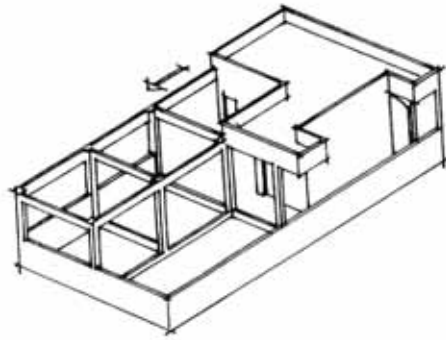
1 Center for Planning and Architectural Studies. Article on: Planning New Settlements for Low Income Families, Alam Albenaa Magazine, 44th Issue, April, 1984, p. 14.

Separate residential unit. The architectural design gives the chance for utilizing (investing) the personal help of the inhabitant in completing the executional work of his residential unit, if his time and financial conditions permit such a thing. This helps in lowering the initial costs of building the core unit, and establishing a strong relation between the dweller and his house (1) (Fig. 4.6).

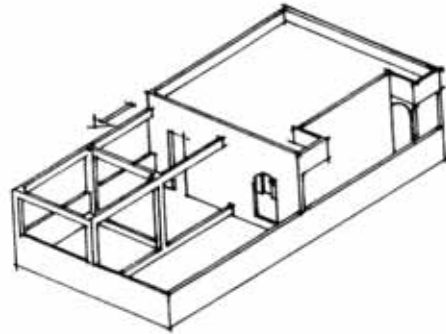
The components of the core unit, which is the initial phase of the house, represent the minimum needs of a residential unit and include (Fig. 4.5):

- a. **Land:** A suitable piece of land for establishing a house with the possibility of raising two floors in the future. The area of the piece of land varies according to the income level with a minimum of 72 m² (6 x 12 m).
- b. **Structural skeleton:** To ensure the safety of the building, it is important to provide the complete structural skeleton in the core house, since it is quite risky to leave it for the beneficiary to complete the structural skeleton on his own.
- c. **Closed space:** The core unit includes a closed space composed of a room, bathroom and kitchenette. This closed space lies on the street.
- d. **Opened space:** It includes the opened court and land for future expansion.
- e. **Utilities:** The core unit is provided with complete utilities, including external and internal utilities which include preparing the bathroom with a French toilet, a lavatory basin, a shower and a tap, in addition to supplying the kitchen with a sink.

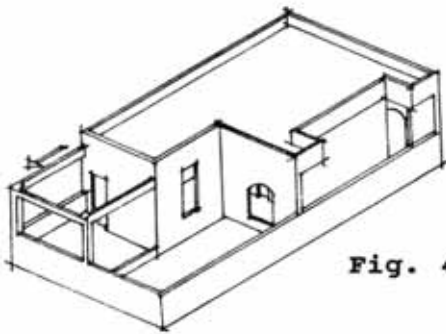
1 Ibid, p. 16.



Initial stage



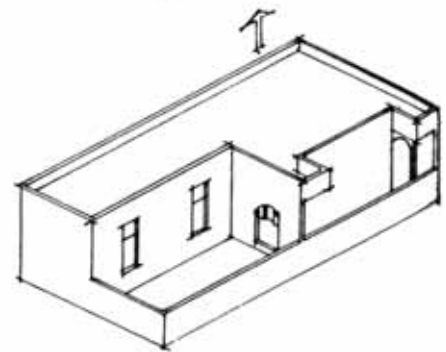
Second stage



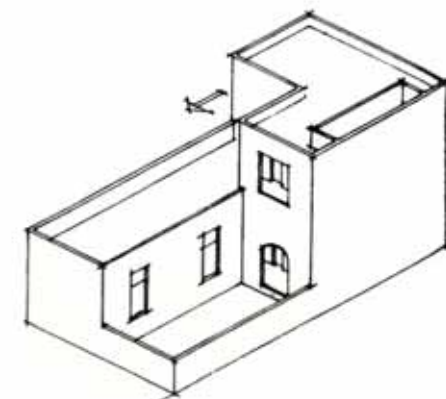
Third stage

Fig. 4.4

The architectural design permits staged execution of the unit (Ref. 54).



Fourth stage



Fifth stage

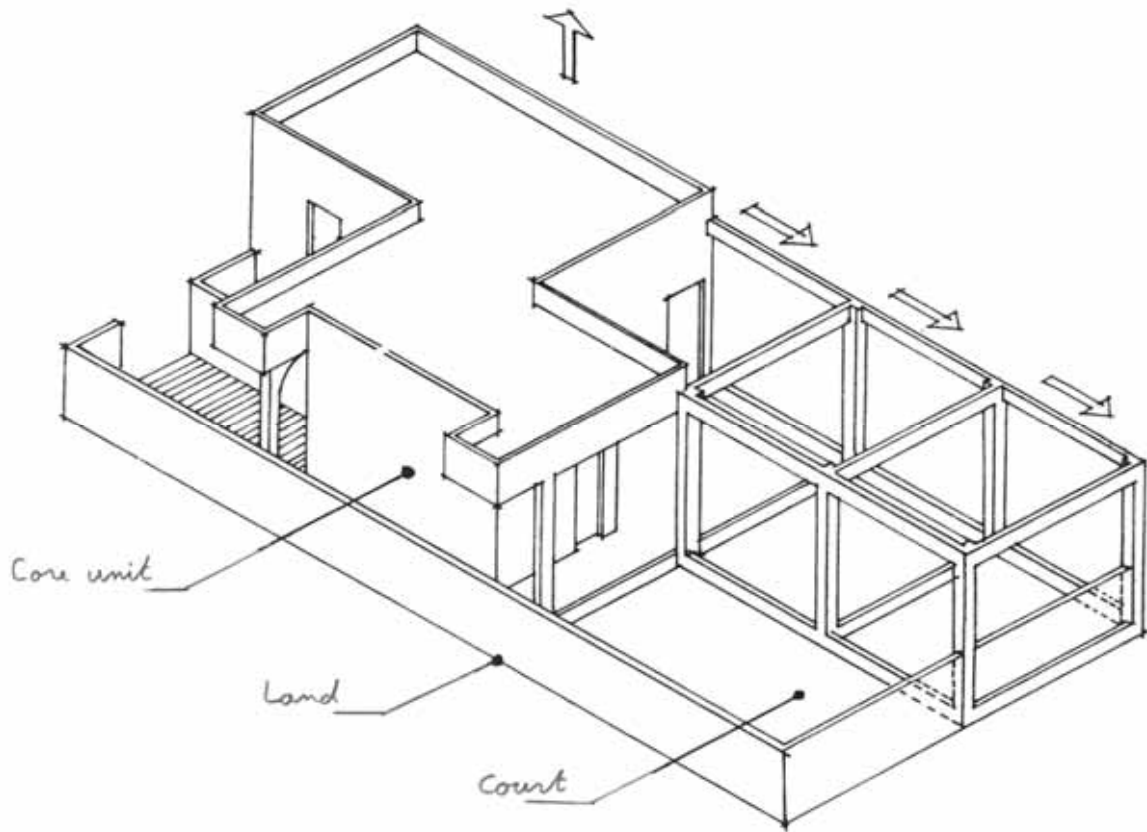


Fig. 4.5 Components of the core unit (Ref. 54).

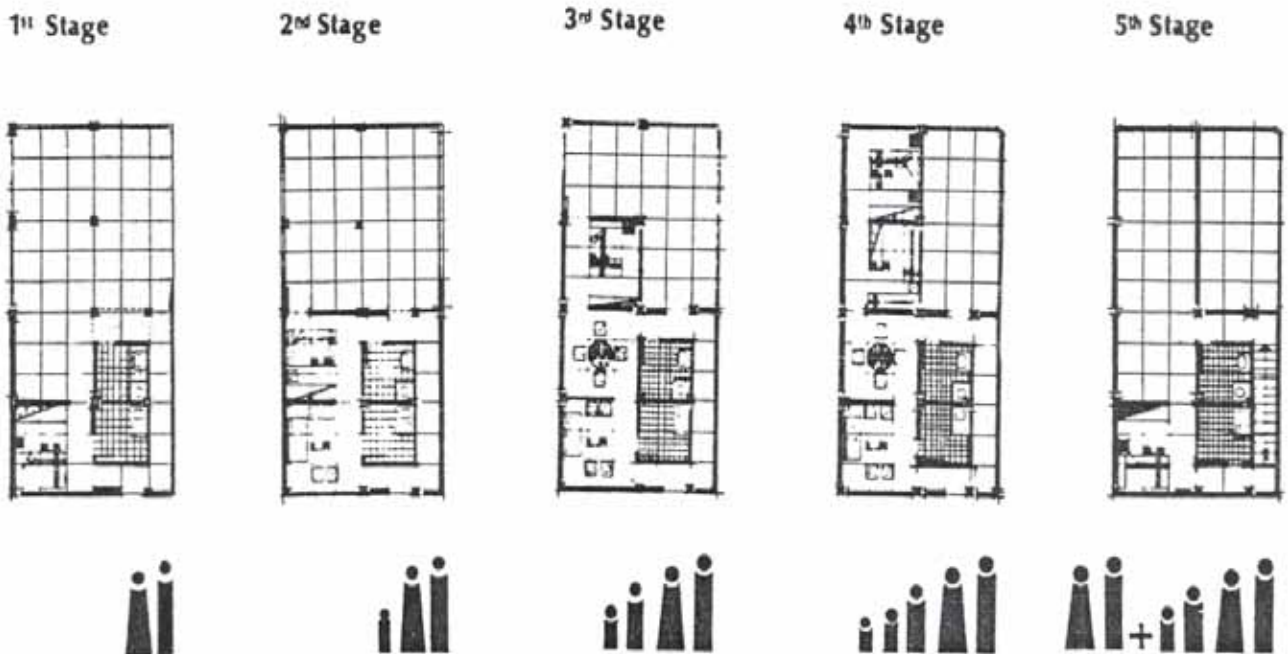


Fig. 4.6 The execution stages are done according to the inhabitants' needs and ability (Ref. 54).

f. Finishes: Internal; Floor, ordinary concrete raft. Ceiling, fairface concrete. Walls, facing cement or clay bricks. Bathroom, ordinary concrete raft.

External; Rough plaster for the facade looking on the street.

4.2.4. Methods of Cost Reduction

In a low income housing projects, methods of cost reduction are important. Cost reduction should not be achieved through decreasing living spaces, or the use of unsuitable materials, ... etc. because this ends up with a project which is incapable of satisfying the inhabitant needs and that will need early repair and maintenance.

The costs could be reduced by using simple forms and collection of service elements together and the even distribution of sanitary installations. Cost reduction could be achieved as well through the omission of many unnecessary building and finishing operations e.g., the use of apparent building materials, omitting the use of plaster and paint as well as the omission of internal walls and using the internal furniture for dividing spaces instead, or the use of concrete flooring instead of floor tiles. Methods of cost reduction include the increase of utilization coefficients of the affordable vertical and horizontal spaces through best distribution of doors, windows and internal furniture. The structural operations' costs could be reduced through the use of standard units of columns, beams, windows, doors, staircases and inspection rooms.

4.3. The Need of Appropriate Housing Design

Choosing the appropriate housing design requires detailed studies providing information on existing housing. These studies should indicate the smallest and cheapest form of building capable of meeting the needs of an average size household under the prevailing local conditions. This will provide essential information of the financial estimation for building. Reference should also be made to the needs of the community (target population). This should indicate the number of rooms and the area of private space which household considers necessary.

In addition to this information, design tests should be carried out to identify appropriate building options. As with the design tests for plot size and shapes, these should be based upon trends in housing design and construction so that future as well as present needs can be met. Appropriate building design has to be durable, economic and within community affordability. Nevertheless, appropriate design has to be suitable to appropriate building technology.

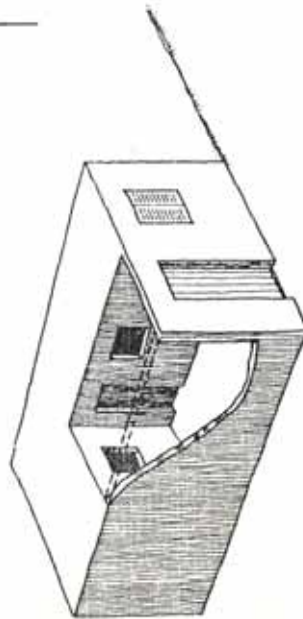
Options for the way in which low cost housing are to be provided can then be identified. Basically, there are three types, the characteristics, advantages and disadvantages which are outlined in Table (12). A major factor in assessing these options is that while some form of government action is necessary for the provision of land and infrastructure, the building of the house is one element which households can manage themselves. International experience of settlements in which households have been responsible for building their own homes shows clearly that, in most cases, there is a greater chance of matching needs and resources than is possible with government built housing(1).

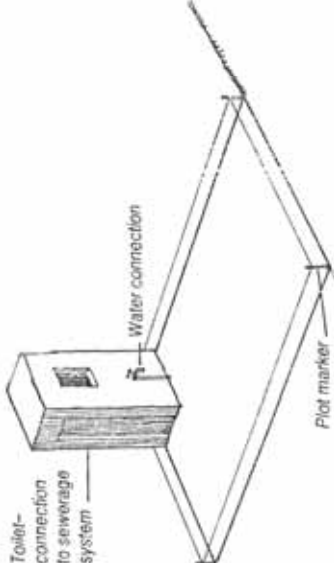
The first step in selecting favorable options will be to determine the type and minimum size of superstructure which

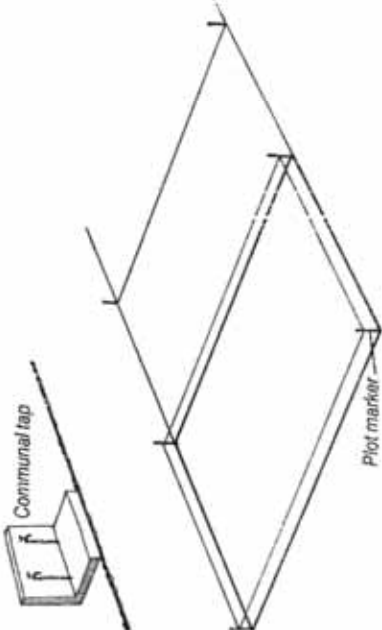
1 Forbes Davidson and Geoff Payne, Urban Projects Manual, 1983, p. 45.

Table 12: Types of Housing Provision

Type of Provision	Characteristics	Advantages	Disadvantages
1. Fully pre-built by implementing agency (contractor)	A complete dwelling including all construction work to public utilities and ready for immediate occupation	<ul style="list-style-type: none"> * Agency can control design constructions cost and even use of dwelling to ensure full conformity with all official standards * Immediate occupation possible. 	<p>Extremely high cost especially related to income level of target population. This means the low income population cannot be accommodated without a major subsidy.</p> <ul style="list-style-type: none"> * Necessarily high rents lead to higher default in payments. * Reduced public funds for other sections of the population or for the provision of public utilities and facilities. * Inflexibility in meeting the varied needs of household. * Discourages households from using their dwelling as a means of generating additional income by constructing additional rooms for commercial or rental use.



Type of Provision	Characteristics	Advantages	Disadvantages
<p>2. Partly rebuilt by implementing agency (contractor contribution)</p>	<p>Various possible methods include the pre-built provision of a service containing connections to public utilities a sanitary core unit or columns and roof.</p>	<ul style="list-style-type: none"> * Enables control to be exercised over the main elements of super-structures such as the location of on-plot utilities * Facilitates immediate occupation of the plot. * Reduced cost in relation to full pre-built provision * Increased flexibility compared to fully built house. * Enables household to invest in the completion of his dwelling, according to his needs and his ability 	<ul style="list-style-type: none"> * Reduces incentives for occupants to invest in improvements or maintenance of their dwelling and consequently the increase burden placed upon the project agency. * Usually eliminates small local builders and fails to generate local employments. * Possible high cost relative to income levels of the target population.
 <p>The diagram shows a rectangular box representing a sanitary core unit. A line labeled 'Toilet-connection to sewerage system' extends from the bottom left of the box. Another line labeled 'Water connection' extends from the top right of the box. The box is supported by two diagonal lines that meet at a point labeled 'Plot marker'.</p>	<ul style="list-style-type: none"> * Reduces scope for employment of builders. * Increases level of compulsory payments by occupants compared to unbuilt plot. * Reduces design options for final dwelling. 		

Type of Provision	Characteristics	Advantages	Disadvantages
<p>3. Completely self built by plot occupants</p>  <p>The diagram illustrates a self-built housing unit. On the left, a small structure is shown with a 'Communal tap' labeled 'f'. To the right, a larger diamond-shaped plot is shown with a 'Plot marker' at one of its vertices. The plot is divided into sections by lines, suggesting the layout of the housing units.</p>	<p>The complete dwelling is built by the users either during or before occupation of the plot.</p>	<ul style="list-style-type: none"> * Given maximum control over finance, design use of dwelling to its occupants thereby increasing user satisfaction. * Generally much cheaper than other options * Minimises compulsory repayments by occupants * Reduced cost to agency leading to increased opportunity for replicating project. * Increased scope for using housing as a means of generating additional income and rental accommodation * Creates maximum local employment. * Enables construction to be phased relative to availability of money 	<ul style="list-style-type: none"> * Immediate occupation is difficult and depends upon climatic conditions and location. * Depends upon availability of local labour and materials. * Not hygienic because of lack of water and sanitary core. * Reduces control over housing design and housing standards. * Could create slum area.

Households regard as necessary, at least in the short term. The next step is to determine the amounts which household can afford for building, based upon the proportions of total housing expenditure allocated. This total can then be divided by the unit cost of the cheapest form of construction suitable to meet short needs, to obtain a range of superstructure options which household can afford.

Where a choice has to be made between the levels of provision for plots, utilities and superstructure, it is important to note that an initially modest superstructure (core house) provision is normal in most low income housing developments. This is because households rarely have adequate capital to finance high quality building in a single phase. A modest initial structure has the advantage of not absorbing scarce capital resources and thereby over-burdening a household. It also enables improvements and extensions to be carried out when savings are available to finance them. Examples could be found in Helwan New Community project (Fig. 4.7), Ismailia Demonstration Project, Sadat City New Town (Fig. 4.8) and in several other projects.

There are two kinds of the modest initial structure, according to their way of extension, core house and shell house. In case of core house, the initial modest superstructure consists of a plot provided with a toilet, kitchen (wet core) and sometimes one room as a shelter (1). In other cases, columns and/or beams for future extension could be provided. It is the household responsibility to extend his core house according to his needs and his ability. The house is extended horizontally first and then vertically in later stages to add extra rooms. So, the design of the core house has to be flexible in extension and takes into consideration the possibility of vertical expansion of the habitable area as a separate part (i.e., separate dwelling per floor) which

1 Reinhard Goethert and Dr. Zakia shafie, Housing for the Low Income and Informal Sector, The Housing and Construction Industry in Egypt. Interim Report Working Papers, 1979, p. 8.

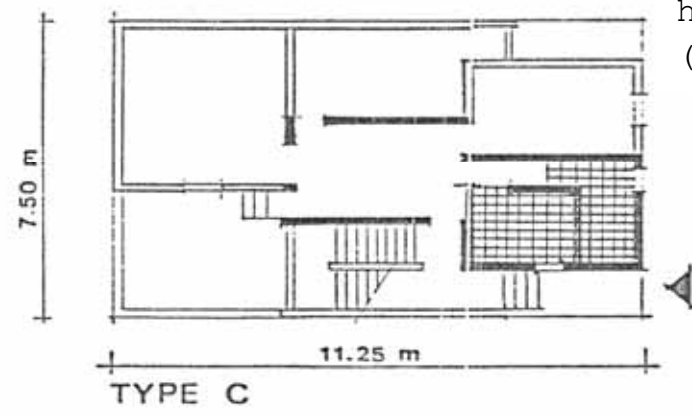
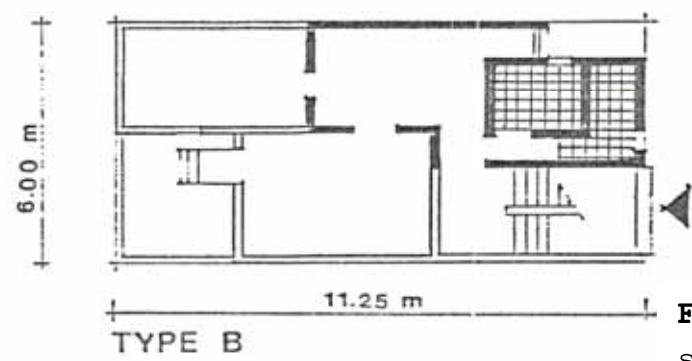
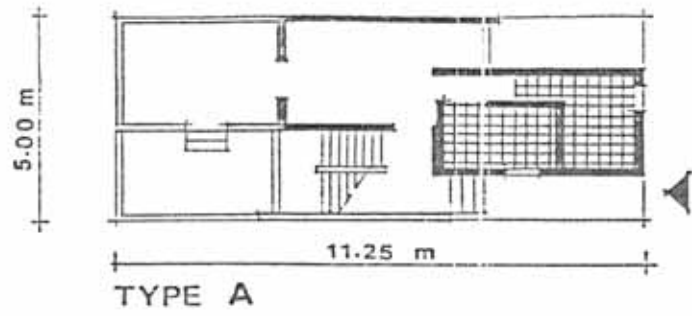
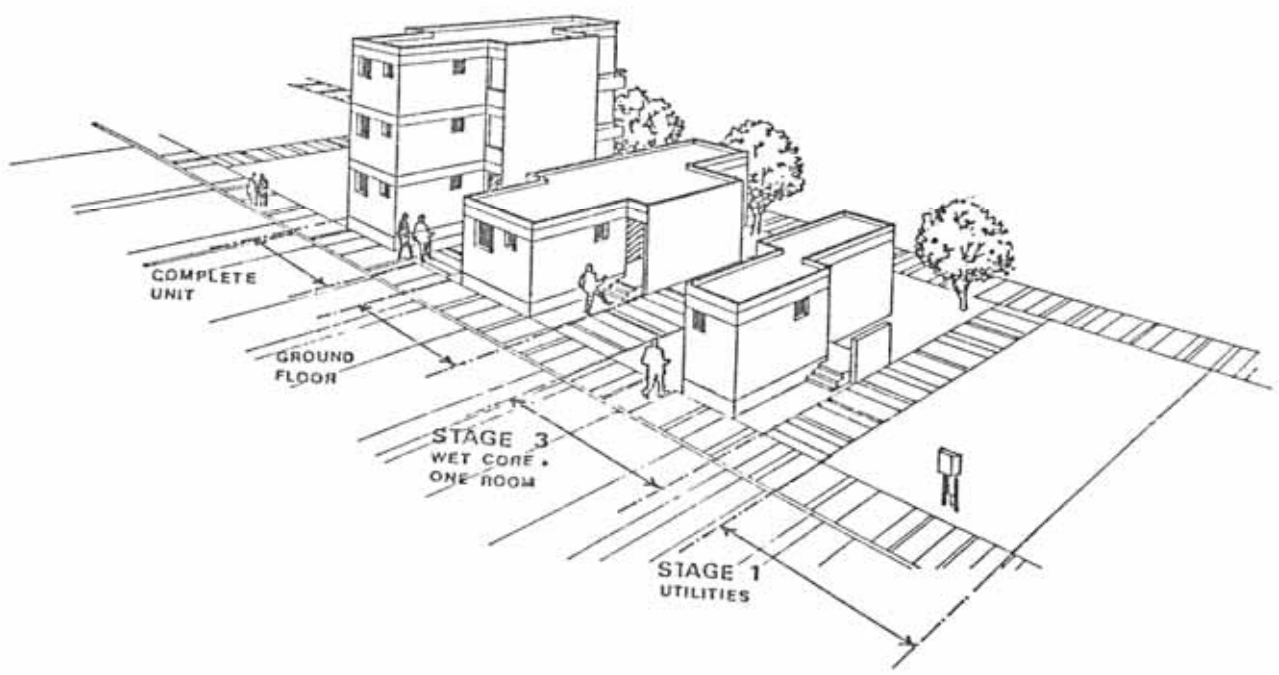


Fig. 4.7 Types and building sequence of the core unit in helwan new community project (Ref. 17).



