PHILOSOPHY AND EXPERIENCES
OF SUPPORTIVE INTERVENTION
IN THE SELF HELP HOUSING PROCESS

by
Sheldon Mark Klapper
B.A. Marlboro College
1969

Submitted in Partial Fulfillment
of the Requirements for the
Degree of
Master of Architecture
at the
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
January 1978

Signature of the Author

Department of Architecture
January 1978

Certified by
Sean Wellesley-Miller, Assistant Professor of Architecture
Thesis Supervisor

Accepted by
Associate Professor Chester Sprague, Chairman
Departmental Committee for Graduate Students

Copyright © Sheldon Klapper 1978
PHILOSOPHIES AND EXPERIENCES
OF SUPPORTIVE INTERVENTION
IN THE SELF HELP HOUSING PROCESS

Sheldon Klapper

Submitted to the Department of Architecture
on January 27, 1978 in partial fulfillment
of the requirements for the degree of
Master of Architecture

ABSTRACT:

This paper argues for the present and potential value of self help housing to both dwellers and government. It identifies and analyses the two generic methods of self help housing in the United States at this time: 1) Direct government intervention, here exemplified by the Farmers Home Administration's Self Help Housing Program; and 2) Independent self help housing, here exemplified by rural owner initiated housing.

The systems studied are both essentially rural but when compared with the findings of HUD funded analysis of the NYC Homesteading program, the governing principles are found to be appropriate to the urban context also.

The research indicates that the value of self help housing to the individual includes not only financial benefits, but real and important human and social benefits as well. It shows that for the independent self helper the greatest needs are for a stable and accurate source of information on all aspects of housing production, and a greater variety of credit mechanisms.

The research further shows that the FmHA Self Help Housing Program, regardless of its claims, is basically a credit program. Though worthwhile and much needed, it severely limits dweller options in the housing process.

After analyzing the values and deficiencies of the two methods in theory and in practice, a synthesis articulates, in detail, an adjusted role for the government of the people in aiding and influencing the self help housing process.

Thesis Supervisor
Sean Wellesley-Miller, Assistant Professor of Architecture
Acknowledgements

To

All the fine people who put up with my exceedingly long interviews, particularly Chris.

Don Terner, for three years of "supportive intervention".

Leah, Rosemary and Michael (my once, present and future friends), and to M. Florian and Marko, Kat, Leon and Zina (the West Coast ringer).

The Laboratory of Architecture and Planning for supporting two of my self help housing research projects, and especially to David Judelson.

The Graham Foundation for their Travelling Fellowship thesis research support.
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>4</td>
</tr>
<tr>
<td>CHAPTER 1</td>
<td>12</td>
</tr>
<tr>
<td>An analysis of the Farmers Home Administration's Self Help Housing Program</td>
<td></td>
</tr>
<tr>
<td>CHAPTER 2</td>
<td>30</td>
</tr>
<tr>
<td>An analysis of the independent owner initiated self help housing process</td>
<td></td>
</tr>
<tr>
<td>CHAPTER 3</td>
<td>53</td>
</tr>
<tr>
<td>An assessment of both systems in relation to the potential values of the self help process</td>
<td></td>
</tr>
<tr>
<td>CHAPTER 4</td>
<td>77</td>
</tr>
<tr>
<td>Proposals for a revised framework of supportive intervention in the self help housing process</td>
<td></td>
</tr>
<tr>
<td>APPENDIX</td>
<td>94</td>
</tr>
<tr>
<td>Bibliography</td>
<td></td>
</tr>
<tr>
<td>APPENDIX 1</td>
<td>95</td>
</tr>
<tr>
<td>Chronological narrative of one family's independent self help experiences</td>
<td></td>
</tr>
<tr>
<td>APPENDIX 2</td>
<td>106</td>
</tr>
<tr>
<td>Chronological narrative of one family's FmHA mutual help group experiences</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION
THE THESIS

This paper argues for the present and potential value of self help housing to both dwellers and government.

METHOD OF THESIS SUPPORT

It identifies and analyzes the two generic methods of self help housing in the Unites States at this time: 1) direct government intervention; and 2) independent owner initiated self help housing. The analysis supports the notion of a provable present value of self help housing.