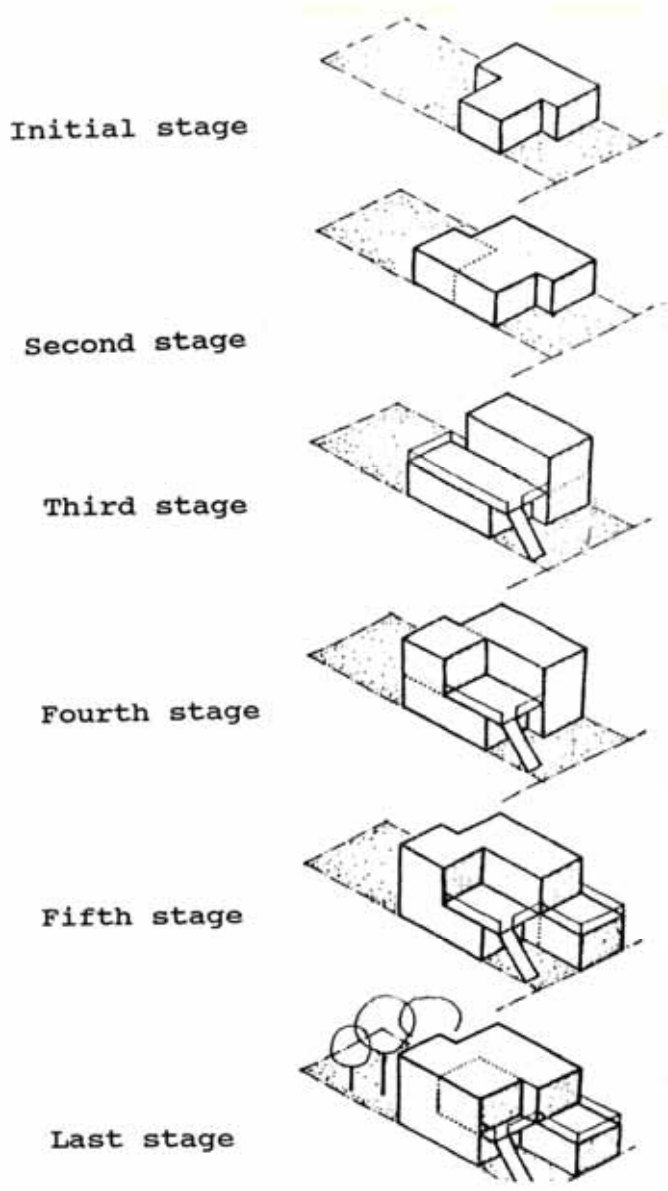
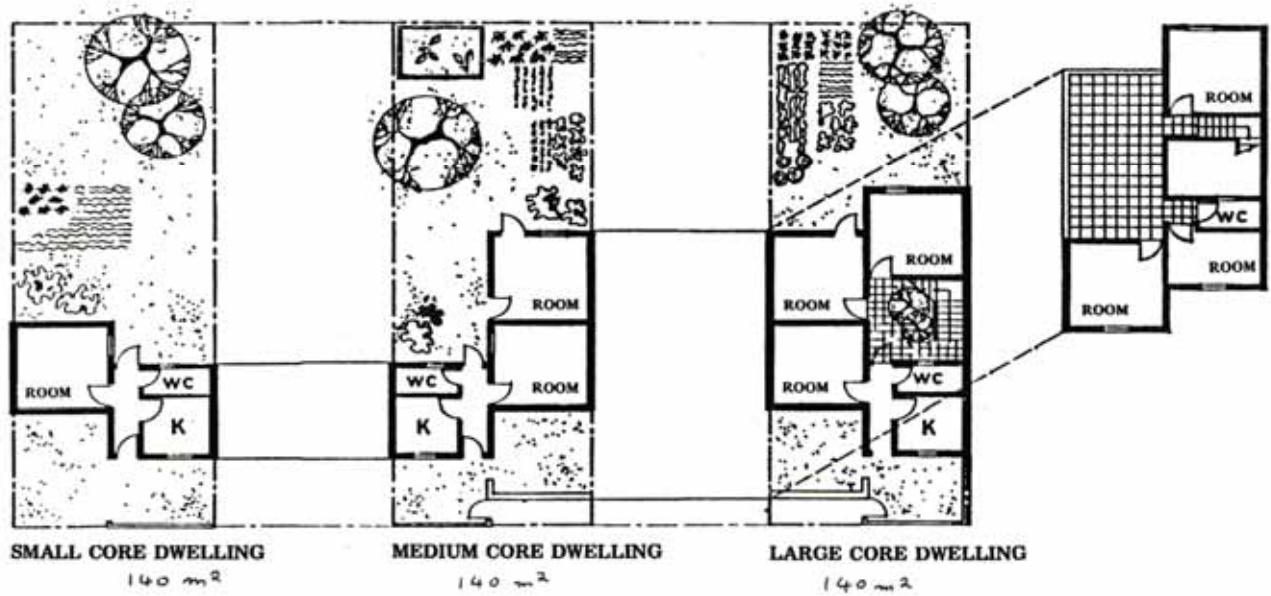


Fig. 4.8 Possible expansion of the core unit in Sadat city new town (Ref. 17).



Is much more economical in the future. This is assured by the proper placing of the staircase outside the dwelling unit on the ground floor. The household could extend his core house through modes of self-help or/and mutual-help, in manufacturing and constructing building components for walls and ceiling.

In case of shell house(1), the initial modest superstructure consists of a habitable area, an apartment, provided with water, sewage and main electricity connections, all main structural elements and a roof (Fig. 4.9). Outer walls which surround the habitable area are also provided with its openings, but no inner partitions or flooring and ceiling finishing are provided. It is the household responsibility to improve and to complete his own house according to his own needs. He has to plan and to subdivide the total habitable area into rooms suitable to his activities. This approach requires appropriate building technology which could facilitate individual participation in completing their own house. Prefabricated units with modular coordination between them are recommended (2). Partitions could be prefabricated from wooden or gypsum or any light weight components, with easy junctions between them and with the floor and ceiling. Partition walls are movable and suitable for various designs and positions, also they do not need plastering, and just painting could be required. Moreover, doors and window units could, also, be prefabricated in standard dimensions. As mentioned before, housing spaces have to be designed according to its function and suitable to occupant's activities. It has to function as multi-use area, e.g., living room at day time and a bedroom at night time. This requires special multi-purpose pieces of furniture which is mobile and durable, e.g., sofa could be changed to a bed,

1 Dr. Abdelbaki M. Ibrahim. Low Income Housing. How Can the Household Complete His House by Himself? Alam Albenaa Magazine. 2nd Issue, September, 1980, p. 30. (In Arabic).

2 United Nations Technical Co-operation Department of Economic and Social Affairs, Modular Co ordination in Housing. June, 1966.

Using wardrobe instead of partition walls between rooms. This approach requires a building material store from which household could find and buy all building materials he needs, partition units, window and door units, paints, tools and parts of furniture which he can put them together through modes of: Do it yourself. Training and technical assistance could be provided to household.

This means that appropriate housing designs suitable for community participation have to be supported by appropriate building industry as well as appropriate building technology. The three parts of low income housing have to be worked together in an integrated manner.

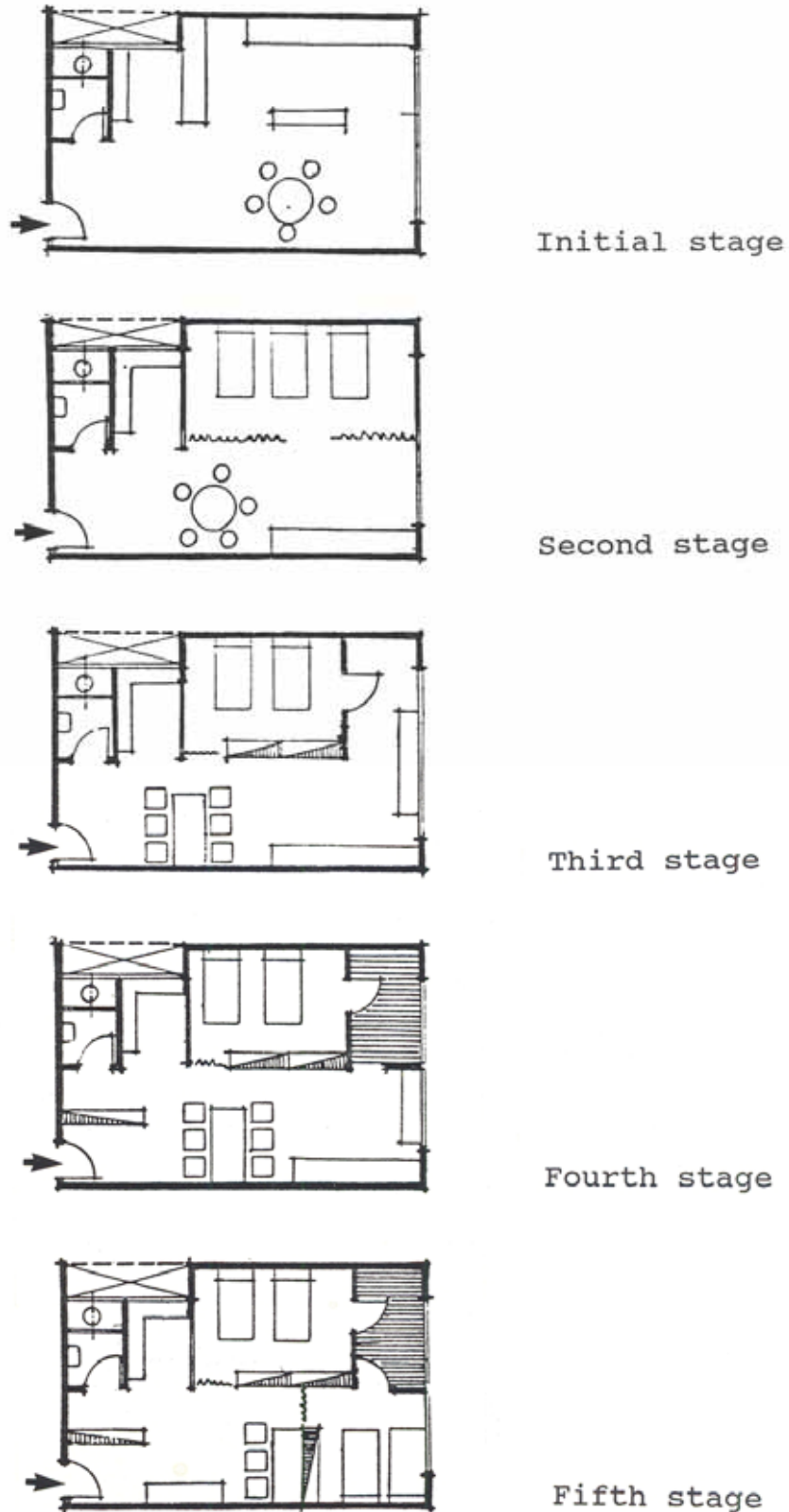


Fig. 4.9 The household improves and completes his own shell house according to his own needs (Ref. 57).

4.4. The Need of Appropriate Building Technology

4.4.1. The Approach to Appropriate Building Technology

The feasibility of community participation in construction process depends mainly on the level of building technology, i.e., level of workmanship, the ability of using and handling the building materials as well as the ability to operate different equipment and tools. It may be stated that the direct involvement of the community members in the building process is decreasing by the more sophisticated and the higher construction technology. Each building material to be used on-site construction will need a certain set of equipments, tools or machines, which on its turn will need a certain level of workmanship and knowledge.

It is important to understand and to know in what social and cultural environment the community (target group) is living, what are their technological capacities, how do they use building materials etc. This information will help in the management and the organization of community labour input during the construction of low income housing. By recording the community construction capacities it will be easy to start the decision making process for the feasible appropriate building technology for the community. The next step is to consider the form and the appearance of the building materials. It is a product from combining different other materials, such as prefabricated components, or single materials. Then to identify to how far the housing project is to include hired skilled labour.

In choosing appropriate building material, a list of criteria has to be developed: self workmanship, accessibility, traditional or advanced technology, availability and cost price of building material. The above criteria are an outcome of the ability or disability of people's participation in construction. This means that the building structure has to be divided into parts from the project organization point of view.

These parts are Operations which are done by a certain shift requiring a certain skill and equipment. Each part is examined whether it can be operated by self-help or mutual help or not. If not, the building structure and building materials have to be modified until self-help is possible. In case that self-help is impossible then hired skilled labour or contractor is required.

4.4.2. Requirements for Appropriate Building Technology

For community participation in low income housing to be successful, suitable building materials and system of construction have to be chosen. This building technology has to facilitate and ease community participation in housing construction. Community participation in the implementation of low cost housing is done either through self-help or mutual-aid modes of organization. Those modes of organizations require a special building technology. The final choice of building technology is, of course, subject to specific economic and cultural conditions; the environment, kind and availability of building materials. A number of considerations, however, are specific to community participation in self-help and mutual-aid process (1).

First, for the people to benefit most from participation in building their own houses, the value added to the production process by the people themselves must be maximized. To create value, materials should be purchased as raw as possible, and the use of skilled labour should be kept to a minimum. Machines and tools should be provided, whenever possible, to increase productivity. People can provide many hours of labour, but their labour must be valuable.

Second, the technology must be suited to the limitations of unskilled people. Unskilled people find it difficult to work with accuracy. Thus, building components and building

1 R.J.S. Spence and D.J. Cook, Building Materials in Developing Countries, 1983, p. 293.

Assemblies which do not require accuracy and have sufficient flexibility for errors are to be preferred.

Third, unskilled people do not remain unskilled for long. Given well defined repetitive tasks, they soon become semi-skilled, and then skilled at performing these tasks. The technology must be divisible into simple and easy steps. Special emphasis must be given to training and practicing.

Fourth, in house construction, assembly is usually more complicated than the production of building components. To maximize the use of unskilled labour, as many components as possible should be prefabricated by the people. Prefabrication is a simple way of taking advantage of mutual aid. There are many advantages in producing components together, rather than having each family produces its own.

Fifth, the people must feel comfortable with the technology. They have to feel free to modify and improve it, without having to depend on expert advice as the construction process progresses. They have to master the technology. They have to be able to repair, maintain and improve their houses always. In this regard, participation is much simpler and more effective when traditional technology is used (1).

4.4.3. Traditional Appropriate Building Technology in Egypt

When studying construction systems used in Egyptian villages, we will find a similarity between the houses all over the different provinces, especially in their roofing technique. This similarity is amazing as some of these provinces differ a great deal from each other in climate, soil and available building materials. Building techniques are also similar but with minor differences specific to each region. Generally, peasants use any sort of available materials for building their houses. They know the

1 Ibid.

They know the Characteristics of these raw materials and, due to their past experience; they know how to make full use of them (1).

In the Delta, sun-dried bricks are made of a mixture of two thirds Nile clay to one third of wheat or rice chaff, while in Upper Egypt it is mixed with dung(2). The peasant, with the help of his family, mixes the constituents to a homogeneous mixture with water and leaves it for three days till the bacterial action has reached fermentation stage. The mixture is then cut into mud-bricks of 26 x 13 x 6 cm or 29 x 14 x 7 cm, and left to dry in the sun for two or three weeks on a bed of finely cut hay (Tibn) or sand. The peasant uses' in this process wooden moulds to form the bricks. The sundried bricks were used since ancient times until now, and 90 per cent of the existing rural houses are built with this type of brick (Fig. 4.10).

Walls usually have a mud-mortar coating on the inner and outer surfaces which increases the adhesive action between the bricks.

Sometimes the wall is whitewashed but this whitewash coat does not last and the peasant repeats this whitewash coat roughly once every year.

Sun-dried brick has some disadvantages, being easily destroyed by water penetration, unhealthy, hard to clean and can harbor insects. On the other hand, brick walls are very good for insulation and easy to build. Modern technology may be applied to upgrade mud quality, but the problem is that mud availability decreased after the construction of the High Dam south of Egypt. So to face that challenge, researches

1 Hassan Fathy, Architecture for the Poor, 1973, p. 4.

2 General Organization for Housing, Building and Planning Research, Rural Low Cost Housing. Social Aspects and Needs of Farmers, 1976, p. 80.

Have to step up to seek a substitute for Nile clay, such as desert shale rocks (1).

Burnt bricks, known as traditional red bricks, were also used in few buildings in rural areas. The peasant uses red bricks which are made by firing hand-made clay-bricks in special kilns, in large quantities. They were used in building either the whole house or sometimes the foundations only; the remaining part of walls was completed with the cheap clay-bricks (Fig. 4.11).

Another building method called Al-Toof was applied in rural housing (2). The building material is a mixture of sand and clay used primarily in desert bordering areas such as the Sharkia province where sand is abundant. Bricks cannot be made with this mixture which lacks shear-resisting components. The peasant constructs the walls from the wet mixture after pouring it into a rectangular wooden mould of 40 cm height and it is left to dry and he obtains the first layer of the wall. The mould is then pulled up and placed above this layer to prepare the next one and so on till the desired height is reached. Each layer is left to dry for about a week before the subsequent one is poured into the mould.

In the villages near rock quarries, a large number of houses are built with, rough or squared cut stones. Stone walls are about 45 cm thick. The roofing system remains the same as in previous cases.

Partition walls have been used in rural areas. The peasant generally utilizes cheap abundant materials for these partitions. The common materials used for partition walls are red bricks. In some cases other local materials are used such

1 Dr. Ahmed A. El.Erian and Dr. Mahmoud A. Reda Youssef, Building Materials for Housing of low Income Sector in Egypt, in Appropriate Building Materials for Low Cost Housing, November, 1983, p, 232.

2 General Organization for Housing, Building and Planning Research, Rural Low Cost Housing. Social Aspects and Needs of Farmers, 1976, p. 81.

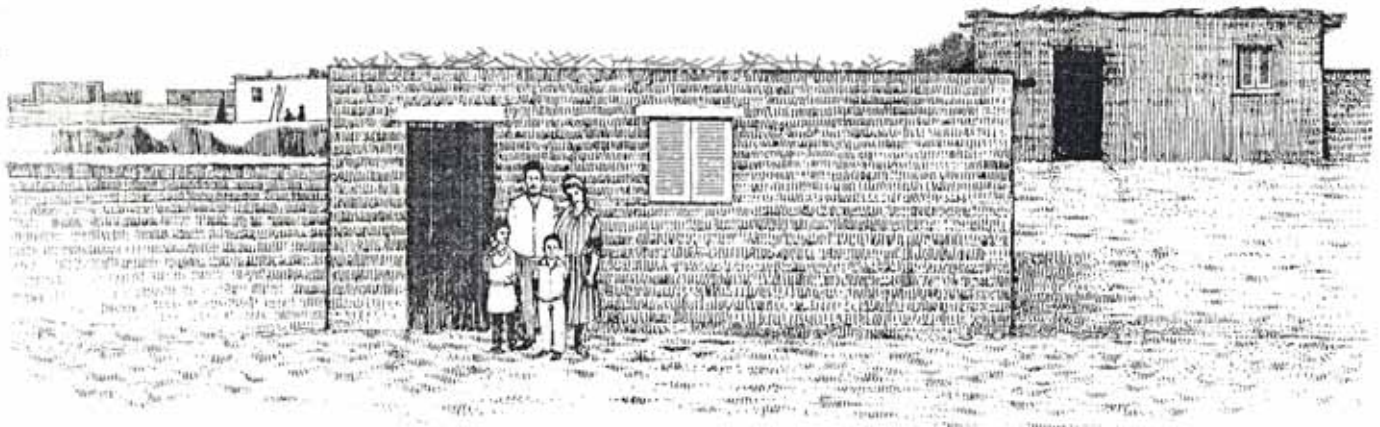


Fig. 4.10 90 per cent of the existing rural houses are built with sun-dried bricks (Ref.7).

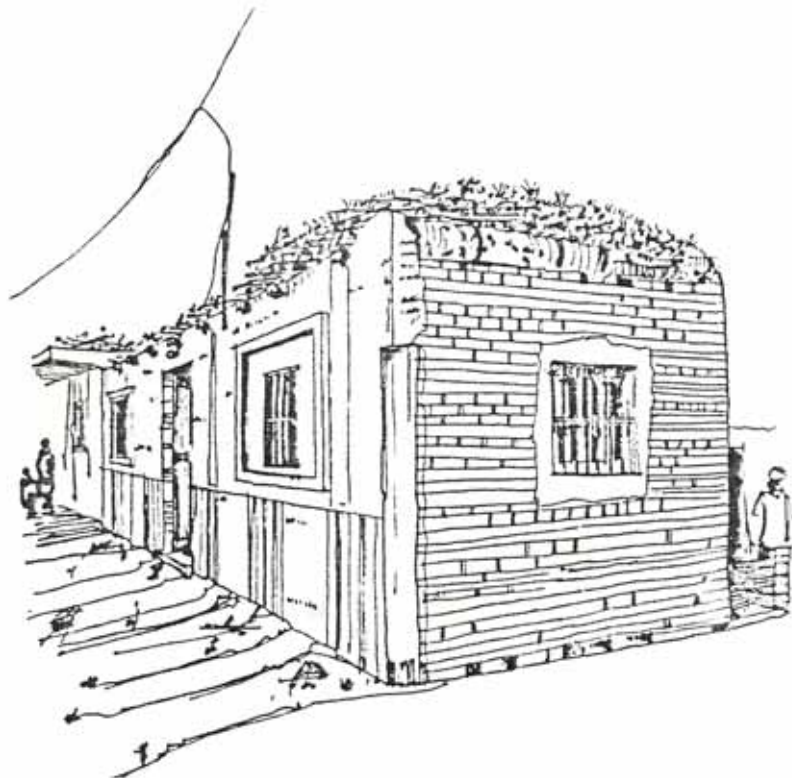


Fig. 4.11 Burnt bricks, known as traditional red brick, were also used in few buildings in rural areas (Ref. 62).

as reed and hay plastered together with mud, corn stalks held together with clay or palm leaf and matted papyrus stalks(1). This type of partition walls is used in dividing large rooms, or the open courtyards into smaller areas. Sometimes the peasant builds a small shed in the middle of his land to be used as a resting place. The shed is usually built as a skeleton structure with palm trunks or tree branches acting as columns, the spaces being filled with papyrus mats, or palm leaves as partition walls.

Another way of building partition walls is by using a kind of ceramic jars (Kawadees). This is a type of clay jars used as nests in pigeon towers built in the countryside. This is not a common method for building walls or vaults but in some experiments these jars were used as an alternative to bricks. The development of local building materials in rural areas was very limited. In recent years the traditional building materials and methods of construction in urban areas have been used and applied in rural housing. The traditional Egyptian village lost its characteristics when the rural socio-economic structure lost its qualities. Community participation in rural housing became less as in urban areas.

One of the main problems in the construction of rural housing is roof construction. The roofs are either built flat or vaulted. The flat roof is prevalent in most parts of the countryside; the vault is common in certain localities especially in Upper Egypt. When building a roof, the peasant prefers to use the abundant and cheap materials available in his locality, examples of the materials used are (2) (Fig. 4.12):

- a. Trunks and branches of trees haphazardly set.
- b. Trunks of trees covered with plant stalks and straw.
- c. Trunks covered with mats and mud.

1 Ibid, p. 82.

2 Ibid, p. 83.

- d. Bamboo covered with reed and mud.
- e. Timber beams covered with reed and mud.
- f. Wooden beams and plants.

In spite of the efficiency of these materials, acting as heat insulators in summer, yet they cannot stop the penetration of rain in winter which can cause its failure. To overcome this defect, some peasants cover the roof with empty fertilizer plastic bags and cover it with a mud layer to keep out the water. Other peasants living near papyrus lakes and swamp bind the papyrus reeds with ropes to make certain kinds of adherent surfaces used to fill the spaces between the wooden roof beams. Sometimes the beams are strengthened with bamboo stalks and the papyrus surfaces are spread over it.

In Upper Egypt roofs are sometimes built in the shape of vaults or domes, using mud bricks or burnt red bricks. This is a very ancient method of construction which has been revived by Hassan Fathy in the early fifties in Gorna Village in Upper Egypt (Fig. 4.13).

Recently, with the introduction of building materials and methods of construction from urban areas to rural areas, the peasant developed his awareness and began to use reinforced concrete as a roofing slab (Fig. 4.14). He built his houses of red bricks or cement blocks, which he made in site. The peasant did not find it difficult to develop himself and to use another building technology. In fact, he successfully used them according to his own needs and ability. It is noticed that the peasant is trying to show that he has become civilized (1).

For flooring, the peasant covers the floor of his house with a layer of clay, chaff mixture. He prefers this type of flooring because clay and chaff are cheap, available and easily set. Also it is an excellent heat insulating material.

1 General Organization for Housing, Building and Planning Research, Rural Low Cost Housing. Architectural Aspects and Review of Previous Works, 1976, p. 64.
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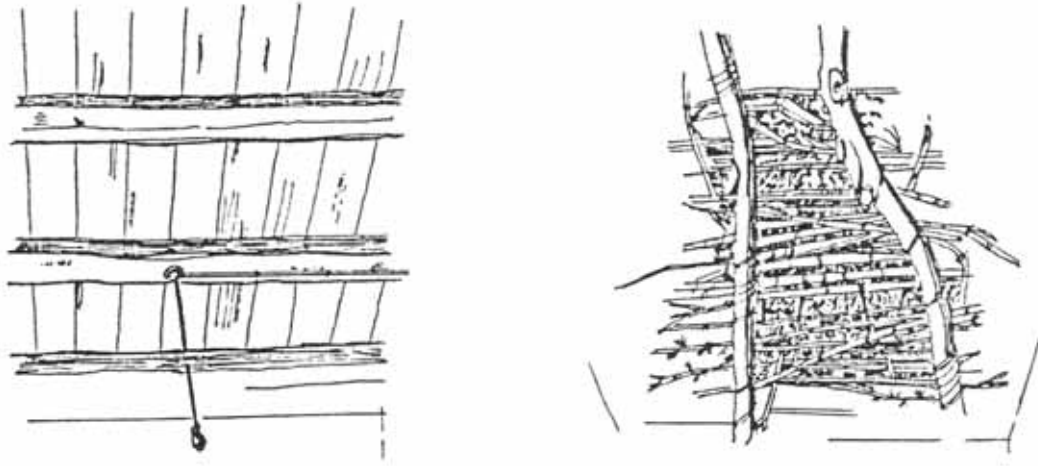


Fig. 4.12 Timber beams, trunks and branches used in roofs (Ref. 62).

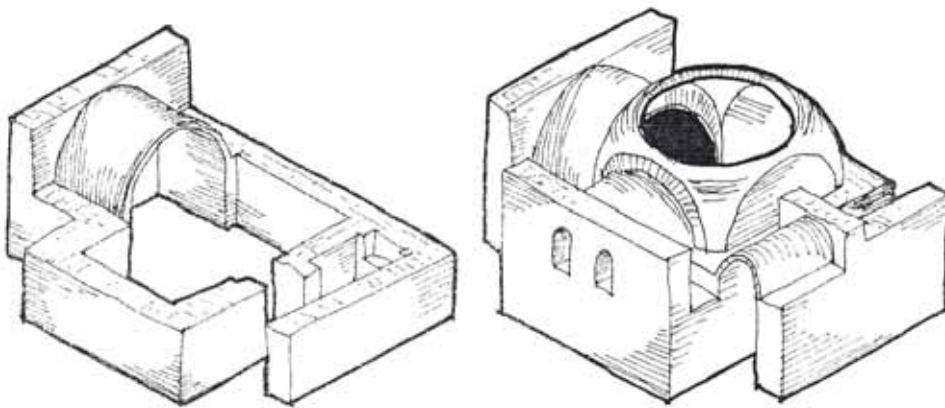


Fig. 4.13 Vault and domed roofing technique in Upper Egypt (Ref. 11).



Fig. 4.14 The invasion of building materials and methods of construction from urban to rural areas. Reinforced concrete slabs (Ref. 62).

A survey carried out in several villages showed that 95% of the houses had a flooring of compacted clay, 2% had a dust layer, and 1.5 had cement tiles, 1% had a layer of plain concrete and 0.5% had wooden flooring.

4.4.4. Appropriate Building Materials for Walls

There are several types of appropriate building materials which could facilitate community participation in low-cost housing in Egypt. These are:

4.4.4.1. Pressed Blocks

Compacted soil blocks can be made either by hand compaction in single moulds, or by the use of a hand-operated press, or by a mechanically powered block-making machine. Hand compaction (Fig. 4.15) is very intensive, and because less well-compacted blocks are produced, a larger quantity of stabilizer (e.g., cement, lime) may be added for adequate stabilization. But it has a great advantage of cheapness and simplicity, and consequently it is expected that this method could continue to be widely used in self-help housing in Egypt. This process can be carried out by one or two people with cheap mould.

In other cases hand-operated press which requires a team of four people to operate such as CINVA-ram (1) (Fig. 4.16) are a little more expensive. They produce better compacted blocks at a faster rate than by hand compaction, rising to about 50 blocks per hour. They are particularly suitable for grouped self-help housing schemes. But labour productivity is not high, and for commercial production, a mechanically operated press is essential.

Before the stabilizer is mixed, the soil should be screened and air dried. The stabilizer should be added and thoroughly mixed before water is added. Compaction into

1 R.J.S. Spence and D.J. Cook, Building Materials in Developing Countries, 1983, p. 56.

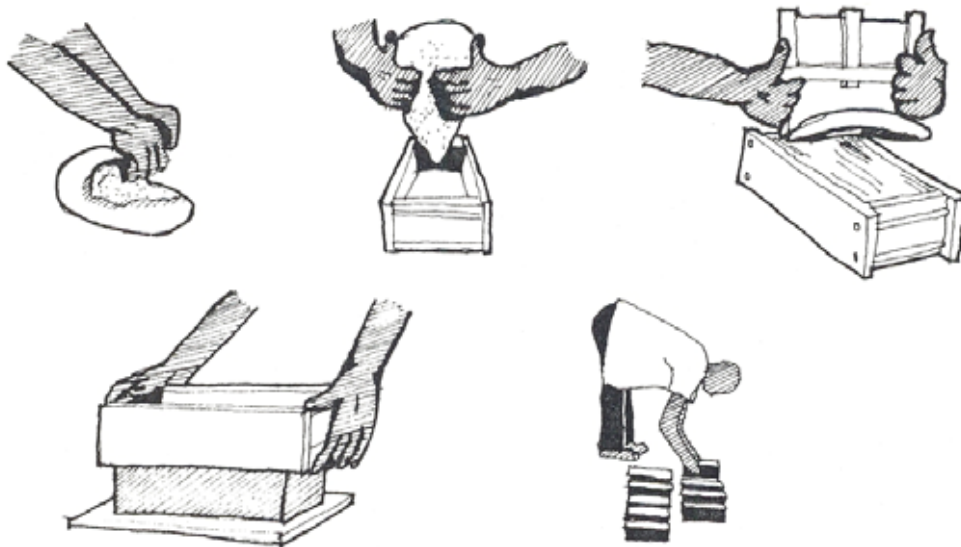


Fig. 4.15 Compacted soil blocks made by hand compaction (Ref. 27).

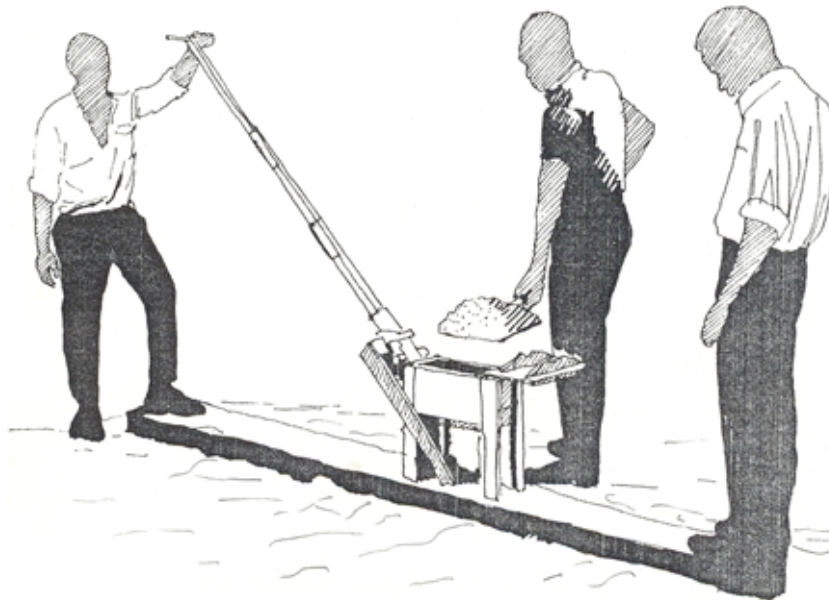


Fig. 4.16 Moulding stabilized soil blocks in CINVA-Ram, by using manual press long arm instrument (Ref. 29).

Blocks should take place immediately after mixing because any delay has a bad effect on density and compressive strength (1).

After compaction, by any of the processes described above, the blocks must be allowed to cure, in order to gain strength, for a period of at least seven days. During the curing process, the blocks should be covered for protection from rapid drying, and sprinkled with water daily. The stacked blocks may then be allowed to dry out. In the case of cement stabilized soils, the blocks may be used after a further 14 days, but for lime stabilized soil, a longer period of strength may be added. If used too early, shrinkage may occur after the blocks have been built.

4.4.4.2. Adobe Blocks

The process of adobe block manufacture is the same as that of clay bricks before firing. Soil is mixed to an almost liquid consistency by addition of water, thrown into moulds, ejected and allowed to dry in the sun (Fig. 4.17). The soil is selected, not for its good compaction properties, as in the case of pressed-earth blocks, but for good drying strength coupled with a shrinkage which is not enormous. For this reason, very coarse materials is usually excluded, and a higher proportion of fine material is permitted.

The traditional process of mixing is to place the soil on a suitable flat surface, or in a pit, about 30-40 cm deep (Fig. 4.18), and to add the necessary amount of water and to reduce to a wet plastic consistency by treading. If stabilizer is to be added, this process is unsuitable and a mechanical mixer is used. Stabilizers which may be used are lime, cement or alternative chopped straw or other fibers (2) (Fig. 4.19).

1 Hassan Fathy, Architecture for the Poor, 1973, p. 224.

2 Paul Graham Mc Henry, Adobe and Rammed Earth Buildings, 1984 59.

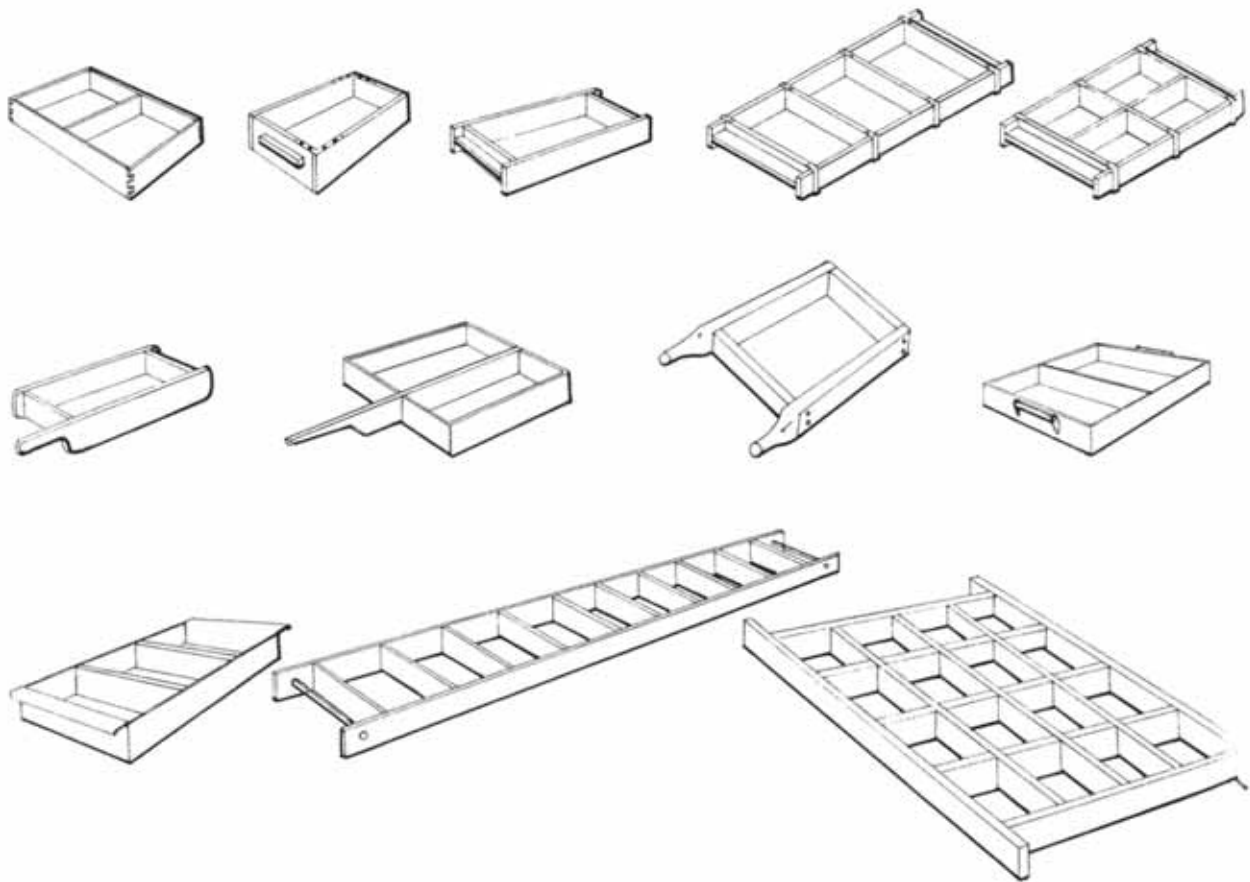


Fig. 4.17 Typical types of adobe block moulds. Many sizes and configurations could be used (Ref. 27).

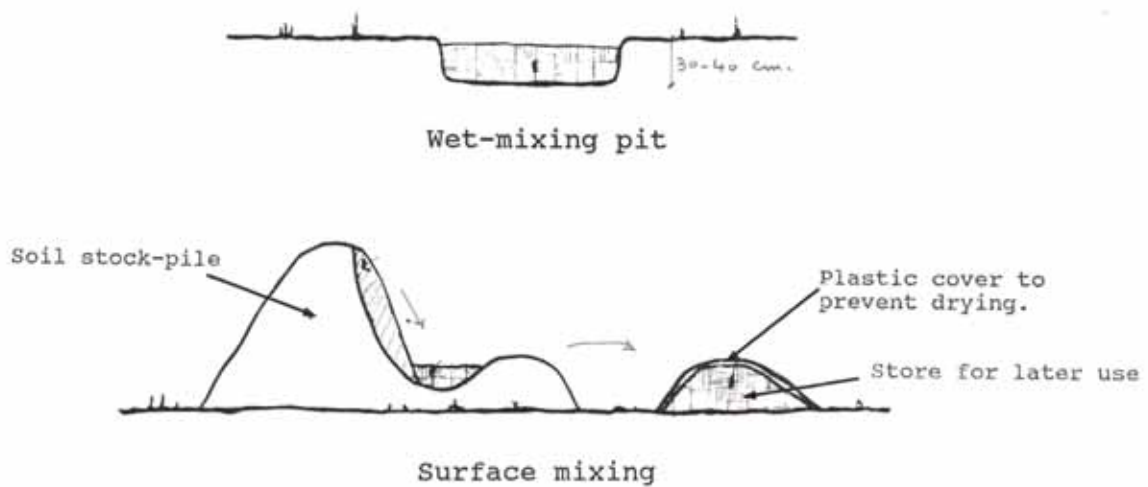


Fig. 4.18 The traditional process of mixing soil.

The blocks are moulded in a wooden mould open at the top and bottom. The sides of the mould are wet or preferably lightly dusted with fine sand or ash to prevent being stuck, and the mould is placed over a board. A part of prepared clay, slightly larger than the volume of the mould is then thrown into the mould with sufficient force, to cause it to spread and fill the corners of the mould. The surplus material is then struck off with a straight-edge and the mould lifted, leaving the block on the board which is then moved. In cruder processes, the block is moulded directly on the ground, and the moulder moves along the moulding line (1). The blocks are left in place for 12 hours or more for initial drying under a cover before being turned on edge to allow final drying, or curing, which may take about three weeks. Block sizes are generally larger than clay bricks and vary from 10 x 20 x 40 cm to 12 x 25 x 50 cm (Fig. 4.20).

4.4.4.3. Rammed Earth (Earth Concrete)

Earth is compacted in place in formwork after compaction; the formwork is released, and moved along to a new position in the wall, or upwards to the next layer. Rammed earth construction is the modern version of the ancient technique of building with EL-TOOF in Egypt (Fig. 4.21).

Selection of the soil is very similar to that for pressed blocks. A sandy soil with just enough clay material to bind it is most suitable. Cement or bitumen may be used as stabilizers.

A typical arrangement of formwork is composed of a pair of well-made boards, of length 1.8 m and height 0.66 m, 0.2 m of which is clamped to the completed wall below (or the footing) (2)

1 Ibid, p. 61.

2 R.J.S. Spence and D.J. Cook, Building Materials in Developing Countries, 1983, p. 60.

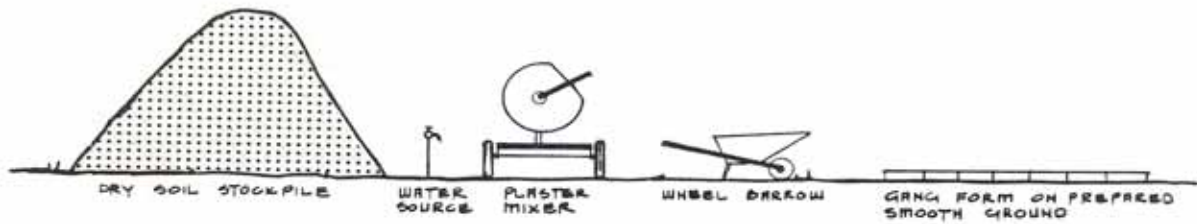
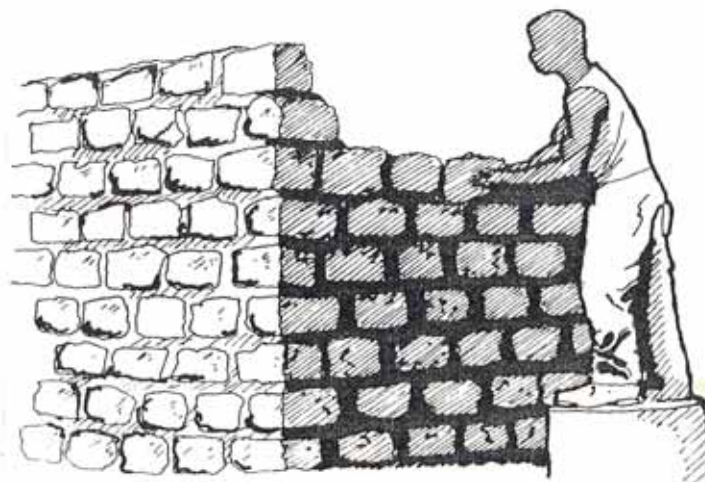


Fig. 4.19 Semi-mechanized production of adobe blocks (Ref. 20).



Fig. 4.20 In cruder processes, the block is moulded directly on the ground (Ref. 20).



Adobe block on construction

The boards are spaced 0.3 m apart by timber spacers, tied together by quick-release steel ties, and incorporate a pair of rollers which enable the formwork, once released, to roll forwards to the next position on the wall (Fig. 4.22). Special formwork sections are needed for corners and cross-wall junctions.

Soil is heaped into the formwork in layer of 10 cm which are then hand compacted by a flat-ended ramming tool to a thickness of about 6 cm. If the wall is unsterilized or stabilized with bitumen, it should be allowed to dry out quickly to gain strength and take up shrinkage. However, if it is stabilized with cement, the normal rules for concrete curing apply, it must be kept damp and protected from hot sun and strong wind for at least 10 days(1).

4.4.4.4. Burnt Bricks

To make bricks, a suitable soil (clay or earth) is mixed with water, formed into the desired shape in mould, dried, and then set in a kiln and fired at a sufficient temperature (usually 850 - 1000 C) to create permanent ceramic bonds between the soil particles(2).

In traditional brick making in rural areas bricks are moulded by hand in simple wooden moulds. The clay is formed into pieces by the moulder, thrown into the mould with sufficient force to take up its shape accurately. The mould is then removed leaving the brick to dry. The base of the mould can be indented in various ways, in some brickworks productivity is increased by the use of multiple or gang moulds. Most mechanized brickworks make wire-cut bricks. After mixing, the clay is compacted into the form of a clay column which is then sliced into brick-sized pieces Fig. 4.23). Drying takes up to four weeks, after which the bricks are ready for burning.

1 Paul Craham and Mc Henry, Adobe and Rammed Earth Buildings. 1984, p. 100.

2 R.J.S. Spence and D.J. Cook, Building Materials in Developing Countries, 1982, p. 68...

The simplest technique used for burning bricks is the clamp. A clamp is a large pile of bricks carefully stacked in such a way as to leave spaces for the fuel and for the distribution of the hot gases, and plastered externally with mud. The fuel is ignited and the fire is allowed to burn itself out, a process which for a large clamp may take several weeks, but for a small one, only a few days. Firewood is used as fuel, and to allow space for this, tunnels are constructed across the base of the kiln, by corbelling out the bricks on either side (1) (Fig. 4.24).

The bricks produced by the traditional method tend to be weak and to have numerous defects. One of the main defects is the inability of the land from which the clay has been taken to be returned to agricultural use. One effective approach to the development of an appropriate technology, therefore, is to upgrade this traditional technology, by eliminating these defects. Another raw material has to be found to be used instead of using clay from the agricultural land, without making much changing in the manufacture process.

To use brickwork as the main load-bearing material, strength, appearance and protection of the surface must all be considered. Most hand-made bricks are of low strength. So for load-bearing masonry the low strength of country bricks can be counteracted by skillful design of the wall and by good binding (mortar). Wall panels are stronger if they are firmly tied to adjacent walls or buttresses at frequent intervals or if the wall is curved (2).

The use of brickwork as a facing material requires accurate bonding, and careful control of the mortar joints. For full brick walls, the simplest, most widely used bonding technique is English bond, in which a row of headers alternates with a row of stretches. The headers tie the two

1 Ibid, p. 71.

2 Ibid, p. 71.

Fig. 4.21 → Rammed earth construction (Ref. 20).

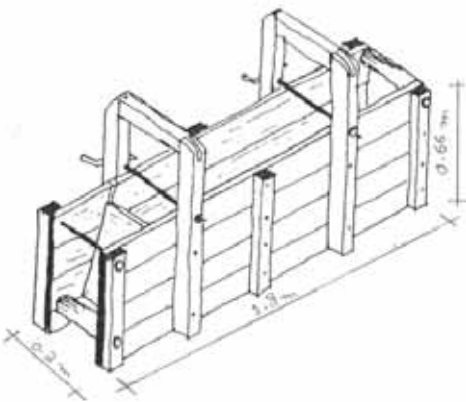
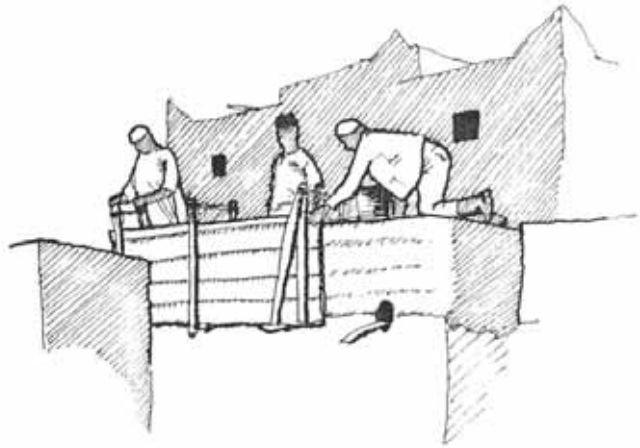


Fig. 4.22 ← A typical type of rammed earth construction mould (Ref. 20).

Fig. 4.23 → The wire-cut process of brick-works (Ref. 27).

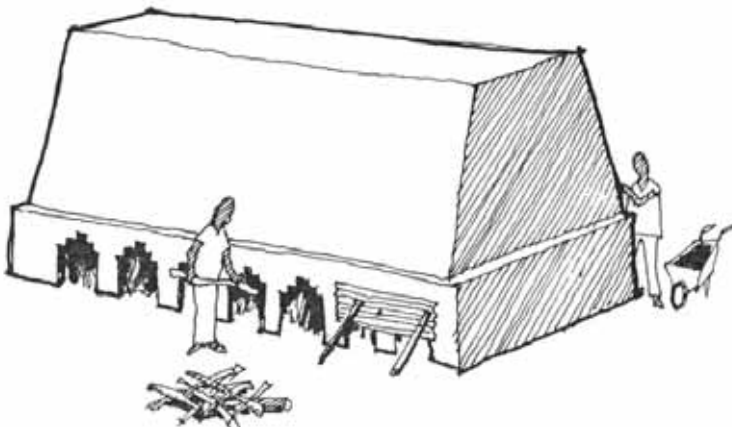
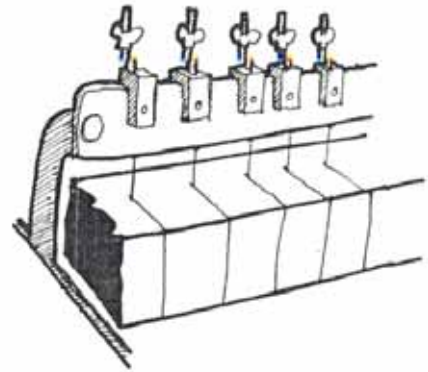


Fig. 4.24 ← The simplest technique used for burning bricks in the clamp (Ref. 27).