Further, the paper articulates, in detail, a synthesis of the above methods to offer an adjusted role of supportive intervention in the self help housing process. This supports the notion of a potential value.

DEFINITION OF TERMS

The term "self help" is used in housing to describe a process where personal control, self determination or responsibility - autonomy - is the essential factor.

Dweller control can be achieved through a variety of methods. These range from an enlightened architect-client collaboration, where the client has the traditional power to demand and reject, to dweller responsibility for self management or operation of the dwelling. This latter situation occurs traditionally in single family housing and in cooperative housing schemes. It has been achieved more recently in rental situations such as in the dweller managed projects of the St. Louis Housing Authority near Pruitt-Igoe.

Within that wide range are two particular situations that are commonly, but mistakenly, considered synonymous with the term self help. One is
"self built housing", where the family constructs the dwelling totally or partially by themselves or in collaboration with a crew. The other is "self management" of construction, where the family makes the major decisions about the make-up of the dwelling by acting as the general contractor, but doesn't physically labor on the structure. This means that "self built" housing does not encompass the full potential of "self help" housing.

Each one of these phases - design, management, construction, operation - can offer opportunities for self help, depending entirely on how much decision making responsibility the dweller actually has. Each phase offers values that are distinct from the self help generated values of the next phase. In this paper, the two self help processes studied offer different degrees of dweller control within each phase.

VALUE OF DISCUSSION

Self help housing is valuable to study because there is obviously a failure of low and moderate income housing delivery systems in both the public and private sectors. This is acknowledged by both the dwellers, who constantly trash public housing projects, and the professionals, who constantly write about the problems in their journals, while printing numerous pictures of Pruitt-Igoe being blown up.

Self help is considered an alternative today, but has been as socially evolved housing, the primary housing production process up until the latter part of the industrial revolution and its concurrent growth of centrally planned housing systems. According to the 1970 housing census, 20% of all single family homes in the United States used dweller self help to a major extent in the actual building, or in the construction management phases. This amounts to a full 10% of all housing starts. Considerably
more were surely involved in the design or operation phases.

This indicates that the self help housing process is already in use, with greater strength and vitality than many professionals apparently realize. It has a strong historical and cultural background.

Financial Benefits

Furthermore, self help housing is valuable to study because data has consistently shown that the process offers real financial savings over standard purchase methods. This study supports previous data that the process generates great wealth in relation to income of the self help families.

Skill Benefits

The self help housing process can develop important, transferable skills in two major areas. The first area obviously is the construction trade skills. An owner-builder can use these skills to reap financial benefits by getting a job in the established construction industry, or working on the "fringes" of the industry, i.e. moonlighting.

The second group of skills gained are in the field of management - specifically construction management, but even more than that. It is a great skill to be able to control a very complex process to fruition - a skill that is transferable to a wide variety of occupations and situations. What can be developed is the ability to make decisions quickly and correctly.

When, as it is for some people, self help housing is the first real chance to take responsibility for decisions of this magnitude, growth can occur, value can accrue.

Social Benefits

Finally, studies have shown that the self help housing process stimu-
lates benefits for the individual and the society. Such qualities as self confidence and self respect can be developed from the pride of achievement that occurs when a family successfully undertakes the complex job of controlling the production of their dwelling. The case studies for this research strongly support such findings.

It is these "social" or "human" benefits, perhaps the most important of all, that are regrettably the most difficult to analytically or statistically "prove". This research adds to the growing body of case studies which indicate that through the dwellers own self appraisal and through outside observations the process of self help housing is valuable to the participant in ways other than financial, development of building skills, or even specifically development of construction management skills.

Self help housing allows an opportunity for dweller control over the type, size, quality and timing of construction and financing. It provides opportunities for increased individual creative and personal fulfillment and provides opportunities to use one's own resources as one sees fit. That is to say, there are a variety of entrances to the process. The dwellers decide whether they want to enter as general contractor, as a supervisor or co-worker on the crew, as a superintendent, etc. Furthermore, it provides - in most cases in this study - improved living conditions, security of tenure and homeownership equity.