Leaves together. Also there are Flemish bond, Stretcher bond, and Chinese bond and Quatta bond.

To save cost in brickwork it is better to span the wall openings, for doors and windows, by arches rather than reinforced concrete lintels. Also the financial savings resulting from the use of fair-faced brickwork could be very significant, since the cost of plaster can be as much as 10 per cent of the cost of a small building.

4.4.4.5. Concrete Blocks

Concrete blocks are now almost a universally available building material, and have almost entirely displaced clay bricks as the standard walling material. The advantages of concrete blocks are that being much larger and of truer dimensions than clay bricks, they are simpler to lay and use less mortar. They can be manufactured in a variety of thicknesses, and can be either solid, hollow or cellular to suit the wall dimensions and loads needed, and can be made with lightweight aggregates to reduce transportation costs and loads and to increase thermal resistance. However, their color makes them less attractive and their size makes them less flexible in surface treatment than clay bricks.

Production equipment varies considerably ranging from hand moulding, with a daily capacity of a hundred or so, to automated plants producing in excess of 5000 blocks per day. With hand moulding (Fig. 4.25), the concrete can be compacted by hand or by using hand- or machine-operated presses (Fig. 4.26). Once the block is formed, the sides of the mould are opened and the block is generally allowed to cure on the base plate of the mould (1).

There has been a trend in recent years to manufacture housing components such as lintels, roofing and hollow core flooring units, in an effort to reduce costs. It has been

1 Ibid, p. 87.



Fig. 4.25 The concrete can be compacted by hand in moulds (Ref. 20).

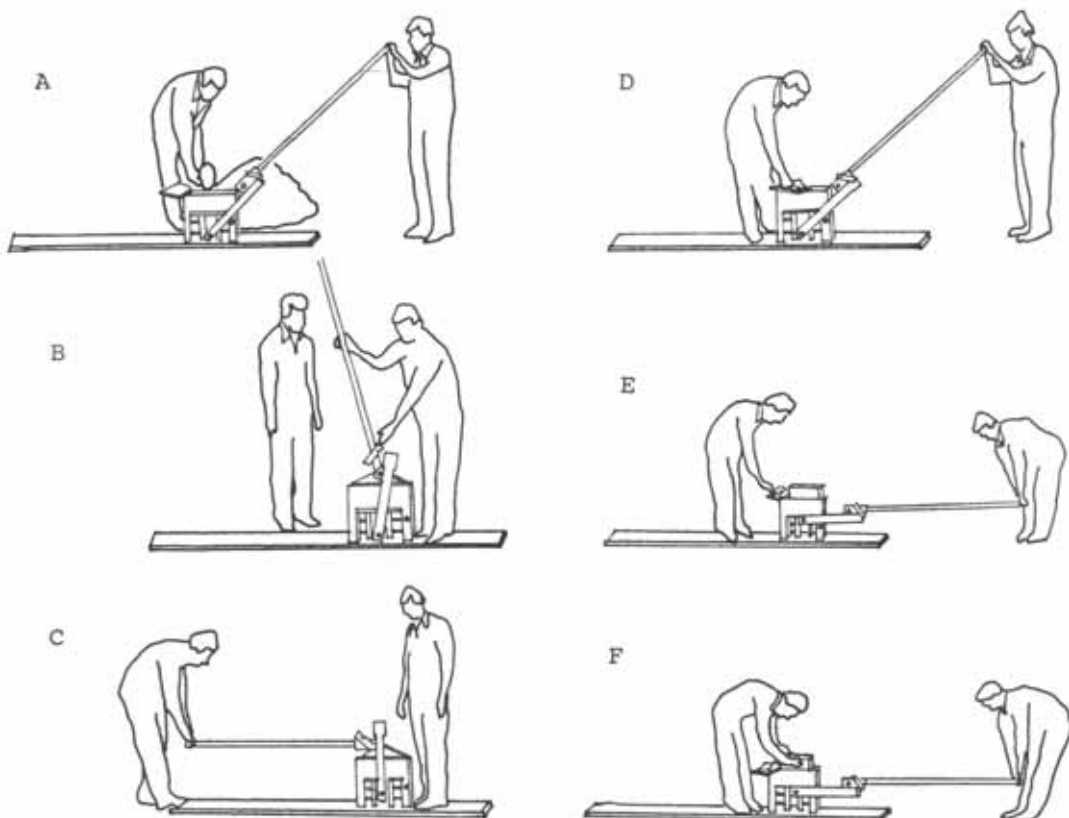


Fig. 4.26 Cement block moulding machine, similar in principle to the CINNA-Ram (Ref. 27).

Estimated that a cost saving of nearly 25 per cent can be achieved using the concrete frames.

4.4.4.6. Ferro cement Elements

Ferro cement is a type of reinforced concrete which consists of cement or mortar and reinforcement of layers of continuous wire mesh. Ferro cement requires a minimum of skilled labour but skilled supervision is necessary.

There are four steps in Ferro cement construction which are: placing the reinforcement, mixing the mortar, placing the mortar and curing. The arrangement of mesh skeleton steel should be such that full encapsulations by the mortar can be achieved. The number of layers of mesh varies from two to eight, depending on the design. The mesh should lie on the skeleton steel and a minimum overlap of 5 cm is normal, the minimum thickness which can be constructed is generally regarded to be about 1 cm (Fig. 4.27).

The mortar can be satisfactorily mixed by hand though faster mixing and better mix uniformity can obviously be achieved by mechanical mixing. Plastering can be achieved by placing the mortar by hand and working it into the mesh reinforcement. The mortar is then finished on both surfaces and left to cure for 14 days.

It is worth mentioning that, in many instances, it is easier to transport the mesh, rod reinforcement and cement to a remote location rather than to transport the complete element made from an alternative material or perhaps the equipment and expertise required to build with an alternative material. Ferro cement could be widely used in the construction of vessels for storage of grain and other foodstuffs (Fig. 4.28), for storage of water and various liquids (Fig. 4.29), and also for gas storage in biogas plants(1) .

1 Ibid, p. 233.

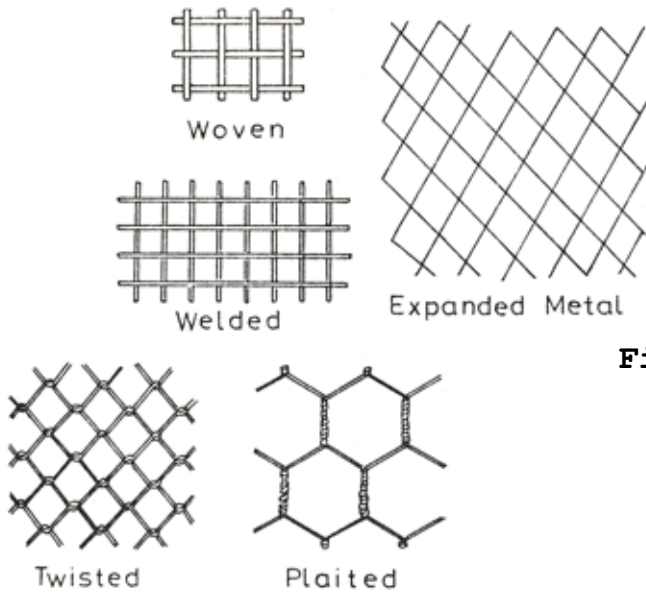


Fig. 4.27 ← Characteristics of some typical meshes used in ferrocement (Ref. 27).

Fig. 4.28 → Ferrocement vessel for storage of grain (Ref. 27).

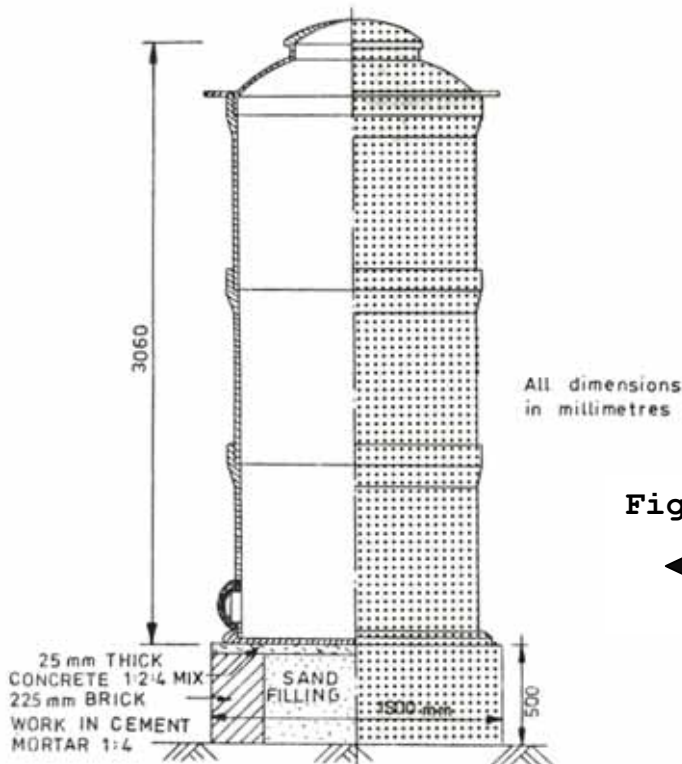
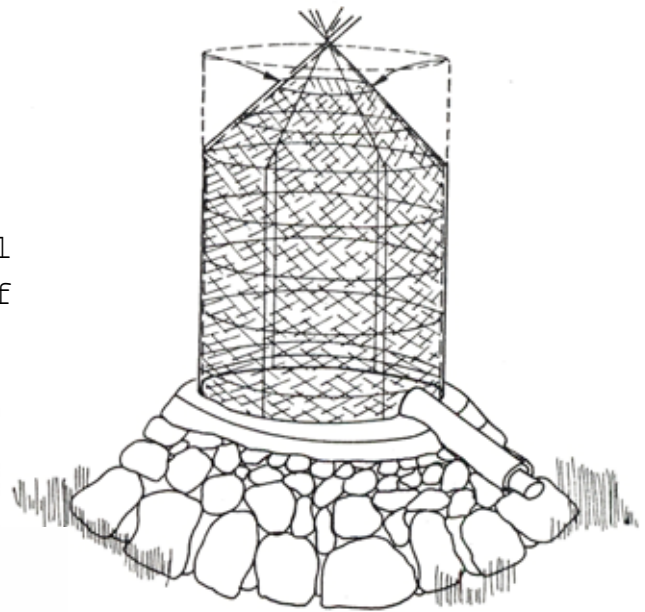


Fig. 4.29 ← Ferrocement bin for water and various liquid storage (Ref. 27).

With regard to the self-help aspect, it is interesting to note that ferrocement could be successful because village labour, with a minimal amount of training and supervision, would be able to construct a water tank or a community sanitary system, which would not have been possible using alternative materials such as steel, reinforced concrete or fiber reinforced plastics. Compared to traditional building materials, ferrocement is obviously expensive and its most successful application in low-cost housing is in the provision of particular elements in the house. Ferrocement could be applied in the construction of roofs, domes and vaults for housing. Ferrocement domes are lighter than brick domes, flexible and could be manufactured utilizing the same village labour used to build the traditional roof.

4.4.5. Appropriate Building systems for Roofing

4.4.5.1. Flat R.C. Slab.

In order to cast an in-site concrete slab, a flat decking or formwork must be assembled, usually of timber. The reinforcement is assembled on this formwork, bars in perpendicular directions being tied together to form a strong mesh, and propped away from the formwork by concrete or plastic spacer blocks to ensure that the reinforcement has sufficient cover of concrete to protect it from corrosion. The concrete is then poured round the reinforcement and up to the required depth and vibrated or otherwise compacted to remove trapped air (1). The surface is trowel led flat, covered and allowed to set and harden without drying for a period of 7 days more, by which time it will have gained sufficient strength for the formwork to be removed, and the slab to carry its own weight, plus the weight of whatever covering is to be applied.

1 Abdel El Latif El Bakry, Engineering Encyclopedia for Building Construction and Public Utilities, 1982, p. 59.

4.4.5.2. Reinforced Brick Concrete Slab

In this method stacks of bricks on edge are laid on the formwork leaving a space for reinforcement running in ribs in perpendicular direction. Concrete is then cast between the ribs to cover the bricks to a depth of 2.5-5 cm (Fig. 4.30). A similar method could be applied where the bricks are replaced by a stack of rejected tiles (Fig. 4.31). This system is particularly good because the air voids between the tiles tend to reduce the weight of the slab and also to increase its thermal insulation value. Wherever lightweight cellular blocks of clay, concrete or other materials are produced, these make ideal filler for reinforced concrete slabs (1).

4.4.5.3. precast Elements

Another set of modification of the standard reinforced concrete slab is designed to reduce or eliminate the need for formwork which is a costly and time-consuming part of the process of construction of either a solid or a ribbed slab. Parts of the roof structure are precast, in moulds on the ground or in a factory away from the site. These may be speedily assembled at the site once the supporting structure is in place, and then sometimes an in-site concrete topping is laid over the precast members, which act as formwork for it (2) (Fig. 4.33).

One system has precast beams placed at such spacing that clay bricks or hollow blocks can span between them (Fig. 4.32). Other systems have precast planks which consist of channels or cored units (3).

1 Ibid, p. 117.

2 Dr. Nassmat Abdel Kader and Dr. Eric Dluhosch, Housing Construction Systems and Design: Prefabrication, the Housing and Construction Industry in Egypt. Interim Report Working Papers, 1979/80.

3 R.J.S. Spence and D.J. Cook, Building Materials in Development Countries, 1983, p. 271

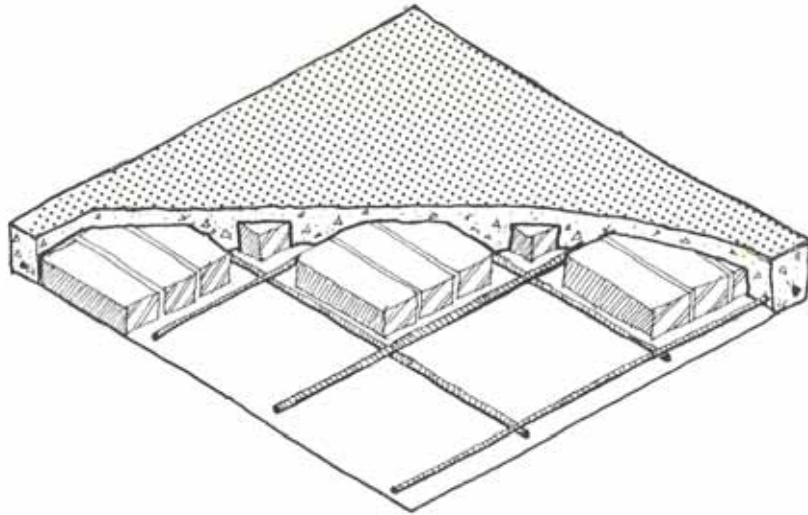


Fig. 4.30 Reinforced brick concrete slab (Ref. 27).

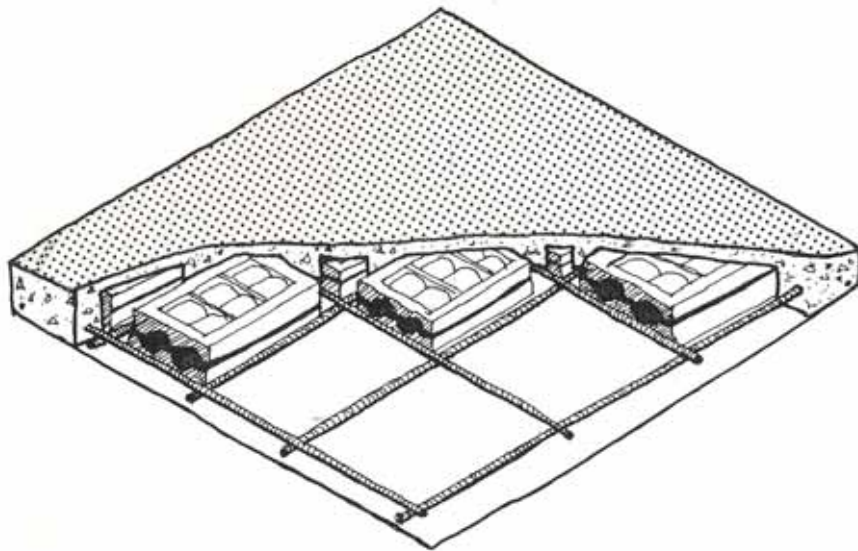


Fig. 4.31 Filler slab (tilecrete) roof (Ref. 27).

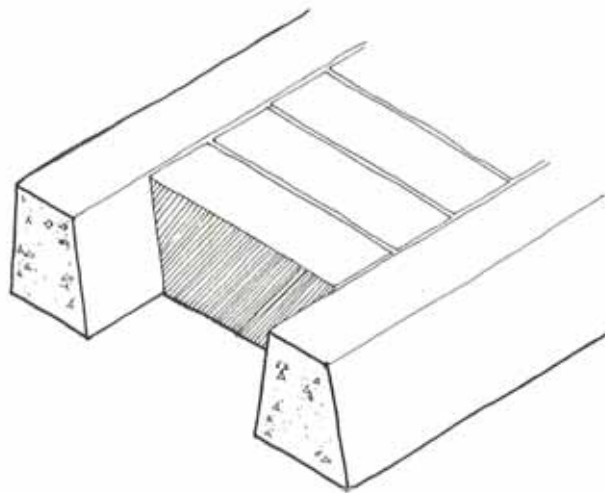


Fig. 4.32 Concrete flat roof: precast planks and clay bricks (Ref. 6).

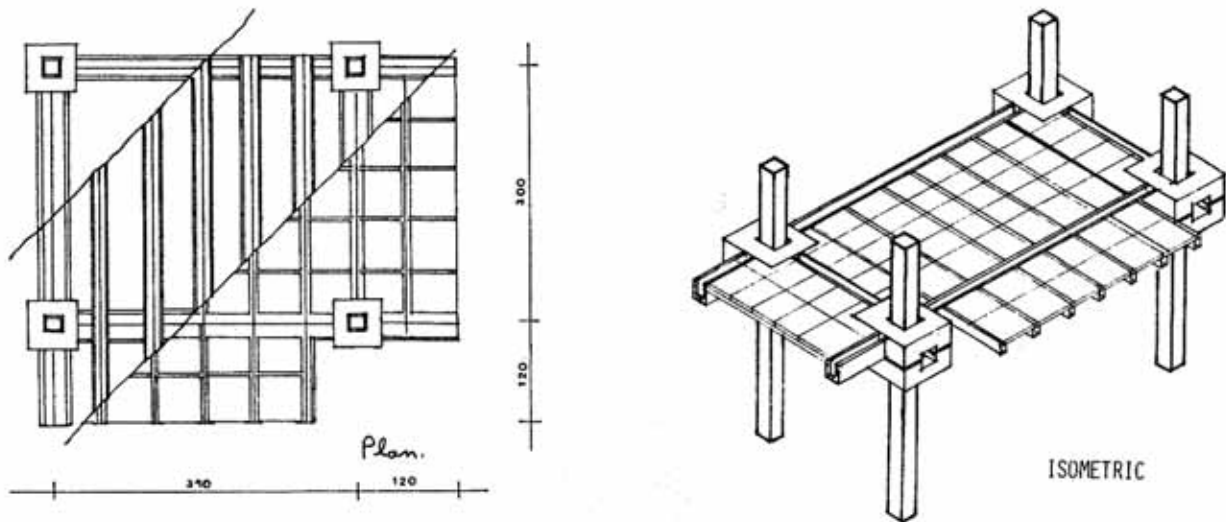
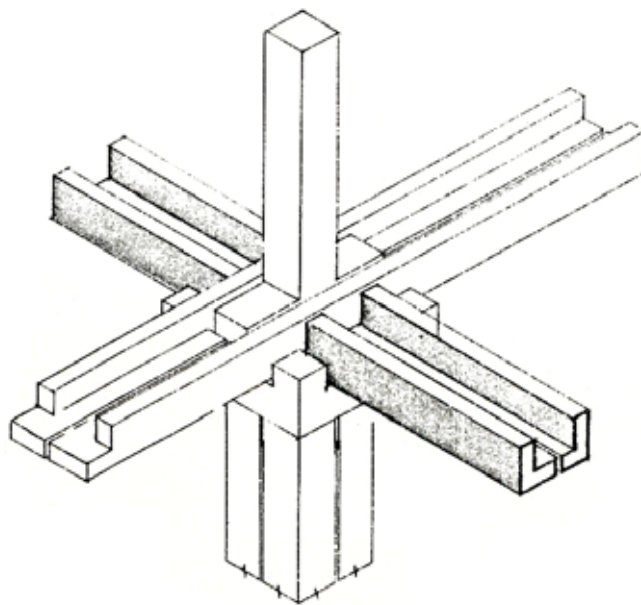


Fig. 4.33 Precast elements for roofing which are easily assembled by community members (Ref. 48).



Where concrete is used for a flat roof, waterproofing is an essential element of the construction. To enable water to run off adequately, the slabs should usually be laid with a slight fall by adding a tapered screed of lightweight concrete. Waterproofing may be also provided by layers of bituminous roofing. For protecting the slab from heat radiation, the simplest method is to provide a white reflective coating of paint or lime wash. The latter, though cheap, is unfortunately water soluble and so lacks durability. A more common durable system is to cover the roof with white or light-colored gravel.

There are many systems of concrete roofing and flooring available. For any particular project, a careful comparative study of materials, requirements and cost should be made, and in addition to this, it is important to consider carefully what special skills any particular system requires, and whether those skills are available. Frequently material-saving and, therefore, apparently cost-saving systems have proved more expensive in the end because they proved too complicated for the local builder to handle.

4.4.5.4. Corrugated Sheets

Profiled sheet roofs are popular for a number of reasons. They are light and easy to lay, fire resistant, and require less supporting structure than tiled roofs, so are comparatively cheap. Sheet roofs could be made from steel, aluminum, asbestos-cement or fiber-reinforced cement.

The most widely used material is still galvanized steel sheet, known as galvanized iron or g.i sheet. It is obtainable in a variety of lengths and widths, and in thickness from 0.8 to 0.4 mm, with standard corrugations at 76 mm pitch. Climatically, g.i. sheets have a poor performance, thermal resistance is negligible, and surface reflectivity, initially poor at about 36 percent, gets worse With time.

A life of less than 5 years is common, though well galvanized, thicker sheets can last much longer (1).

Corrugated aluminum sheets have become widely available more recently and are in many ways superior. Because of the better corrosion resistance of aluminum they are much more durable than steel sheets, and have a high initial reflectivity of 85 percent which does not diminish rapidly with time. They are usually more expensive than steel sheets. Both these types of metal sheets cannot be manufactured locally, so there is a need for alternative types of roof sheet.

Asbestos-cement sheets are made from a mixture of cement and asbestos fibers. A variety of profiles can easily be formed including deep profiles for extra strength and long spans. The sheets, typically of 5 mm thickness, are light and easy to lay, and have a much better thermal performance than either steel or aluminum sheets. On the other hand, they are breakable during transportation, especially over poor roads and are liable to impact damage during and after laying. Asbestos-cement sheets could be manufactured at an appropriate scale where cement is available locally, only the fiber needs to be imported.

There have been a number of attempts to develop roof sheeting materials which can be manufactured totally from local materials. So far, the most successful of these has been the corrugated asphaltic sheets (2). This roof sheet consists of a bitumen-saturated corrugated cardboard. It is waterproof, light, strong enough to support normal roof loads on spacing of 50 cm, and has good thermal insulation properties. The upper surface is painted with aluminum paint to improve reflectivity, and its lightness and flexibility make it very easy to transport and lay without damage. More

1 Ibid, p. 285.

2 Ibid

Important still, it can be manufactured on a simple, small scale, labour-intensive plant, using only refinery waste bitumen and recycled paper as raw materials. Thus, corrugated asphaltic sheets tend to be significantly cheaper than the other materials discussed. They are, however, not as durable as other roof sheets, only a 10 year life is claimed by manufacturers, and the painted surface may need periodic maintenance.