RESEARCH METHOD

The research method used to support the notion of the present value of self help housing process was basically the development of case studies of families involved in one or the other generic methods of self help housing.

For the direct government intervention method, the Farmers Home
Administration's "Self Help Housing" program was studied. The FmHA is responsible for substantially more assisted housing in non-metro areas than is the Federal Housing Administration. Eligible for the programs (self help is one of a variety of housing programs the agency operates) are families of low and modest income who cannot afford conventional financing and who live in rural areas or towns of less than 20,000 population, not closely associated with large metropolitan areas.

Self Help Housing is a program in which houses are collectively built, under supervision, by a group of six to ten families who eventually move in. Mortgages are provided directly by the agency, some with interest subsidy. Twenty families participating in the program, in groups supervised by two different non-profit technical assistance organizations, were interviewed.

For the independent owner-initiated self help housing process, twenty interviews were conducted with families from throughout rural and small town New England. Some of these families held full time jobs and obtained conventional mortgages. Others either couldn't get or didn't want mortgages and were able to build incrementally, financing out of income and small savings for periods lasting as long as six years or more in some cases.

Case studies were supported by interviews with spokespersons for local, regional, and national FmHA and local technical assistance groups. A literature search of FmHA published documents and related articles on both the FmHA and self help housing in general was conducted. Photographs were taken of each house.

Research Direction

The goals of each method of self help housing, as delineated by the
decision makers, are identified. There is discussion of how and if the goals changed, were the goals achieved, and if not, why?

Data clearly supports the notions of financial and social benefits of self help housing as it is presently operated - though to greatly varying degrees in each method. The goals are then compared to the potential value of self help housing as expressed in this introduction and analyzes each method's failures and successes. The assessment clearly indicates that there are areas for major growth in the potential audience for self help housing, as well as growth to increase and expand the benefits themselves.

A section of the paper addresses this potential by developing a philosophical as well as bureaucratic framework for supportive intervention in the self help housing process that is based on this analysis.

RURAL/URBAN

Interviews were conducted in rural and small town settings for two reasons. First of all, according to the 1970 census of housing, non-metro areas contained almost 1 1/2 times as many families living in substandard housing as the metro areas did. Recent statistics show that almost 85% of all U.S. families are unable to afford to purchase the average priced new home today. At the same time, non-metro income is 3/4 that of urban income. The Kaiser commission found that "the minimal annual income required to assure standard housing" was higher, in fact, in non-metro areas than in metropolitan areas. Furthermore, there is a recognized rural credit gap that the federal government attempted to deal with, for example, by loaning mortgage money directly through the FmHA instead of trying to guarantee private market mortgages as it does through the FHA and the VA. (A guarantee program was started just this year, but there
are only 60 applications nationwide thus far.)

Secondly, it turns out that by looking at rural situations, the purest cases of self help housing process are discovered. There is a strong tradition and there aren't as many distractions, such as the high urban area building inspector profile or complex, strictly enforced zoning codes, to obscure an understanding of the basic principles of the process. However, the major principles discovered in this research are basically applicable to the urban context.

This thesis of similar rural/urban principles was tested against the findings of the Urban Homesteading Assistance Board of New York City, the pioneer urban self help housing technical assistance group. U-HAB, a non-profit group, also acts as a broker between organized groups of potential self helpers and funding sources, including government and private mortgage sources.

The author was a member of a team that produced an evaluation of the work of U-HAB for HUD in 1976.

**APPROPRIATENESS**

Self help housing is not an appropriate method for every family, but it is possible for many more families to get value from it as a process than presently do.

It is particularly valuable for those who have time that is not monetarily very rewarding (i.e. low income, unemployed). It is valuable for those who have no choice in housing, i.e. they can't live how they are presently living any longer and there is no place better to go to. It is obviously valuable for those who are motivated to a better life.

It is valuable for a whole cross section of the population who are not living in the quality of built environment they themselves are capable
of affecting.

The principles apply in all climates and in all built contexts.
CHAPTER 1

An analysis of the
Farmers Home Administration's
Self Help Housing Program
The Farmers Home Administration was formed just after the Second World War as an agency of the U.S. Department of Agriculture. It was charged with dealing with the credit needs of small farmers. Little by little its authority has been expanded to provide many kinds of services to all people living in rural areas and towns of less than 20,000 population not closely associated with a large urban center. The agency now provides loans and grants for, among other things, housing, recreation area development, community water and sewage systems, business and industrial development, and planning grants.

The Housing program was started in 1949, and for the last decade or so has been by far the largest program in the agency. Last year it loaned, directly from its own funds, over three billion dollars. Just this past year the agency started a mortgage guarantee program for housing similar to the Federal Housing Administration's. The agency has spent almost thirty years without it on the premise that there was not enough private mortgage investment money in rural areas to warrant it. The recent growth of large bank holding companies has caused them to alter their position. Though far too early to judge accurately, the guarantee program has had very little impact.

The federal agency states its reason for developing a rural housing loan program as follows:

"Home ownership loans are made through the Farmers Home Administration in keeping with the government's goal to provide decent homes in suitable environments for American families. Rural housing loans help create the kind of communities that encourage people to live in rural areas. They help check the flow of rural people to urban areas and encourage urban families to live in the countryside. The program raises living standards, creates a healthy environment for family life, and makes rural
communities attractive locations for the development and expansion of industries."

The Self Help Housing program is one section within the home ownership program. This chapter concerns itself exclusively with that section.

**CHRONOLOGICAL DESCRIPTION**

It might be easiest to explain the FmHA bureaucracy by moving through it the way a typical family interested in self help housing would.

First, the family is interviewed by the county supervisor, who discusses all the credit programs available and determines probably eligibility for the Self Help Housing program based on the income and expenses of the family.

The supervisor directs the family to the technical assistance group in the area responsible for construction supervision of the mutual self help projects. Sometimes initial contact is made by the TA organization. The TA organization assigns the family to a mutual help group which then goes through a series of introductory and instructional meetings. Somewhere along the line, the actual application for a mortgage is approved by the FmHA. The timing of this act varies according to the work load of the area office. The family, as part of a mutual help group, is then given a site (most often chosen and purchased by the TA organization well in advance of group formation). They are also given a construction schedule and usually a choice of three designs. They then build the house according to the plans, working mutually with five to nine other families on each house, with a construction supervisor provided by the TA organization. The family then pays the loan out in up to 33 years.

**Section 502 Program Details**

Material for this section was taken exclusively from documents printed
by the Farmers Home Administration. Some of these documents were for the use of participants, some for use by technical assistance group supervisors, and some for use by the county supervisors.

The loans for home ownership program is known as section 502. They are offered to qualified families who wish to purchase or independently self build their home (theoretically) to any degree in a mutual help program. This study deals with the mutual help program. Applicants must be creditworthy, must possess the financial ability and experience to meet loan obligations, and yet just be unable to obtain a home with conventional financing.

In 1970 the Rural Housing Alliance, a non-profit group, wrote:

"The 502 self help housing program remains one of the most effective tools that low income people have available to them in attaining home ownership. The reduction of the cost of housing through the investment of sweat equity has generally resulted in genuine low cost, but high quality, housing."

The agency itself writes:

"Under the self (mutual) help housing system, the families provide most of the labor required in building their homes and thus sharply reduce costs." (emphasis added)

The group consists of six to ten families who work under the guidance of a construction supervisor who is hired by a non-profit sponsoring technical assistance group. The houses are inspected by the FmHA inspector along with the local building inspectors.

SITING

The house sites don't have to be adjacent, but they have to be close enough to enable the families to easily get from one house to another during construction. The county officer determines this accessibility. Some groups have clusters built on small lots and keep the remaining land in communal trust. The program states:
"Houses will be located on desirable sites with an assured supply of drinking water and suitable arrangements for sewage disposal. In subdivisions, the houses will be sited in an attractive manner to avoid straight line monotony and to accent and preserve the natural advantages of topography, trees and shrubbery. Funds may be included in the loan to finance lawn seeding, shrubbery and other landscaping measures that beautify the home and make it an attractive addition to the community."