4.4.5.5. Vaults and Domes

A vault is a roof in which the spanning is all in one direction, creating a sideways thrust in that direction at the springing point. A dome is a roof with curvature in two directions, and usually with radial symmetry, which thrusts outwards on its supports in all directions. Vaults and domes are used in arid areas where timber is scarce, the construction tends to be massive, and thus to be appropriate to the climate of these areas. But the traditional techniques of building vaults and domes tend to be in decline wherever modern materials can be obtained.

The Egyptian architect Hassan Fathy has adopted the ancient vaulting techniques to the present-day building requirements, and to show how suitable they still are in response to climate, local materials and existing building skills. He believes that the solution of today's housing shortage is to be found in the renewal of the traditional mud building technology by the poor, based upon their old rural construction technology(1).

He mentioned that normally to roof a room with a vault; the mason will get a carpenter to make a strong wooden formwork which has to be removed when the vault is made. This is a complete wooden vault, running the full length of the room, held up by wooden props, and on which the courses of the masonry vault will rest while being laid. He described

1 Hassan Fathy, Architecture for the Poor, 1973, p. 5.

The way of introducing the Nubian vaulting technique for the construction of the village of New Gourna in Upper Egypt in 1945 by constructing the vault longitudinally, with successive courses of brickwork forming separate arches which lean back on one another. By this method a major cost and complication in vault construction can be avoided (Fig. 4.34)

The problem with all vault and dome roofing is that in order to carry the sideways thrust at the top of a wall, the wall must be very thick and heavy. This can be avoided by continuing the roof right to the ground. Designs for low-cost housing could be done using a continuous catenary vault, which is the optimum shape for carrying its own weight, and can in theory be made very thin⁽¹⁾ (Fig. 4.36).

A widely-used roofing technique which makes partial use of the vault is the jack-arch, in which vaults span between two webs of steel I-beams. Combining the arch principle with prefabrication, this method has advantages in arid climates where some modern materials are available. For stability, the end walls need to be buttressed, or the beams tied together (Fig. 4.37).

Another roofing technique was developed by Prof. EI-Arousy of the structural Dept. Ain Shams University, which was simple and economical. It consists of three different elements: wall beams, ribs and curved non-reinforced concrete slabs. The wall beam is placed on the top of the bearing walls and is provided with notches of equal spacing's of 50 cm. The inverted ribs are slotted in the notches of the wall beams which govern its spacing's. The curved slab elements, 20 cm length by 2 cm thickness, are supported on the lower flange of the ribs. The upper surface of the roof is leveled by mud mortar or with light filling. This system has a great reduction in the building materials and accordingly in the cost. The production of this system needs simple forms and

1 R.J.S. Spence and D.J. Cook, Building Materials in Developing Countries, 1983, p. 289.



A: After the masons outline a parabole on the end wall with mud plaster, they insert dry packing between the bricks.



B: The inclined face of the rings gives support to succeeding courses.

Fig. 4.34: Constructing a vault using Nubian technique (Ref. 11).

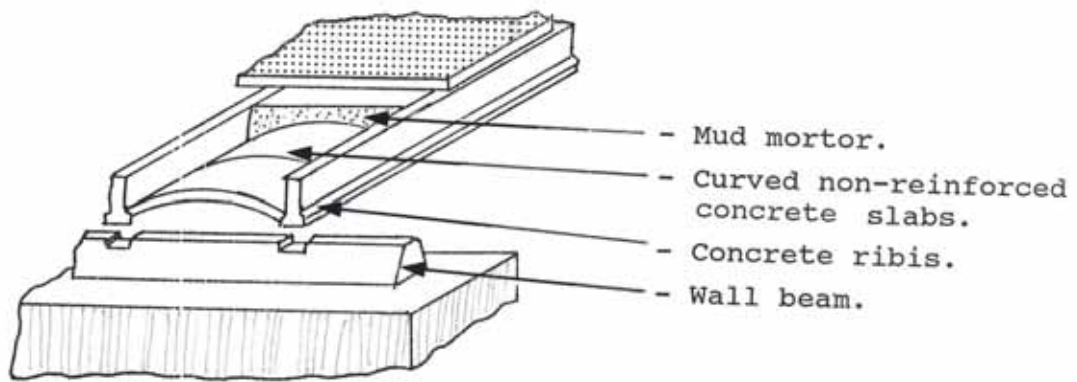


Fig. 4.35 Roofing technique developed by prof. AL-Arouse

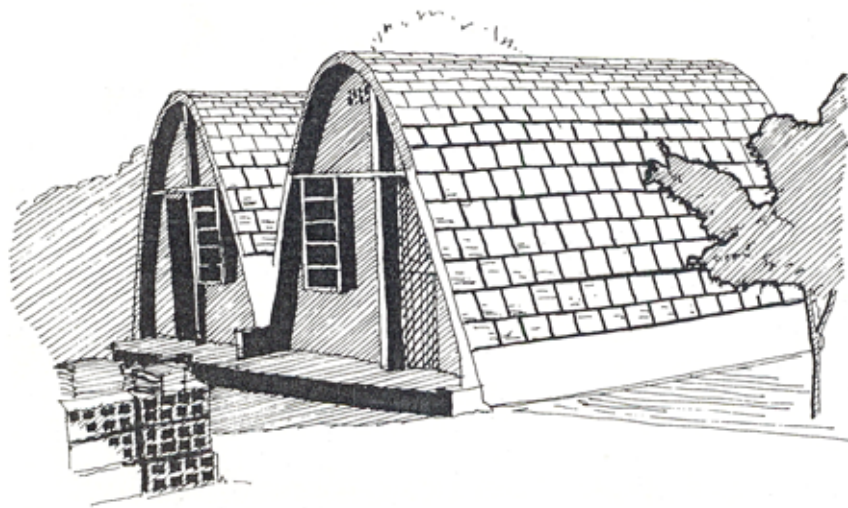


Fig. 4.36 Continuous catenary vault roofing (Ref. 27).

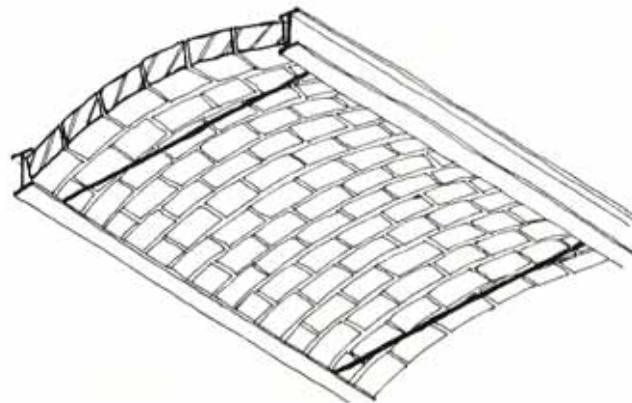


Fig. 4.37 The jack-arch roof (Ref. 27).

All the elements are within the capacity of a single area to carry and thus avoiding any complexity of expensive machinery (1) (Fig. 4.35).

4.4.6. Appropriate Building Technology in Action

Appropriate building technology consists of two main components, building materials and building systems. It is difficult to develop appropriate building materials, to facilitate community participation in low cost housing, without developing the building systems.

One of the well known experiments in applying appropriate building technology was performed in the Building Together Project in Bangkok. This is a unique example which has an international reputation. It shows the integration of using appropriate building materials and appropriate building system, to facilitate community participation in low cost housing.

This example is presented here for the Egyptian people to benefit from it and to adopt it to their own environment, condition and way of living, without copying it blindly. The Egyptian will see in the Bangkok experience how the Thai people defined their problem and how they solve it.

The technology adopted for the Building Together Project was selected with a view to maximizing the surplus created by the people themselves, given the special conditions prevailing in Bangkok(2). To maximize the value added by' the people, a self-help factory was constructed on the building site. During the first stage of construction, each cluster group work in the factory to produce all the components needed for the houses (see 2.2). The basic materials used are sand, gravel, cement, steel and small quantities of wood. The

1 Dr. Abdel Aziz El Arouse, New Construction System for Reducing the Cost of Building Construction in Housing and Public Building in Developing Countries, Afro-Asian Housing Congress, 7-12, December, 1963.

2 Shlomo Angel and Zilla C. Phoativongsacharn, Building Together, March, 1981, p. 11.

Factory is designed to produce building components for one house a day: 500-600 concrete blocks, 16 floor joints, 50-55 short foundation piles, and 16 concrete stairs, reinforcement bars for grade beams, and doors and window frames.

The blocks which are interlocking and require no mortar for assembly, are produced with a simple block machine (1) (Fig. 4.38). The foundation piles are made in short 2.0 m long. The segments, which are hollow, are connected by small pieces of wood (Fig. 4.39). The pile segments, as well as concrete stairs and grade beams are also cast using steel moulds built on the site (Fig. 4.40). All the components thus fit together into one integrated building system (Fig. 4.41).

The total investment in the self-help factory as of January 1981 was US. S 42, 826, broken down as follows (2):

a. Building materials for constructing The factory	US. S 15,475
b. Machinery (including mixers-small truck, Woodworking machines, piling rig, motors, Trolleys, etc.)	US. S 14,174
c. Steel for production of mould, piling rig and forms	US. S 3,397
d. Hired labour for construction of factory, machines, moulds and forms	US. S 9,780
Total	US.S 42,826

The building system developed for the project has important advantages. The cost of materials in US. 24.10 perm², and the total cost of construction is US. S 42.25 per m². This compares favorably with the prices of construction in Bangkok. A recent study sighted US 79.50 per m² as the cheapest construction cost encountered in the city.

-
- 1 A. Bruce Etherington, Interlocking Cement and Concrete Components for Low Cost House Construction. The Building Together Experience in Thai land, in Appropriate Building Materials for Low Cost Housing, November, 1983, p. 236.
 - 2 Shlomo Angel and Zilla C. Phoativongsacharn, Building Together, March, 1981, p. 12.

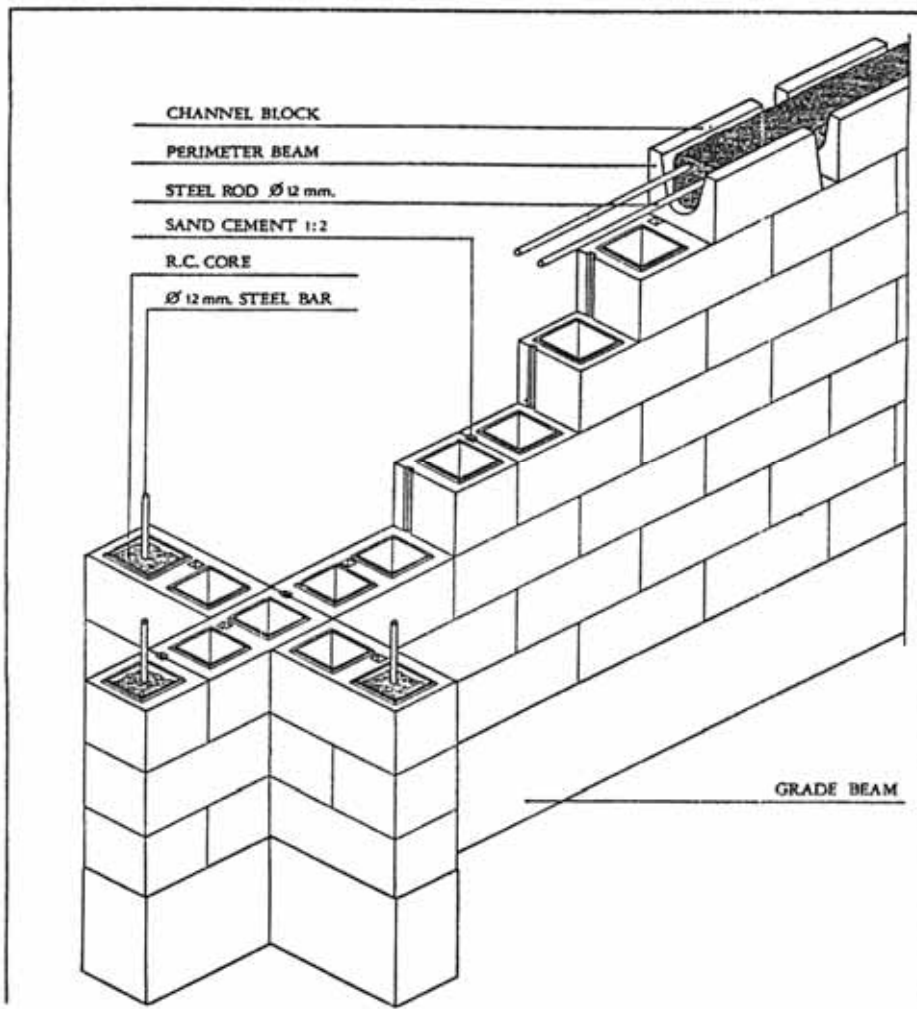
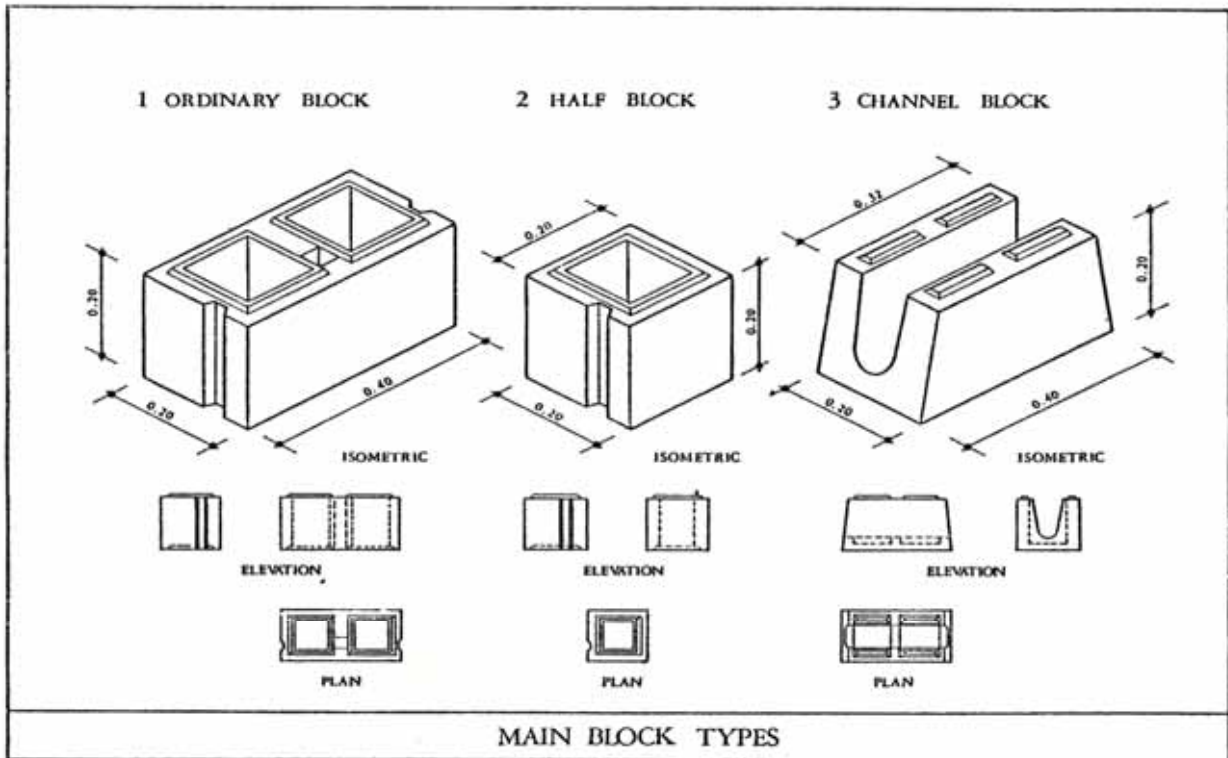


Fig. 4.38 Main block types and block assembly (Ref. 4).

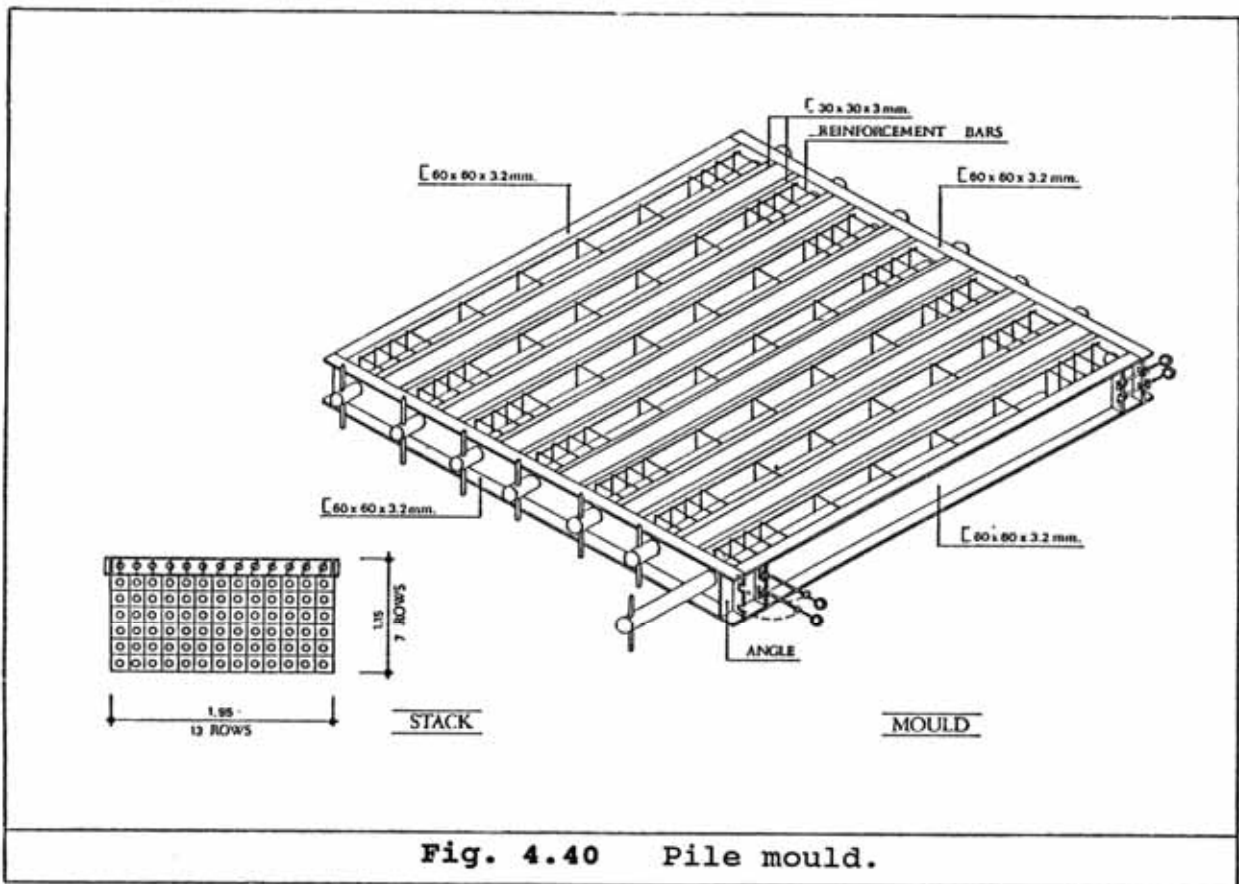


Fig. 4.40 Pile mould.

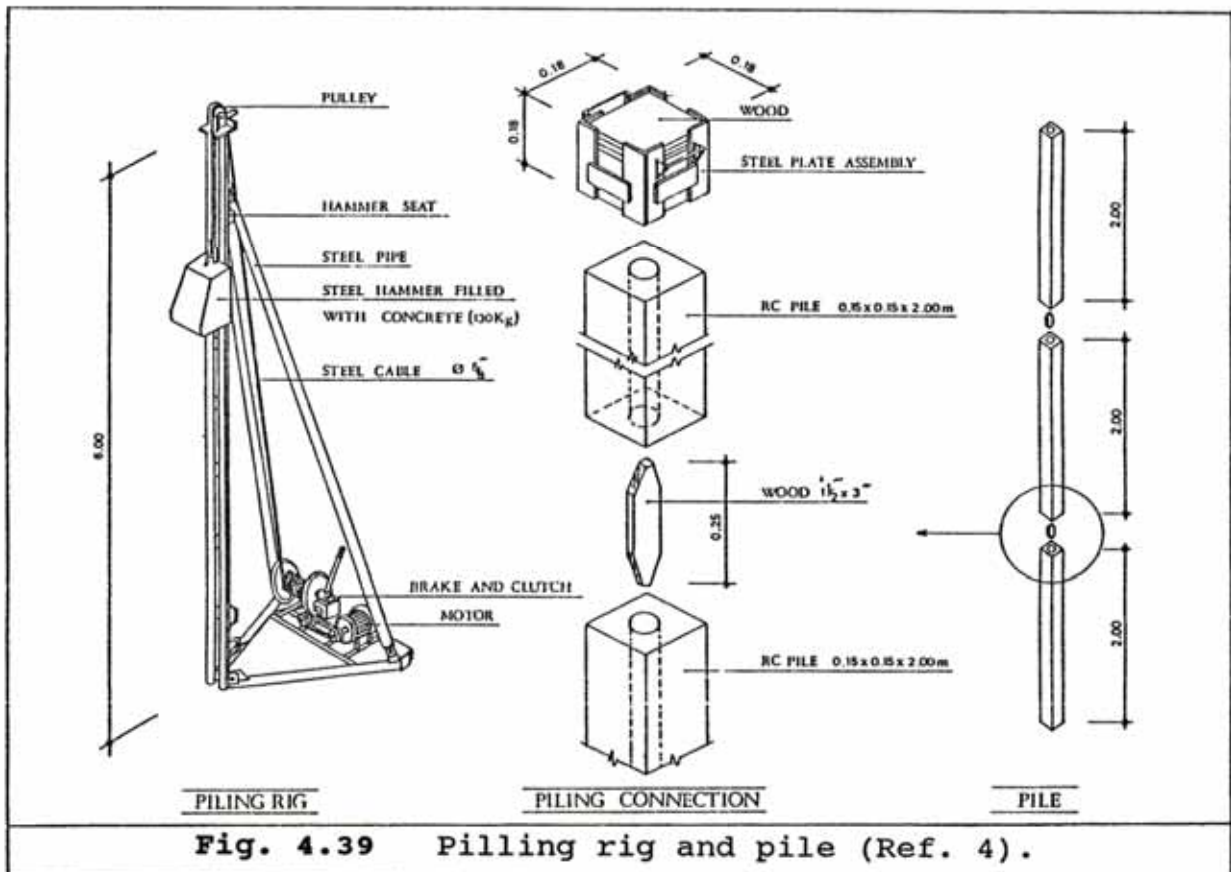
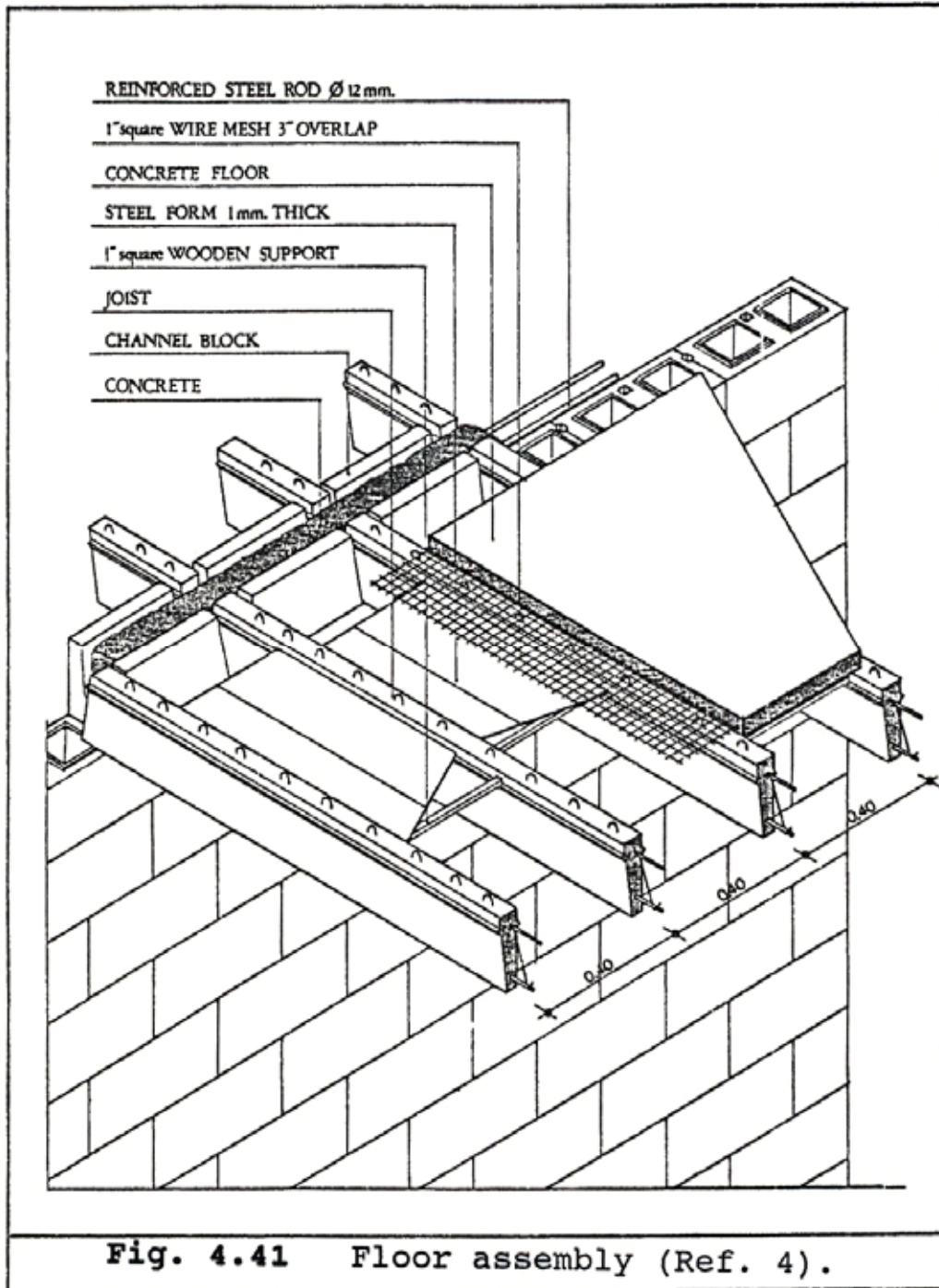
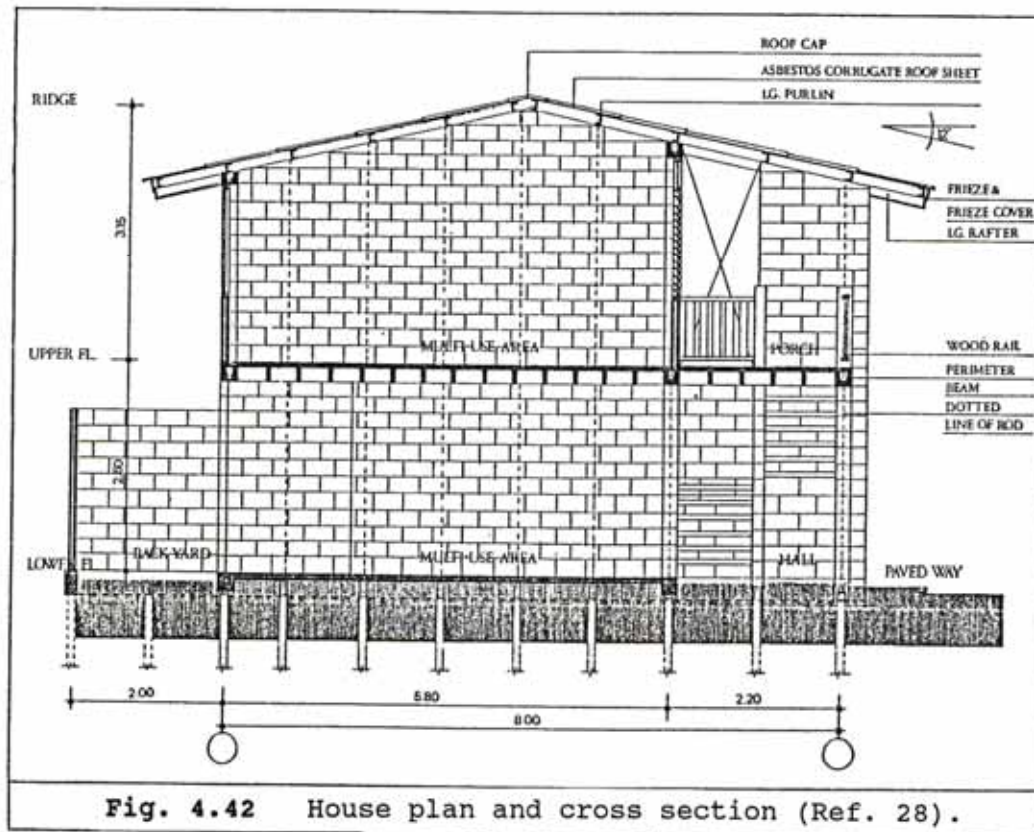
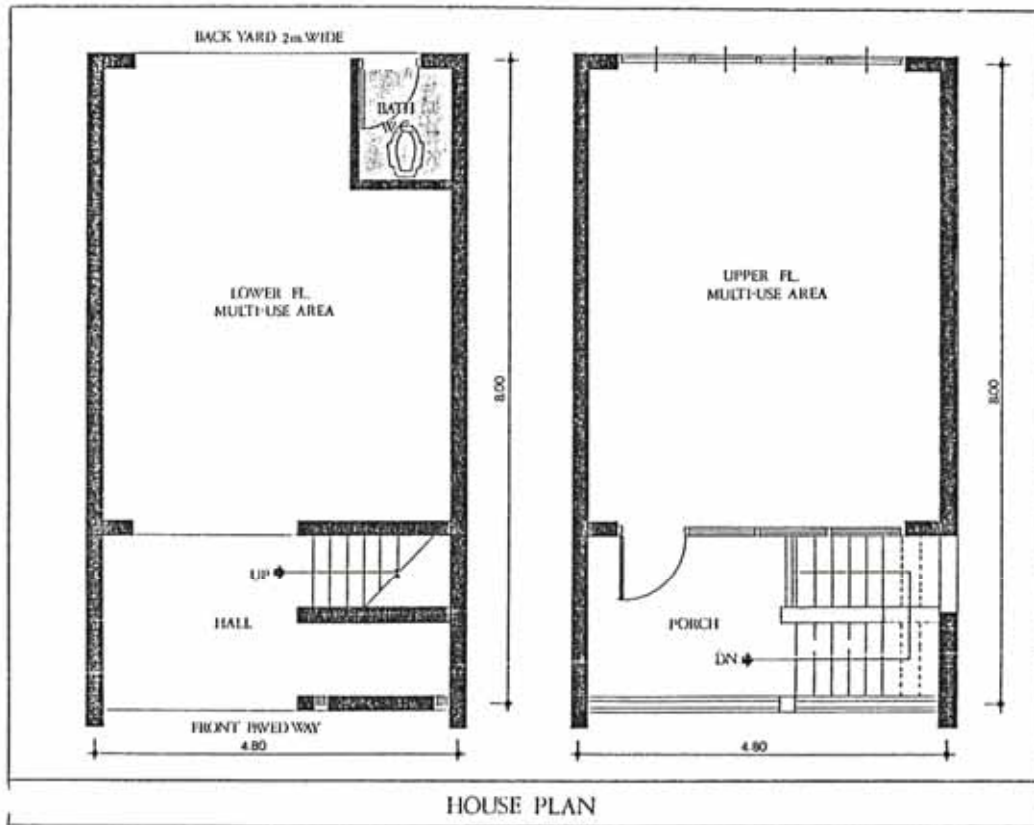
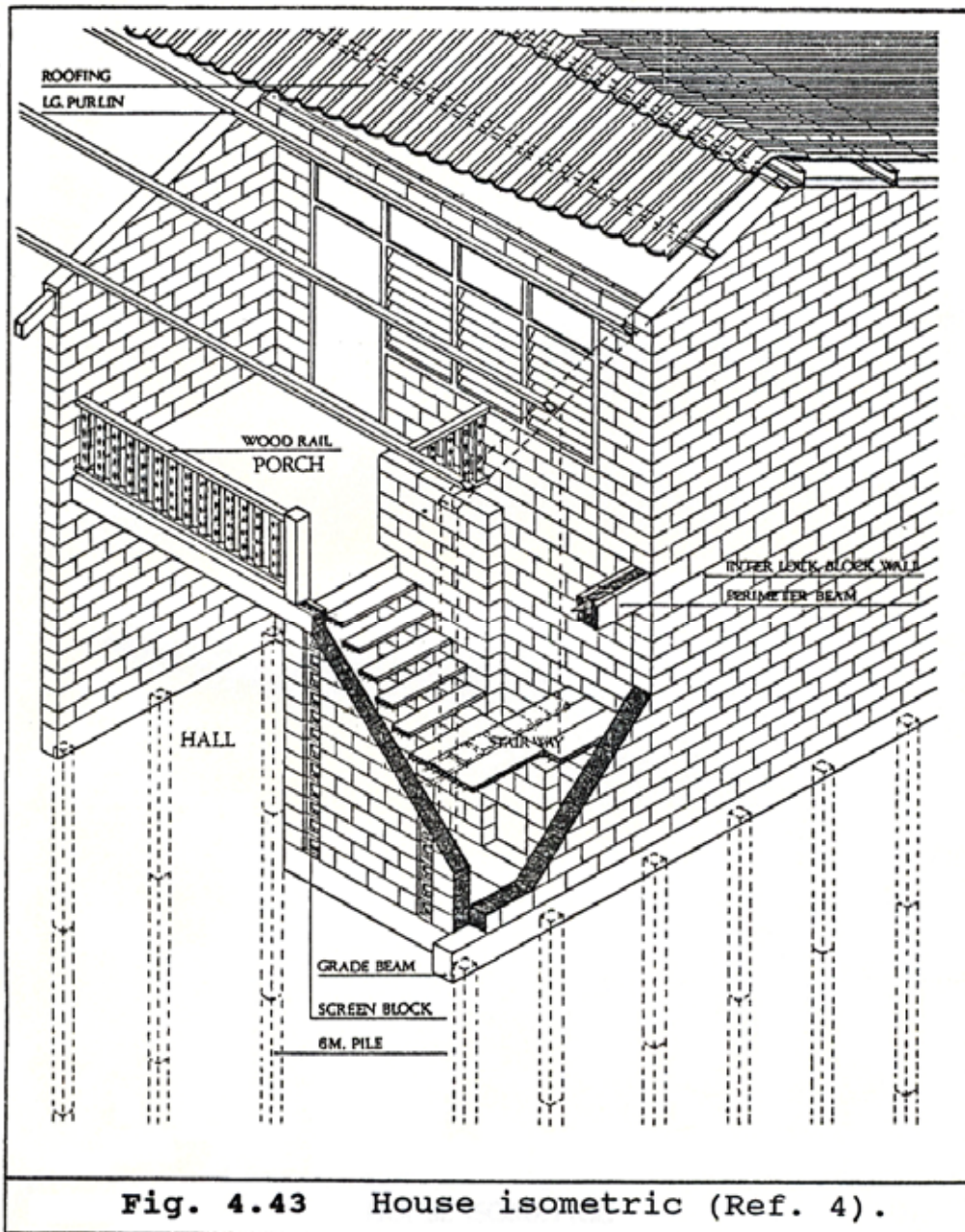


Fig. 4.39 Piling rig and pile (Ref. 4).







The most frequently cited prices were between US \$ 171.15 and 195.60 per m² for detached houses, between US \$ 122.25 and 146.70 per m² for town houses and row houses.

The technology utilized has flexible ability, and is therefore suited to unskilled labour. The long period of construction allows people to master the tasks required.

There are no difficulties in training the people to use machinery and tools. The participants appreciate machinery and work towards the continuous improvement and development of new tools. Since time is always limited and labour is in short supply, any labour-saving device is welcomed.

4.4.7. Community Participation in Constructing Low Cost Housing

Low cost housing schemes could be constructed through forms of self-help, either individually or mutually, modes of organizations or through contractors. There are housing schemes where community members (users), constructed their own houses without the help of a contractor. On the other hand there are low cost housing schemes built completely by a contractor. Between these two limits, there are also cases where the community calls for the help of skilled manpower, contracted to perform parts of the projects where the community (users) do not have the know-how. This is what is called "contractor" contribution, (1).

By comparing individual self-help, mutual self-help and contractor housing construction in time, cost, skills and control required, certain results are found. These results are presented in Table (13) (2).

-
- 1 Rudolf Atman, Paper on: User's Potentials in Housing Production Process, 1986, p. 4.
 - 2 United Nations Center for Human Settlements. (Habitat), Community Participation in the Execution of Low-Income Housing Projects, 1984, p. 22.

Table 13 Comparison between individual self-help, mutual self-help and contractor in housing construction by time, cost, skills and control required

	Individual self-help	Mutual self-help	Contractor
Time	It takes a long time for the allottee to complete his house if he can only work in his spare time	Although faster per housing unit than if built by individual self-help, it still takes a long time to complete all houses for the group	The house can be built quickly
Cost	The cost of the house is less than for a complete house provided by the contractor as the allottee provides the labour	The cost of the house is lower than for an individually built house as the group provides the labour, and building materials can be purchased in bulk.	The house is more expensive than a self built house, as the contractor also has to make a profit
Skills	Unless he is a skilled labour or receives an intensive training, the allottee will meet difficulties concerning standards.	Unless the group includes some skilled labour or receives an intensive training, it will face the same problems as the individual self-help builder	The contractor provides all the skilled and unskilled labour; he can make use of community members as unskilled labour.
Control	The allottee is in full control of the construction process, he can build, what, when and how he wants (Within limits set by the project).	The group is in control of the construction process, this requires management skills and conflict-solving abilities.	The contractor controls the construction process.

From the above comparison, it is clear that each of the three modes of housing construction, separately, have Advantages and disadvantages.

It would be better to combine those modes in one process, where each mode achieves a certain task or part of the housing construction process according to their ability. The construction process could be divided into the following items: excavation, foundation, primary elements, secondary elements, finishing and services. For the types of housing schemes, they may be considered as a serviced site, in order that users may individually develop their own house later on. The house on the other hand, may vary from structures where only core housing is concerned, up to complete serviced low standard house.

By tabulating the construction process and types of housing schemes, it is possible to identify the three levels of community participation in the construction of low cost housing, through contractors input or self-help or mutual help, in three modes of construction. These modes are contractors contribution, community participation and contractors performance as shown in Table (14).

It is obvious from the previous table that low cost housing projects could be better achieved through community participation with contractor contribution in some technical parts of the construction process, where the know-how and ability are not available to the community. In this case, the contractor contributes in building a toilet and a kitchen, which requires high skilled labour for implementing water connections and sewage pipe system. Fixing sanitary equipments is a sophisticated process for community members to do it. Also, the contractor can construct primary wall which is essential for identifying the housing space. A prefabricated sanitary system made of fiber glass could be a new method for community participation in fixing sanitary equipments (1)

1 Al-Alfy, Mahmoud Hisham, Towards Prefabricating the Rural House, P.H.D. Thesis in wiman, DRG, 1972.

Table (14): Modes of Construction and Construction Process

Construction Process Modes of Construction	Substructure		Superstructure						Finishing			Services		
	Excavation	Foundation	Primary Element			Secondary Element			Wall	Floor	Roof	Kitchen	Toilet	Commod.
			Wall	Floor	Roof	Wall	Door	Window						
Contractor Contribution	MH	MH	Co	MH	MH	SH	SH	SH				Co	Co	SH
Community Participation	Co	Co	Co	Co	Co	SH	SH	SH				Co	Co	Co
Contractor Performance	Co	Co	Co	Co	Co	Co	Co	Co				Co	Co	Co

Types of Housing Schemes	Modes of Construction														
	Excavation	Foundation	Wall	Floor	Roof	Wall	Door	Window	Wall	Floor	Roof	Kitchen	Toilet	Commod.	
Serviced Site															
Core House															
Serviced Core House															
Complete low cost house															

Co = Contractor SH = Self-help MH = Mutual-help

On the other hand, community members through mutual-help do the excavation for the foundation and for water and sewage pipes. Also, they construct together the primary floors and roofs, so that the core of the house is complete. While community members through self-help improve and extend their own houses individually according to their own circumstances. As mentioned before, technical assistance and building tools could be given to community members, by the intermediate organization, to help them in housing construction.

It is worth mentioning that there are a number of conflicts or clashing interests between the contractor, who is commercially oriented, and community members, who are socially oriented. On one hand, the contractor is trying to gain profits as much as possible, for him, time is money. He is only willing to work with others when there has been a clear deal made. Also, he is producing housing units and then selling them, so he does not use the product. While on the other hand, community members (users) are trying to construct housing units at the lowest cost, for them time is available.

4.5. The Need of Training Modules for community participation

The use of training modules is a very important media in training programmes. It is also one of the main steps to achieve community participation in housing projects. All the steps of the training programme and how to implement them are explained in these modules. These modules are considered to be the main guide for the trainers as well as for the trainees in any housing project.

The United Nations Center for Human Settlements (Habitat) has published a series of training modules dealing with community participation in different fields. Three of these training modules deal with three main topics which are: training in site and services schemes, training in squatter settlements upgrading and training in cost recovery and affordability. Each of those training modules consists of the following two parts:

Part one: Guidelines for the instructor:

Part two: Course paper:

Part One: *The Guidelines for Instructor*

This part explains the use of the course module in the training session. The guidelines list the materials required, outline the timing and the organization of the session. It also explains how the instructor is to be prepared for the training course.

The guidelines for the instructor are similar in the three training modules. The target group of these training modules is the project staff which includes the project managers and staff involved in community participation. The number of participants in each programme ranges from 10 to 20 persons. The duration of these training modules is 2 or 3 days. The place for training has to be located in an easy site accessible to the project site. The equipments needed are: a blackboard or newsprint and, if possible, a film projector or video equipment.

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In this phase of training, the module indicates that the instructor has to prepare a background paper before starting the training session. The paper should provide data on planning and ongoing projects, and list the principles for their execution. One day before the sessions start, the instructor has to distribute the course paper, the background paper and any other relevant materials to the trainees, so that they have the opportunity to read them.

The module divides the training programme in two phases; training session for one day and fieldwork assignments for one or two days. In the training session discussions are encouraged between the instructor and the trainees about the course paper and the opportunities and limitations of community participation in the execution of the projects. In the fieldwork assignments participants are divided into groups of three to five persons, each group is assigned the task of preparing answers to a number of questions raised in the course paper. The groups of participants can find the answers of those questions by interviewing government offices, visiting similar projects and reviewing literature about other projects executed in other towns and countries.

At the end of the fieldwork the module recommends a review session for one day, where each group has to present the results of its fieldwork so that it is feasible for all participants and the instructor to review the whole work done.

Part Two: Course Papers

This paper is prepared to be distributed to the trainees. Each course paper, of the training modules, Describes the various aspects of community participation in its field of concern. It also raises problems and difficulties which have to be solved for a successful implementation of community participation in each of the three main topics.

The three course papers were prepared as a general outline for a training course on community participation in the following topics: in the execution of site and services schemes, in the execution of squatter-settlement upgrading projects and in cost recovery and affordability. Each of the course papers is described as follows:

4.5.1. Training in site and Services Schemes

This course paper as proposed in the module describes the execution of sites and services schemes from the perspective of community participation. In this respect, ten phases can be distinguished in project execution. Each of these phases requires some form of collaboration between the project authorities and the beneficiaries. These phases are as follows (1):

No.	Phase	Main Responsibility
1.	Formulating eligibility criteria	project authorities (2)
2.	Recruitment of beneficiaries	Project authorities
3.	Planning the settlement	Project authorities
4.	Project budgeting	Project authorities
5.	site development	Project authorities
6.	Plot allocation	Project authorities or beneficiaries
7.	Designing the dwelling	Beneficiaries
8.	Financing plot development	Beneficiaries
9.	Construction of the dwelling	Beneficiaries
10.	Repayment of loans and payment of service charges	Beneficiaries

1 United Nations Center for Human Settlement (Habitat), Sites and Services Schemes: The Scope for Community Participation. Training Modules, 1984, p.2.

2 Project authorities could include an intermediate organization between the community and the local authorities.

Each of the above phases is described in the following pages.

Phase 1: Formulating eligibility criteria:

In this phase the project authorities, as referred to in the module (1), decide what kind of people are supposed to benefit from the project. The criteria most commonly used for sites and services schemes are:

- a. The income of the beneficiaries: since they have to make regular payments for the plot, the house, the infrastructure and the services they receive, they also have to earn a certain minimum amount of money.
- b. The length of the beneficiaries stay in the urban area: to give priority to those families who have already been living in the area for some time over those who have just arrived.
- c. Secondary requirements, e.g., the beneficiary cannot own other property in the urban area, he or she has to be head of the family, and he or she has to have a fixed employment.
- d. It is advisable to define the target group of a site and services scheme as the population of one or more specific areas.

The criteria could be adjusted according to the Characteristics of each project. But they remain valid in principle for most projects.

Phase 2: Recruitment of Beneficiaries

As the target groups have been defined the project authorities as mentioned in the module can prepare a general description of the scheme; its location, number of plots, plot sizes, and overall costs. The next step for the project staff is to make the scheme known to all potential beneficiaries and to invite them to apply for a plot. This is done through means of communication, e.g., newspapers, radio organizing meetings, distributing papers. The announcements

1 Ibid, p. 4.

Must be clear, detailed and explain everything about the project specially the role of the beneficiaries and the project staff (Fig. 4.44).

The applicant has to complete a specially designed form and submit documents required to the project staff. This form must be obtained and submitted from an office near their residential area or place of work. The project staff checks the application forms and documents, so that only those applicants who meet the eligibility criteria are considered for a plot in the scheme. Selecting of group of households makes community participation in the execution of the scheme easier than selecting individuals. The authorities then have to inform the applicants about the results of their selection and invite them to sign the contract with them. This invitation is done through mail delivery system, or radio, or newspapers, or by the municipality office. It is necessary that the community should be involved in this process in order to create competitive atmosphere between its members.

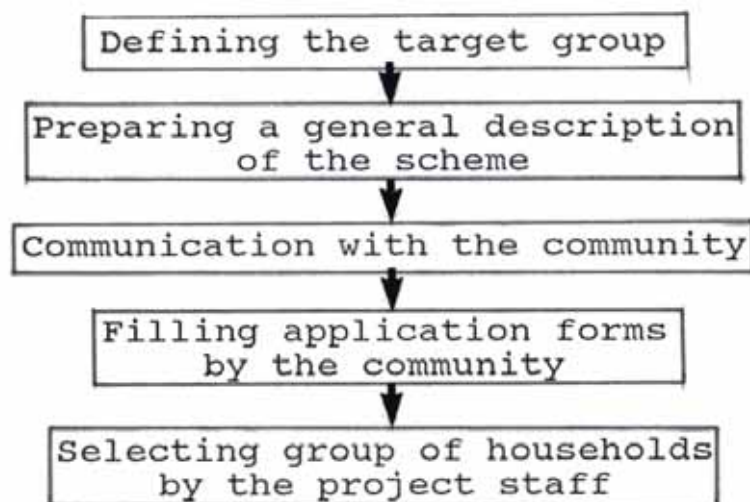


Fig. 4.44: Recruitment of Beneficiaries

Phase 3: *Planning of the Settlement*

Settlement planning as mentioned in the module starts as soon as the target group has been defined. The income level of the target group determines to a large extent what kind of shelter the beneficiaries can afford.

If the selection of Beneficiaries' takes place immediately after the basic decisions have been taken by the authorities and before the detailed planning starts; there will be an opportunity for the beneficiaries to become involved in the detailed design of their settlement. This is also one of the objectives of public participation.

The criteria for site location as mentioned by the module includes the following points.

- A. Location close to employment opportunities.
- B. Good transport linkages with the city center.
- C. Affordable land price.
- D. It should form a part of a city within a larger development plan.

The settlement pattern is to be adapted not only to the paying capacity but also to the living conditions of the target population. The plot size and layout make it possible for the occupant to carry out informal economic activities to improve his income. Infrastructure and services have to be provided at costs which the settlement residents can afford. But the costs of constructing these services could be reduced, if the beneficiaries are willing to contribute as labour in the construction. This has to be investigated during the planning process of the project in order to define the level of community participation.

Community involvement in planning is necessary in the detailed planning. This involvement can be given shape in two ways:

- a. Active participation, through consultation and involvement in decision-making on each component of the scheme. There have to be some form of community organization and leadership to reach decisions as a group.

- b. Passive participation, through detailed studies and surveys of the target group (1).

Phase 4: Project Budgeting

Given the limited resources of most governments, most low-income housing projects are intended to be self financing. The budget of a sites and services scheme is determined in the training module by the following:

- a. The cost of the project components.
- b. The capacity and willingness of the beneficiaries to pay.

The budget of sites and services scheme normally includes the following items:

- a. Land, which is sometimes provided at subsidized rates.
- b. On-site infrastructure within the limits of the settlement
- c. Off-site infrastructure which has to be constructed to link the settlement to the existing urban infrastructure.
- d. Community services.

Sometimes, the budget also includes such items as:

- a. On-plot development, i.e., structure provided on the plot.
- b. Overheads, i.e., cost of the project staff, surveys.

The paying capacity of the beneficiaries is estimated through a socio-economic survey among people who meet the eligibility criteria. This is usually between 15 and 30 per cent of the household income.

In some sites and services schemes, commercial plots are auctioned and a limited number of residential plots are sold at market prices to high-income groups in order to generate additional income which can be used to reduce the price of

1 Ibid

the plots for low-income families, as in the case of Ismailia EI-Hekr projects (1) (Fig. 4.45).

Phase 5: site Development

In sites and services scheme, the preparation of the site and the provision of infrastructure and services are the responsibility of the project authorities, while the construction of the dwelling is left to the allotted. Usually as mentioned in the module, the contractors carry out these works, but, if at this stage the beneficiaries have already been selected, they could take part in the work. For instance they can provide the unskilled labour. This can reduce the price the allotted have to pay for their plots.

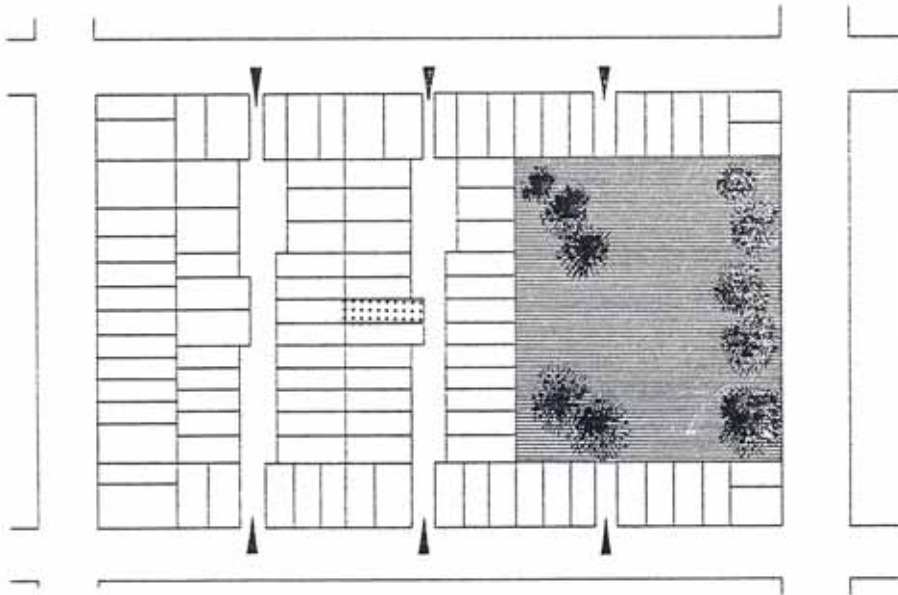
On the other hand, the responsibility of the project authorities in some sites and services schemes is extended to include an initial development of the plot. A wall, a roof, a latrine or even an entire room is constructed on the plot by the project authorities.

Phase 6: Plot Allocation

Plots can be allocated by lottery, as one way with a possibility for allotted to change plots if they are not satisfied. However, for the sake of community participation, it is better to involve the allotted actively in the plot allocation in order to cover the responsibility in the process.

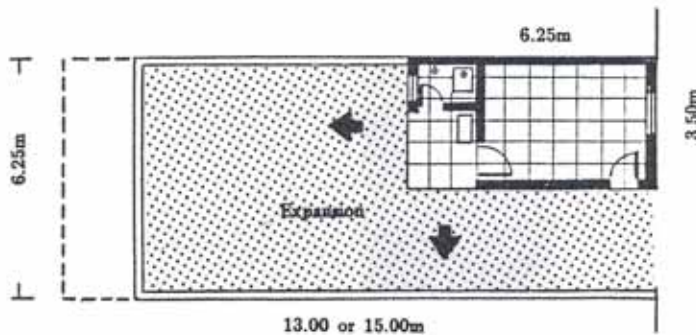
For the implementation of the scheme the module prefers that the project staff has to have intensive contacts with the allotted. This contact is facilitated if the settlement is divided into distinct neighborhoods, each with its own community organization and leadership. The simplest way to create communities in new neighborhoods is to ask the beneficiaries to form groups of 20-25 families and to

1 Forbes Davidson, Ismailia. From Master Plan to Implementation, Third World Planning Review, vol. 3. No. 2. May, 1981, p. 171.



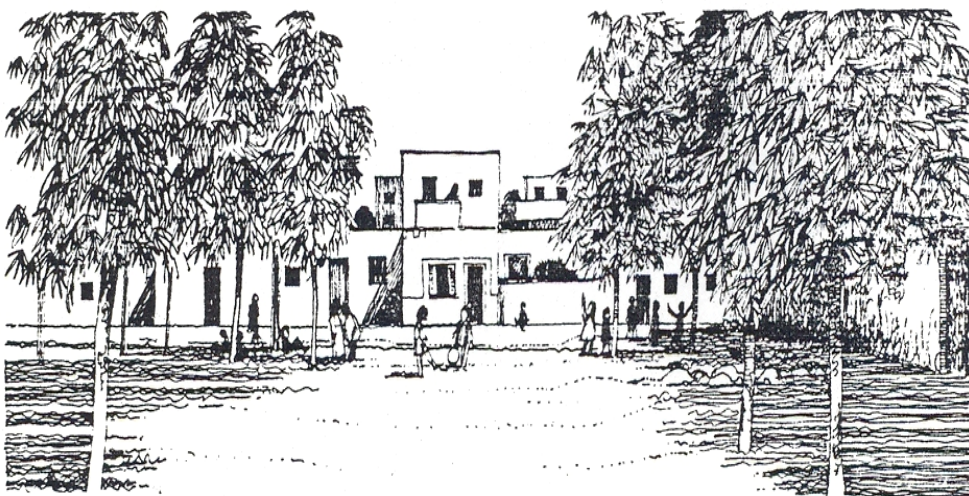
A: Layout of the overspill area.

Fig. 4.45: An overspill area, sites and services scheme, for families affected by the upgrading project in Ismailia (Ref. 7).



CORE HOUSE TYPE 3

B: Plan of one of the core houses proposed.



C: View of the overspill area from the park.

Allocate a neighborhood of 30-35 plots to each of these groups (1).

Phase 7: Planning the Dwelling

Allottees have to decide one house design carried out of architects of the project staff and make arrangements to obtain funds to buy building materials and hire labour. The main task of the project staff as referred to in the module is to provide technical and financial assistance to the allottees. The project authorities can leave it completely to the allottees to decide what kind of house to build on their plots (2). But, in most sites and services schemes the allottees are bound to construct, within a given period of time, a house which meets certain standards set by the project authorities. Unfortunately, standards often make the construction of the house expensive for the allottees.

The project staff may start with organizing meetings of allottees at neighborhood level to explain the basic ideas of planning a house and to provide all information the allottees may ask for. Usually the project staff prepares a number of house designs from which the allottees can choose. If, however, the allottee wants to build his house according to his own design, he is free to do so, but he has to submit the design to the local authorities to obtain a building permit.

In several sites and services schemes, the project staff uses three-dimensioned scale models to show the allottee the different housing designs. In other schemes full-scale model house are built on site (3). In this case the conflict between the requirement of the allottee and the project architect should be bridged. The allottee knows what he wants and the

1 Shlomo Angel and Zillac. Phoativongsachain, Building Together, 1981, p.24.

2 Peter J.Swan, Seven Asian Experiences in Housing The Poor, 1980, p. 51.

3 Joint Housing Project Executive Agency. Ministry of Housing and Public Utilities, Helwan Housing and Community Upgrading for Low Income Egyptians, 1984, p. 44.

Architect has to visualize these needs in the most simple way. In China the bare-footed architects are assigned for this job (1).

Phase 8: *Financing Plot Development*

In a self-financing sites and services scheme, the allottees have to pay for the serviced plot, building materials and labour unless they build houses on a self help basis. The project, therefore, has to provide loans to the allottees which they have to pay back in monthly installments. The module indicates that the terms and conditions for the loans should have been explained to the allottees during the first briefing sessions, and to be reported when the allottee signs the contract for the plot. The loan agreements have to be written for the allottee in simple words and preferably in the language which the allottee understands. The approach to this process should concentrate on gaining the confidence of the allottee. Previous examples are a good aspect in this connection.

Usually, repayment of the loan is spread over an extended period of time from 10 to 30 years, while the time perspective of the allottee may not exceed weeks or months because of the insecure job situation. In most cases the project authority often runs a building materials store where the allottee can buy materials at cost price (2). Loans can sometimes be provided as building materials, so to ensure using it in housing construction.

Phase 9: *Construction of the Dwelling*

Three basic modes of house construction can be distinguished in a sites-and services-scheme in the following categorized systems

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- 1 Ibrahim, Abdelbaky Mohamed. Rural Housing and Bare Footed architects, Alam Albenaa Magazine. Center for Planning and Architectural Studies, 67th Issue. March, 1987, p. 5.
 - 2 Meera Bapat, Paul Baross, Parwoto Tjondrasugianto, Community Based Housing Development, September, 1985, p. 71.

- a. Individual self-help: where each allottee builds his own house.
- b. Mutual self-help: where a group of allottees build the houses for the members of the group. As Hassan Fathy points to it, one person cannot build one house but ten persons can build ten houses (1).

Contractor-built: where an allottee or a group of allottees hire skilled labour to build their houses.

Whether as general contractor or single contractor for each stage of the building process.

The main task of the project staff in this phase is to assist the allottees in the construction of their houses by providing them access to money, building materials and technical know-how.

In the case of individual self-help, the allottees main problem is lack of time, skills and money to construct their houses within a given period to meet the standards set by the project.

In the case of mutual self-help, building materials may be obtained cheaply if bought in bulk. The construction time per housing unit could be shorter because families work together in a cooperative manner. The families can divide the tasks between themselves making the construction process more efficient (2).

The project staff not only has to assist the allottees in the construction work as much as possible but also has to help the allottees to form building groups and elect group leaders. Moreover, members of the building groups have to be trained in management, book-keeping, decision making, and conflict resolution. In the case of building new communities in newly developed areas, the project staff may arrange

1 Fathy, Hassan, Architecture for the Poor. 1973, p 119.

2 Shlomo Angel, Zilla C. Phoativongsacharn, Building Together. March 1981, p 7.

Simple shelters for the allottees in order to accommodate them during the initial stage of the project, the shelter could be converted later on to other uses as poultry breeding or storing productive equipments.

In the case of contractor built project, the contact between the allottee and the contractor can be divided into three steps:

- a. Appointing the contractor.
- b. Supervising the work of the contractor during the construction of the house, and
- c. Assessing his work after the house has been completed.

It is advisable that a group of allottees can appoint one contractor to build their houses if they can agree to have similar designs. This will reduce the cost of each house.

Phase 10: *Repayment of Loans and Payment of Service Charges*

The ability of the beneficiaries to repay their loans and to pay their service charges depends on the income of the allottees and the level of the charges they have to pay. Income and employment generating activities could be part of the project. To increase allottees income, the project authorities should think not only of formal economic activities, but also of informal activities. This depends on the work opportunities which could be generated in the site or near it (1).

The allottees of a site-and-services scheme should learn how to maintain and improve their houses at low cost, and utilize their infrastructure because this may save the authorities, and thereby the community, considerable amounts of money. Certain obligations should be enforced in order to help the community to maintain their houses. Social upgrading is another way in this respect.

1 Peter J. Swan, Seven Asian Experiences in Housing The Poor. 1980, p. 161.

The willingness of the beneficiaries to repay their loans and pay their service charges depends on meeting their needs, priorities and expectations. This can be ensured by involving the beneficiaries in the planning and decision making for the project. Regular and intensive briefing of the beneficiaries about the project, its costs and the way the charges have been calculated also, stimulate the allottees to pay. Community participation in this process will facilitate the implementation of the project.

Collecting of charges can be organized on an individual basis where each individual household pays directly to the authorities or on a collective basis where the authorities collect the payments per neighborhood. This depends on the social or cooperative characteristics of the community (1).

4.5.2. Training in Squatter Settlement Upgrading projects

The training module referring to this course paper describes the execution of squatter-settlement upgrading projects from the perspective of community participation.

In this respect the module refers to ten phases that can be distinguished in project execution, and each of the phases requires a particular involvement of the community.

These steps are as follows (2):

1. Selection of the squatter-settlement.
2. Surveying the existing social and physical conditions.
3. Community organization.
4. Establishment of priorities.

1 Carole Rakodi and Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes. 1981, p. 74.

2 United Nations Center For Human Settlements (Habitat), Community Participation in The Execution of Squatter Settlement Upgrading Projects. 1985, p. 4.

5. Concept planning.
6. Project financing.
7. Detailed planning.
8. Implementation.
9. Payment of charges.
10. House construction and improvement.

Each of the above phases are explained in the following items.

Phase 1: Selection of the squatter-settlement:

When determining which settlement is qualified for regularization and upgrading, the local authorities normally apply two main criteria:

- a. The legalization of the squatter-settlement must not interfere with other important plans for the development of the city.
- b. The cost of regularization and upgrading must not exceed the paying capacity of the community and/or the local authority.

In most cities, squatter-settlements on valuable land would not last very long, as the landowner or the local authorities would immediately interfere and demolish the settlement in order to be replaced by new development. Also, the land occupied by squatter settlements often suffers from one or more difficulties which have prevented it from being developed.

In defining the urgency of settlements upgrading, the local authorities tend to look at some characteristics such as the population where large settlements have priority, the age of the settlement where old settlements have priority and the over-all living condition in the settlement where high Density settlements with little infrastructure and few services have priority (1).

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Once the squatters feel sufficiently secure, by not demolishing their houses, they will start improving their houses and will organize themselves and elect local leaders who will try to gain support from politicians for the settlement improvements. This phenomenon has been noticed in the case of informal housing areas in Helwan (2) (see 3.6.3). The authorities will be under constant pressure from squatter communities and others to regularize and upgrade certain settlements as a first priority, and the selection criteria may eventually be forgotten. Illegal land ownerships will be an encouraging force for the community to seek the regularization of their settlements. This is the main playing card in the hands of local authorities to deal with the settlers for settlement upgrading.

Phase 2: surveying

For the collection of data, four different surveys are normally conducted. These surveys include the following areas as mentioned in the module:

- a. Reconnaissance survey.
- b. Physical survey.
- c. Socio-economic survey.
- d. Inventory of infrastructure and services.

The purpose of a reconnaissance survey is mainly to acquaint the project staff with the settlement and its population, and to collect some general data. A physical survey is a means of portraying and summarizing the various physical features of the settlement. A socio-economic survey collects demographic data and looks into the living conditions of the population.

1 Ibid.

2 Joint Housing Projects Executive Agency. Ministry of Housing and Public Utilities, Community Upgrading An Urban Development Policy For Egypt. 1984, p. 12.

It may also serve as a means of collecting data on community organization and local leadership. Special design for survey forms is to be sought. The question should be simple and direct. Certain psychological consideration should be recognized in this connection.

The project staff has to conduct the reconnaissance survey of the settlement, and a community rarely has the technical skills to carry out an accurate physical survey. The idea of asking the community to carry out a socioeconomic survey and an inventory of infrastructure and services is, however, worth considering. The validity of the data collected is usually questionable if surveyed by the official authorities.

Two factors have to be taken into account: the technical ability of the community to conduct the survey and the reliability of data collected by its members. Community participation in the survey will be most successful if:

- a. the settlement is small
- b. the community is homogeneous
- c. The data collected by the community can be easily checked by the project staff. Individuals who can read and write could be employed by the project for this purpose.

It is advisable that the authorities also make a formal announcement about the project and explain the purpose and the procedure followed. It is important that the community has access to the results of the various surveys, so that it can understand why the surveys have been conducted and in order to make corrections and add information. The training of the members of the surveying team is a part of the training programme in community participation (1).

1 Carole Rakodi and Ann Schlyter, Upgrading in Lusaka. Participation and Physical Changes, 1981, p. 67.

Phase 3: Community Organization

Participation of residents in the planning and implementation of a squatter-settlement upgrading project requires some form of community organization. The surveys can reveal three different kinds of situation which can be expected in the settlement (1):

- a. There is no appropriate organization in the settlement.
- b. There is one organization which covers either the population or only a part of it.
- c. There are two or more organizations each covering some portion of the population (see 2.1.4).

The fact that no organization exists may be an indication of the instability of the settlement's population (see 3.8). If there is only one organization in the settlement it seems obvious to use that organization as a vehicle for community participation. It is essential to know if the organization will be able to represent the entire population, or only specific categories of residents. If there is more than one organization in the settlement, a choice will have to be made, unless the organizations can be persuaded to join hands. The nature, structure and the effectiveness of each organization is essential to be considered.

Participation by the community in the execution of a project through community organization presupposes the participation of individual residents in the community organization.

Phase 4: Establishment of Priorities

In order to establish the priorities, it is necessary as indicated by the module to make an inventory of the housing

1 United Nation Center For Human Settlement (Habitat), Community Participation in The Execution of Low-Income Housing Projects. 1984, p. 9.

Needs and problems of the settlement residents. The inventory can be prepared in the following various ways mentioned in the module (1):

- a. The project staff assesses the living conditions in the settlement and prepares a list of the improvements considering the most urgent needs.
- b. The project staff discusses the living condition in the settlement with a selected group of local leaders from the community and prepares a list of the most urgently needed improvements in consultation with the leaders.
- c. The project staff approaches the population of the settlement and ask the people to list their needs and problems with regard to housing.

Another way to approach the community is through socioeconomic survey by adding two or three questions about the most urgently needed improvements.

The list of problems, causes and solutions is presented by the project staff to a meeting of the community or its representatives. In the meeting, the staff shows and explains very clearly what the exact relationship between problems, causes and solutions (2). The staff has to make clear to the community the following points as spelled out in the forming module:

- a. The government cannot afford to finance the cost of upgrading all squatter settlements in urban areas, and the beneficiaries of the project will have to pay all or most of the costs of improvements.
- b. The amounts mentioned in the preparatory studies by the staff are only estimated to facilitate the establishment

1 United Nations Center For Human Settlements (Habitat), Community Participation in The Execution of Squatter Settlement Upgrading Projects, 1985, p. 14.

2 Harrington E. jere, Paper on Community Organization and Participation in The Lusaka Squatter Upgrading November 1980, p. 7.

Of priorities within the financial constraints of the project.

- c. The contribution of free labor and materials community can reduce the costs of certain components (see 4.4.7). by the project
- d. Beside developments costs, the operational and maintenance costs applicable. Community has to pay and the user charges if

It is now up to the community to decide which improvements it wants, within the financial constraints of the project. But the project staffs have to see that all groups have the opportunity to voice their opinion. This could be achieved in organized meetings called by community leaders.

Phase 5: Concept Planning

The planning of the settlement is carried out in two stages; concept planning and detailed planning. The objective of concept planning is to integrate the settlement into the over-all urban fabric and urban infrastructure. Detailed plans usually covering what is considered to be one neighborhood, show details of the proposed infrastructural improvement, exact location and land use of the individual plots(1) (See 2.1. 5) .

The planning of squatter-settlement regularization and upgrading is constrained by a number of factors as follows:

The preservation of the existing housing stock.

- a. The integration with the urban fabric and infrastructure.
- b. The technical possibilities for improvement.
- c. The cost of regularization and upgrading.

1 Carole Rakodi and Ann Schlyte, Upgrading in Lusaka. Participation and Physical Changes. 1981, p. 70.

As a result of these constraints, the scope for planning is rather local. Consequently, the scope for community participation is also limited; as the project planners are simply looking for the technical solutions which are feasible in view of these constraints. When the concept plan and the financial plan have been completed, the project authorities call a meeting of the community or its representatives to explain the proposals, and the final decisions on the proposals are taken. It is, however, also possible to give the residents a formal opportunity to raise objections to the proposals, these objections are discussed by what could be called a public objections hearing committee to take the final decisions.

Phase 6: Project Financing:

Squatter-settlement upgrading projects usually have to be self-financing. This means that the beneficiaries have to pay all or most of the costs of the project. The costs of the project include the cost of the land, the development costs of infrastructure and services, and sometimes also the project's overhead costs. In addition to the project costs, the beneficiaries are expected to pay the recurrent costs of the infrastructure and services provided; these include operating and maintenance costs and consumer charges. In some cases subsidies are provided by the local authorities to assist in upgrading operation.

The total cost of the project must not exceed the paying capacity of the settlement's population. But in view of the instability of the population, it is difficult to establish the paying capacity of the population.

The only way to make the project self-financing, to achieve substantial improvements and to retain the poorest section of the population in the project, is to make arrangement for a cross subsidy within the project. This can be achieved in various ways:

- a. Assuming that there are some vacant plots in the settlement, the project authorities can sell these plots to the highest bidder, as being practiced in Ismailia EIHekr project(1).
- b. The project authorities can charge high rates for rich families or for existing commercial and industrial plots, or for large plots assuming that rich families have large plots.
- c. Another way to achieve cross-subsidization is to charge part of the cost of the project to the general revenues of the local authorities.
- d. The project authorities can charge the costs of the project not to the individual families but to groups of families, aiming those rich families will assist poor families to pay the charges. This could be achieved within the Islamic values of the community.

Phase 7: Detailed Planning

For detailed planning, the settlement is usually divided into what could be considered neighborhood planning units which represent, as far as possible, socially and/or ethnically homogeneous area. This facilitates community organization and the participation of the neighborhood population.

If the community expresses its willingness to be completely involved in the detailed planning, the project planner can hand over to the community the map of the neighborhood, on which the elements of the approved concept plan have been indicated. The residents can be assisted by the planner to discuss these elements and to reach an agreement as a community. Then the local leaders of the neighborhood then call a meeting comprising the project Staff and the representation of the community to discuss the proposal and to take the reasonable decision.

1 Forbes Davidson, Ismailia: Combined Upgrading and Sites and Services Projects in Egypt, Low Income Housing in the Developing World, 1984, p. 140.

In many cases individual interests affect the decision making of the leaders or the representatives of the community.

If the community shows less than full willingness to be involved in the detailed planning from the very beginning, the planner can prepare one or more proposals for the upgrading of the neighborhood and discuss these with the community at one or several community meetings. The community should also accompany the planner on a walk through the neighborhood, during which the planner can explain his proposals and point out options, and the community can give suggestions and comments. In this case the planner becomes part of the community structure (1) (see 2. 1. 5).

An important element in the detailed plans is the mapping of plots in the neighborhood. This is important to be able to determine who will receive a title for each plot. Community involvement is essential in this part of detailed planning as land disputes can easily arise if the mapping is not done accurately and in accordance with the ideas of the community. It is however advisable to give residents the opportunity to raise objections to the detailed plans, as has been done for the concept plans. Community leaders are to be called upon whenever any dispute arises.

Phase 8: Implementation of the Project

The implementation of a squatter-settlement upgrading project consists of two components:

- a. Regularization: the issue of the title.
- b. Upgrading: the construction or improvement of infrastructure and the extension of services.

Before a title can be issued to a squatter in a regularized settlement, the following steps have to be taken:

1 Carole Rakodi and Ann Schlyter. Upgrading in Lusaka. Participation and Physical Changes. 1981, p. 70.

- a. The squatter has to apply for the title. The application has to be verified. The location and dimensions of the plot have to be verified, and payment has to be made.
- b. Project authorities have to decide whether the title is issued to the owner of the house on the plot or to the actual occupant of the plot who may be a tenant.
- c. The procedure for obtaining a title should be made as simple as possible, and that the various steps in the procedure are properly explained to the residents.
- d. The title deed can be replaced by a lease system in order to preserve the ownership of the land.

The construction or improvement of infrastructure usually does not involve community participation, as, very often, the community does not possess the necessary skills, and do not have the time to participate. Usually, the work is carried out by contractors who are appointed by the project authorities. The contractor could be required to hire unskilled labor from the members of the community. This where the participation of the individual could be sought.

The construction or extension of infrastructure usually requires the realignment of certain roads and the removal of structures in the new alignments. The demolition of these structures can best be done by the community or by the concerned residents.

Phase 9: *Payment of Charges*

Although the development costs of the project are kept to a minimum, the residents are normally not in a position to pay these costs immediately from their own resources. Therefore, as mentioned in the module, the project authorities provides loans to the residents through credit Banks.

Besides a loan is provided to pay the development costs of the project, sometimes loans for the improvement of the houses are also provided; these can be given in cash or in kind (see 3.9).

Normally, loans have to be paid back in monthly installments over a period of 10 to 30 years; but the duration and regularity of the payment can pose problems to poor families because their income may vary from month to month. Some low-income families prefer to repay their loans as soon as possible, so as to feel secure about their house and plot.

The recovery of the loan from the beneficiaries through monthly installments is often the most difficult part in the execution of a project. The module refers to two issues which should be distinguished with regard to cost recovery:

- a. The willingness of the residents to pay.
- b. The method by which the payment are collected.

Residents are only willing to pay if they receive what they want, with timely provision of infrastructure and services to the settlement. Collection of repayments and charges can be done on an individual basis or on a collective basis. Many results could be gained from previous experiences as in the case of financing the upgrading projects in Helwan area (1).

Phase 10: House Construction and Improvement

It is a fact that increased security of tenure as a result of regularization will be sufficient incentive for the residents to invest their savings in the improvement of their houses (2). What the project can do is to provide financial and technical assistance to residents of the settlements who want

1 Joint Housing Projects Executive Agency. Ministry of Housing and Public Utilities, Community Upgrading. An Urban Development Policy for Egypt. September, 1984, p. 20.

2 Ibid

to improve their houses, it can also provide improvement loans or building-material loans. The project staff can give technical assistance to residents in construction techniques. However, most people appoint small contractors from within the settlement to build or improve their houses. It is useful to train small contractors in new and efficient building techniques and to provide loans for purchasing equipment. The use of appropriate building technology becomes essential in these cases (see 4.4).

When many families are affected by the project and there are not enough vacant plots in the settlement, an overspill area adjacent to or very near regularized settlement has to be developed. The overspill area is usually a small sites-and-services scheme. The project provides plots, infrastructure and services, and the allottees have to build the houses (1). In very condensed urban areas the overspill areas are to be chosen within a regional framework. This will be part of the material urbanization policy. Overspill areas should avoid cultivated areas by all means (Figure 4.45). The communities in the squatter-settlements should be aware of the long term consequences of overcrowding and high density problems. This is why the problem of squatter settlements in Egyptian towns should be solved within the urbanization rational policy. In all cases upgrading is a comprehensive process involving social and economic aspects as well as its physical component. The upgrading process of squatter settlements cannot achieve its objectives unless it is based on the upgrading process of the inhabitants of these settlements socially as well as economically.

4.5.3. Training in Cost Recovery and Affordability

The training module referring to this course paper presents an overview of the reasons why cost recovery is being emphasized in low income housing projects.

1 Geoffrey K. Payne. Low-Income Housing in the Developing World, 1984, p. 125.

It discusses the concept of affordability and indicates how the community can be involved in the formulation of affordable projects. It also reviews the problems encountered with collecting payments and proposes ways in which community participation in the collection of payments can be enhanced. Those issues are described in five phases as follows:

1. Cost recovery.
2. Affordability.
3. Determination of affordability
4. Willingness to pay
5. Organizing the collection of payments.

Phase 1: Cost Recovery

Governments of developing countries are trying hard to solve the housing problem of the poor settlement. Instead of providing complete houses, governments through their housing agencies or departments, now provide only land with basic infrastructure and services, while the beneficiaries are responsible for the construction or improvement of their houses. This policy has led to two types of projects, squatter settlement upgrading and sites and services schemes.

Given the size of the housing problem and the limited resources of the governments, the housing agency cannot give the beneficiaries the serviced land free of charge or with a large subsidy. To recover its funds, the housing agency or, more often, the local authority to which the area is transferred after the completion of the project can either charge the low-income families who are benefiting from the development (direct cost recovery), or increase charges such as water rates or property taxes to the population of the urban areas as a whole (indirect cost recovery).

Usually, cost recovery is a mixture of direct and indirect charges, and will vary from (1):

1 United Nations Center for Human Settlements (Habitat). Community Participation. Cost Recovery and Affordability, 1985, p. 1.

- a. **Land:** which could include the value of land as well as the cost of demarcating the plot, registering the title and issuing the certificate.
- b. **Off-site infrastructure:** which includes all the infrastructure necessary to connect the site to the existing city-wide services.
- c. **On-site infrastructure:** which includes all the services on the site. Its capital cost is likely to be recovered directly from the beneficiaries.
- d. **Community facilities:** which are commonly regarded as a government service provided free to the beneficiaries such as schools, mosques. In some cases the residents of the area make voluntary contribution towards the construction of the community facilities.

In house construction, the beneficiary is expected to finance the construction or the improvement of his house. He may choose one or more of the following ways:

- a. By using his own savings.
- b. Through loans from families, friends or employers.
- c. Through loans from credit unions, banks and other financial institutions.
- d. Through a loan from the housing agency or the local authority.

If he borrows money to construct or improve his house, he will have to repay the loan at the interest rate and over the repayment period required by the lender. So the beneficiary of a housing project has to pay for:

- a. The provision of land, infrastructure and services.
- b. The operating cost of the services.
- c. The construction or improvement of the house.

Phase 2: Affordability

If the capital cost of the housing developments is to be directly charged to the residents, this cost must be based on what they can afford. It has become a general practice for housing agencies to undertake socio-economic surveys of their target group. Such socio-economic surveys focus on current income levels and expenditure patterns. Having established the income levels of the target group, the next step is to find out how-much of this income is available to be spent on housing. It is commonly assumed that the low-income earner can afford to spend between 20 and 30 per cent of his income on housing. This figure is used to calculate the capital cost of the house and if it is affordable.

Socio-economic survey presents only an over-all picture of current income levels, and even this picture may be inaccurate, because respondents are often reluctant or unable to answer questions on their income and financial resources in general. Moreover, by concentrating on present income as measure of the ability to pay for housing, such surveys fail to take into account other important factors which are difficult to assess, such as (1).

- a. Additional sources of finance for housing such as the savings of various members of the extended family. In fact, many families finance house construction out of the transfer of family savings, and other forms of loans, and not out of current wage income.
- b. Potential future income and expenditures which will depend on employment opportunities being improved by the project. Also the opportunity to build rooms for rent may also increase income opportunities.
- c. Priorities for housing where the present way of assessing the ability to pay for housing takes little account of the individual's own priorities for housing.

¹ Ibid, p. 9.

Phase 3: Determination of Affordability

The housing agency should enable the community as a whole to determine what it is able to pay for housing. For this purpose, the agency's planning team undertakes initial surveys and holds preliminary discussions with the community about the proposed development. On the basis of these preliminary findings, the team prepares proposals for layouts, infrastructure and services for further discussion with the community. These proposals focus on the standards of infrastructure and services to be provided and on the cost of each option so that the community can base its priorities on a clear understanding of the financial implications of each.

Obviously, it is not possible for the planning team to consult every individual in the community. Discussions have to be held with a small representative group which passes on information to the rest of the community. Those representatives could be traditional leaders, political leaders or committees of co-operative societies.

Establishing a method of presenting the planning team's proposals, so that they are understandable for the community, is important as well as ensuring that the community is properly represented. The planning team must decide how to present these proposals to the community representatives, given the local circumstances. This could be presented in five charts as follows (1):

First, a layout should be prepared, and the costs of infrastructure and services for that layout have to be established. Cost estimates can be prepared on a worksheet. If several layouts are to be considered each will require a separate worksheet and a separate servicing options chart.

1 Ibid, p.15.

- a. The first chart illustrates the type of options which might be made available (1). In reality, the options would be based on suggestions made by the community in the course of the preliminary discussions with the planning team. The servicing options could be taken as total packages which progress from a basic level of infrastructure and services, being considered as service level 1, to full individual connection, being considered as service level 5. They can also be regarded as separate options.
- b. The second chart illustrates the stages through which the project is likely to proceed and the time that each of these stages might take. This is done with regard to the rate of inflation and the rise in the cost of materials and labour (2).
- c. The third chart shows how the capital cost might be allocated. How much of the capital cost of the infrastructure and services should be recovered directly from the beneficiary, and how much recovered indirectly through rates or utility charges. The capital cost includes the fees for the design and supervision of the engineering work (3).
- d. The fourth chart indicates the amount that the beneficiary will have to pay per month for service depending on the repayment terms of the capital cost. It also indicates the recurrent charges which are likely to be collected by the local authority. Other recurrent charges may include rates to cover the operation of the local authority in street cleaning, fire protection, etc. Further charges might be

1 Ibid, p.40.

2 Ibid, p.41.

3 Ibid, p.42.

Added for the extension of refuse-collection services and road maintenance to this particular site (1).

If the community considers this amount to their income, various possibilities can be reducing it. They include: be too big for discussed for

- a. Choosing different servicing options. Where the planning team might propose to the community that some services could be installed under the project now and others added later as they can be afforded. For example, the main water pipes are sized to be large enough for individual connections but initially serve standpipes only.
- b. Community self-help. Where the community might decide that, rather than taking relatively expensive loan for all the service options, it will undertake to finance and implement some part of the development itself.
- c. On-side subsidies. The planning team can explore other possibilities for subsidizing plots intended for this group by charging market prices for large, or favorably located plots, or those allocated for industrial or commercial use.
- d. Down payments. The collection by the community of contributions towards down payments for infrastructure and services is another possibility which should be discussed.
- e. The fifth chart presents the various possibilities for cost savings to the community by the planning team. For example the individual can choose to buy materials and build the house by himself. He can use hired labour or employ a contractor, also he can construct a room at a time or build the whole house at once. So the fifth chart illustrates the cost implications of these options and indicates the repayment requirements (2).

1 Ibid, p. 43.

2 Ibid, p. 45.

Phase 4: Willingness to Pay

The consultative approach suggested above is generally considered to be the single most important factor in ensuring not only the community's ability but also its willingness to pay for housing. It is not inability to pay which leads to defaults in payments but a number of other factors including (1):

- a. Lack of understanding of project content. The residents have to understand what is going to happen, the amount is expected to be paid and how it is to be paid.
- b. Unfulfilled expectations. The implementation team may, intentionally, in a desire to sell the project, or unintentionally, raise the expectation of residents as to the type of improvements they will be receiving. These expectations have to be defined after full discussion with the residents. The fact that residents had not agreed to a certain standard becomes another reason for not paying for the service.
- c. Delays in project execution on the part of the authority. It is important that not only what is to be done is fully understood by the community but also how it is to be executed, ' how long execution will take place and how infrastructure and services are to be maintained.
- d. Lack of maintenance. It is important to raise the subject of maintenance when discussing the servicing options available. Some options will undoubtedly require more maintenance than others. If this is discussed and agreements reached on who should take responsibility for them, future misunderstandings can be avoided.
- e. The attitude of payment in general appears to have a great influence on payments performance in housing project in particular.

1 Ibid, p. 22.

Phase 5: Organizing the Collection of Payments

Collection procedures of most local authorities are based on the collection of payments for individual connections of services. The sanction or penalty for non payment in the case of individual connections is theoretically simple: the service is cut off. In practice, the enforcement of this penalty depends to a large extent on the efficiency of the local authority. Many local authorities do not have the capability to collect existing payments.

The collection of schemes, particularly for presents other collection payments in low-income housing shared services in upgrading areas, problems which include (1):

- a. Definition of responsibility payment:** In situations in which the majority of residents are tenants, it is difficult to define who are the beneficiaries of the improved services and who is responsible for payment. There is no practical way for the authorities to collect payments from tenants, even if they are able and willing to pay, nor is it considered feasible to recover costs from the owners of the land and building who would use the charges as a justification for raising rents or for refusing permission to upgrade.
- b. Penalties for non-payment:** Identifying effective sanctions or penalties for non-payment of communal services is difficult and particularly so in upgrading areas. Evictions are not realistic, because houses are privately owned, and residents are aware that the authorities are unlikely to enforce eviction because such a move would only create new squatter areas.
- c. Inadequate administrative procedures:** Many local authorities are incapable of keeping on with existing payments, because of old-fashioned accounting methods and inadequate manpower resources. Add to these the numerous

1 Ibid, p. 27.

Small payments which have to be collected, as low-income housing areas are brought into the municipal financial structure. In some projects, the requirement for payments is not made clear at the outset. Families are simply never informed of where, when and how much they are expected to pay, and nothing happens if they fail to pay.

It is clear that conventional approaches to collection administration, which were designed to handle small numbers of high-income households, must be modified. The new approach to the collection of payments is the wide involvement of the community in the collection and enforcement of payments. The importance of stressing the cost-recovery of the project from the very first dialogue with the residents and throughout the duration of the project has already been emphasized. Similarly, penalties for non-payment are likely to be effective only if they are imposed with the agreement of the residents who must understand the need for both cost recovery and the enforcement of penalties against those who refuse to pay.

Other possible methods of involving the community include (1):

- a. The revolving fund:** The initial investment in services in an area could be treated as a revolving fund, so that repayments would be used for further development in the area. This should ensure that community pressure is put on non-payers who would be considered selfish individuals, not interested in contributing to the community's development.
- b. The community contract system:** In this approach, the community approaches the local authority with a proposal for the introduction of services for which it agreed to pay. Then a contract between the community and the local authority is signed to this effect, and the community

1 Ibid, p. 32.

Makes a down-payment to establish the principle of cost recovery before services are installed. In this way, the community becomes the paying client with contractual obligations and is responsible for the collection of payments from individual families. However, this system will work only if the local authority also meets its obligations under the contract.

c. Community-based organization as intermediaries:

Existing community organization or new ones formed for the purpose can be used as local agents for the collection of payments. Such organizations would be more directly in touch with residents than the local authority and, therefore, would be more able to put effective pressure on defaulters. Local credit unions or co-operative societies might also be used in this way.

SUMMARY

SUMMARY

Community participation in low-cost housing projects is considered one of the important and essential means for solving the housing problem at the present time. It was found from many experiences in housing low-income groups that informal houses built by the people themselves were better than those built by the formal organizations, even if they have good planning and better services. The people are acquainted with their actual needs and their abilities and resources, so they can define the spaces and design of their own houses. They can select the suitable location and build their own houses according to their physical and financial abilities, so the role of the planner and the architect in the planning and design of low-cost housing will be functionless, unless they involve the community in the housing process. The planner and the architect have to work in response to the community demands whether for the different groups or the individuals. The community involvement in the housing process should begin with planning and design, decision making, management, construction, and then maintenance.

Many developing countries realized the importance of involving low-income groups in their housing projects. They also realized the importance of community awareness, community training, and definition of relationship between the governmental organizations and the community, in order to organize their participation.

The thesis in its first chapter defines the meaning of community participation and its different ways and means, so that it would be possible to review both the international and the local experiences. In the second chapter of the thesis some of the international experiences were reviewed. According to the studies and references available, four distinguished examples were selected to be examined. These

Examples are: Lusaka Squatter Upgrading Project in Zambia, Building Together project in Bangkok, Community Building Project in South Korea, and the Freedom to Build Project in Philippines. Each example was analyzed separately for comparison according to the following items: Project description, Intermediate organization between the community and the government, community awareness, Community organization and its role in decision making, management, implementation, and maintenance of the housing projects. From the comparative analysis of the international experience it was possible to distinguish the positive and negative factors of each experience.

In view of the analysis of the international experience, it was possible to define the possibilities of community participation in low-cost housing projects in Egypt as indicated in Chapter III beginning with past experiences through history ending with present time experiences on both local and national levels. The study exposed factors affecting community participation in governmental projects in Egypt. It also exposed the role of community participation in the informal housing in both urban and rural areas, which were done through groups of people or by individuals. Furthermore, the study reviewed some examples of individual participation in improving or extending their houses by using home improvement loans or by modes of self-help.

It is obvious from the Egyptian experience in community participation in housing that low-income groups have the initiation and the ability to participate physically or financially because they possess the inherited values of cooperation and mutual help, but they just need to be more organized, and more conscious to know how to manage and implement their houses. This could be achieved through a national program for community participation in low-cost housing according to an intensive community training modules aiming to facilitate and increase community participation.

This has to be considered upon the actual needs of the community, their abilities to participate and according to the building materials and the appropriate building techniques available in different areas through appropriate planning and housing design.

The different ways to facilitate and to increase community participation in low-cost housing projects were indicated in Chapter IV of the thesis. It includes the cooperative societies for planning and implementation, or the appropriate housing design which meets the community needs and affordability. This could also be achieved through appropriate building materials and building technology suitable for community manpower resources and skills. To facilitate community participation there is also a great need for training modules, where the community can cooperate with the governmental organizations in implementing low-cost housing projects.

It is clear now that the role of the architect in housing low-income groups is subject to a number of social, economical, and managerial factors which define the different ways and modes of community and for the community. This is where the architectural work gains its genuine identity.

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BIBLIOGRAPHY

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ARABIC SUMMARY

"المشاركة الشعبية في اسكان ذوي الدخل المحدود"

ملخص الرسالة المقدمة لنيل درجة الماجستير في العمارة بقسم
التخطيط العمراني - كلية الهندسة - جامعة عين شمس
من المهندس / محمد عبد الباقي ابراهيم

تعتبر المساهمة الشعبية في مشروعات اسكان ذوي الدخل المحدود من الاتجاهات الهامة و المطلوبة في الوقت الراهن لحل أزمة الاسكان في مصر حيث ثبت من التجارب العديدة لاسكان ذوي الدخل المحدود أن السكان يبنون بأنفسهم مشروعاتهم الغير رسمية أفضل من المشروعات التي تبنيها الهيئات الرسمية، وحتى لو كانت سليمة التخطيط متوفرة المرافق ، فالانسان بطبيعته يعرف احتياجاته الحقيقية كما يعرف امكانياته و قدراته و من خلال هذه المعرفة يستطيع أن يحدد حجم و شكل المسكن الذي يريده و في المكان الذي يناسبه و بالوسائل الانشائية التي تتناسب مع امكانياته المادية و كما تتناسب مع امكانياته البشرية أيضا. و من هنا أصبح دور المخطط و المعماري في توفير الاسكان لذوي الدخل المحدود غير ذي فاعلية ما لم يستغل المشاركة الشعبية في هذه المشروعات و بذلك يصبح دور المخطط و المعماري هو دور المترجم لرغبات المجتمع بمجموعاته المختلفة و أفراده المختلفين و ذلك في المراحل المختلفة لاعداد المشروعات و التي تبدأ بمرحلة اتخاذ القرارات التخطيطية و التصميمية ثم مرحلة التنفيذ و الادارة ثم مرحلة التشغيل و الصيانة.

من هذا المنطلق تنبّهت العديد من دول العالم الثالث الي ضرورة اشتراك أفراد مجتمعاتها من ذوي الدخل المحدود في مشروعات الاسكان التي تناسبهم. كما تنبّهت هذه الدول أيضا الي ضرورة توعية هذه المجتمعات و تدريبها علي اسس و أساليب المشاركة في مشروعات الاسكان و تحديد العلاقة بين المؤسسات الحكومية و بين المجتمع بمنظّماته الشعبية أو بأفراده و ذلك حتي يمكن تنظيم هذه المشاركة.

و الرسالة في بابها الأول تبدأ بتعريف المشاركة الشعبية و تحديد المفاهيم التي ارتبطت بها و أشكالها المختلفة و ذلك حتي يستطيع الباحث أن يتعامل مع التجارب الدولية و المحلية في اطار مفاهيم محددة علي مدي المراحل المختلفة للبحث. و من هذا المنطلق عرض البحث في بابه الثاني بعض التجارب الدولية من خلال الدراسات و المراجع المتوفرة عنها و أمكن في هذا البحث التطرق لأربع تجارب متميزة في هذا المجال: الأول مشروع الارتقاء بالبيئة العمرانية في لوسكا عاصمة زامبيا ، و الثاني مشروع البناء التعاوني في بانكوك عاصمة تايلاند

، أما المشروع الثالث فهو البناء بواسطة المجتمع في كوريا الجنوبية ، و المشروع الرابع فهو الحرية في البناء في الفلبين. وقد تم تحليل كل تجربة علي حدة بأسلوب المقارنة سواء بالنسبة لوصف المشروع و موقعه أو شكل التنظيمات الوسيطة بين المجتمع و الدولة أو بالنسبة لتوعية المجتمع بالمشروع و أهدافه و تنظيمه أو بالنسبة لدورهم في المشاركة في اتخاذ القرارات التخطيطية و التصميمية و في تنفيذ و ادارة و صيانة كل مشروع علي حدة. ويظهر من التحليل المقارن للتجارب العالمية مواضع سلبية و ايجابيات كل مشروع.

وفي ضوء دراسة التجارب الدولية أمكن دراسة امكانيات المشاركة الشعبية في مشروعات الاسكان لذوي الدخل المحدود بجمهورية مصر العربية وذلك في الباب الثالث من الرسالة بداية من التجارب الماضية علي مر العصور الي التعرف علي مجالات المشاركة الشعبية في مشروعات الاسكان علي المستويين القومي و المحلي. وقد تعرض البحث في هذا المجال الي العوامل المؤثرة علي المساهمة الشعبية في المشروعات الحكومية. و من ناحية اخري تعرضت الدراسة الي دور المشاركة الشعبية في الاسكان الغير رسمي في المناطق الحضرية و المناطق الريفية أيضا سواء كان ذلك من خلال المجموعات أو الافراد. كما تطرق البحث أيضا الي ظاهرة التعديلات و الامتدادات التي يقوم بها أفراد المجتمع و ذلك بهدف تحسين أو توسيع مسكنهم و يكون ذلك اما بواسطة الاستفادة من بعض القروض الخارجية أو بالاعتماد علي النفس. وقد لوحظ من خلال دراسة التجارب المصرية في مجال المساهمة الشعبية أن مجتمعات ذوي الدخل المحدود لديهم الرغبة و القدرة علي المساهمة ماديا و جسمانيا و يساندهم في ذلك ما توارثوه من قيم في التكافل الاجتماعي و التعاون و لا ينقصهم سوي التوعية و التنظيم و اسلوب الادارة و التنفيذ و يكون ذلك من خلال برامج قومية للمشاركة الشعبية في اسكان ذوي الدخل المحدود و في ضوء برامج مكثفة للتدريب بهدف دفع المجتمع الي المشاركة الأكثر ايجابية في مشروعات الاسكان لذوي الدخل المحدود مع الاخذ في الاعتبار احتياجاتهم المعيشية و امكانياتهم البيئية و المادية المتاحة في المناطق المختلفة ، يساندهم في ذلك الفكر التخطيطي و التصميم المناسب لهذا الاتجاه .

و لتسهيل و دفع المجتمع الي المشاركة في مشروعات اسكان ذوي الدخل المحدود ترض الباب الرابع في البحث الي الوسائل المختلفة التي تساعد علي ذلك من خلال التنظيمات التعاونية في التخطيط و التنفيذ أو من خلال اسلوب التصميم المعماري المتوافق لمشروعات اسكان ذوي الدخل المحدود و التي تتناسب مع رغبات الافراد و الجماعات و تتمشي مع احتياجاتهم المعيشية

و امكانياتهم المالية في ضوء المحددات البيئية . وهنا تظهر الحاجة الي منهج خاص بتكنولوجيا البناء المتوافقة و التي تعتمد علي الامكانيات البشرية و تتناسب مع مواد البناء المحلية . و لتحقيق هذه الاهداف تظهر الحاجة الي وضع برامج تدريبية مكثفة يتعاون فيها المجتمع مع أجهزة الدولة بخبراتها التخطيطية و المعمارية و التنظيمية و الاجتماعية و الاقتصادية ، بعد تهيئتها لهذا العمل ، و هذا ما عرض له البحث باسهاب.

و كهذا يتضح ان دور المعماري في مشروعات اسكان ذوي الدخل المحدود يخضع الي العديد من العوامل الاجتماعية و الاقتصادية و التنظيمية و الادارية و التي تحدها الاشكال المختلفة للمشاركة الشعبية و بذلك يرتبط المعماري ارتباطا عضويا بالمجتمع الأمر الذي ينعكس علي ذاتية العمل المعماري و خاصيته .