DESIGN AND CONSTRUCTION

Houses must be "modest" in size and cost but adequate to meet family needs immediately. New homes average around 1100 square feet of living area. The definition of modest varies from state to state; the New England regional director has interpreted this to mean, among other things, that there cannot be fireplaces or two car garages. Recently he allowed a chimney to be built for use of a wood stove.

The FmHA asks that construction "involve as much on-site work as practical", that "basic plans and construction methods be standardized as much as possible", and that "construction of the houses will be done in stages. Each stage of construction will be finished, if practical, on all houses before starting the next stage." Theoretically, the labor equity eliminates the need for a down payment. Participants in the mutual help projects sign a promissory note as evidence of a desire to participate in the program and to furnish the required labor to complete the house. Mutual agreements are signed by all the participants. In New England members of most mutual help groups are required to work 25 hours per week on the houses. In the group method, if one family falls behind in the amount of hours they are contributing, work on their house stops until they catch up. Families can receive credit for hours worked by friends and relatives according to criteria set by the technical assistance organizations. Title to the houses and permission to move in are not turned
over to the families until all the homes are complete. Participants must also agree to "carry out all responsibilities of home ownership after housing is completed."

FINANCING

Loans are made for the value of the site, the house and the improvements. The maximum repayment period is 33 years. The participants must be "....without decent, safe and sanitary housing and be unable to obtain a loan from private lenders on terms and conditions that they can reasonably be expected to meet."

One of the principles behind the mutual help program is that the family's labor on the house take the place of the conventional down payment. By using this procedure, the FmHA attempts to be the creditor of last resort. If a family can afford a down payment they will not be eligible for this program.

With the family, the county agent determines a housing budget range within the family's total income. The budget is arrived at by determining an adjusted income (a simple formula with standard deductions for children, taxes, etc.) and considering present debts, past credit ratings and other variables.

A loan is then offered at the agency standard interest rate of 8%. If these mortgage repayments added to the expected operating costs overhead exceeds the previously determined housing budget, the "interest credit clause" is introduced. Interest credit can drop the mortgage rate all the way down to 1% in an attempt to lower total shelter carrying charges. The need for interest credit is reviewed every two years.
Cost Savings

The average cash outlay for houses in New England is presently around $26,000.

The TA organization, acting essentially as the general contractor, attempts to keep costs down by bulk ordering of materials and by taking low bids on the subcontracting of all the houses as a group to tradesmen. Houses are separately invoiced. Individual family cost saving efforts in these two areas are not allowed.

TECHNICAL ASSISTANCE ORGANIZATIONS

"The basic objective of the technical assistance program is to provide qualified organizations with the financial assistance necessary to pay part or all of the cost of developing, administering or coordinating effective programs of technical and supervisory assistance which will aid low income families in carrying out mutual self help housing efforts in rural areas."

Conditions

Agreements with a technical assistance organization can only be approved if a) a long term need for self help housing in the area clearly exists, and b) if evidence is available that the organization has, or can hire, qualified personnel to carry out the responsibilities of the agreement. Concerning ability specifically, the agency states:

"The organization must have the legal, financial and actual capacity and resources to provide the construction supervision under the direction of the FmHA county officer. Furthermore, funds for this project must be available from no other source."

The agreements are quite detailed and prescriptive.

Purposes

Funds received by the technical assistance organizations may be used only for the following purposes: hiring personnel as outlined in
the agreement; payment of necessary and reasonable office expenses including office rental and office supplies; payment of necessary administrative costs such as taxes, insurance, travel and training; purchase of power tools to be made available to participating families; and "payment of any fee for training or for technical and consultant services not readily available without cost to the participating families."

Specifically, the funds may not be used for: hiring personnel to perform any of the construction work for participating families; buying real estate or building materials or other property of any kind for participating families; or paying any debts which should be the responsibility of the participating families. The agreement covers a period not to exceed two years. A work schedule for a specific number of houses is agreed upon.

The TA group is responsible for finding families who will participate in the program, educating them through a series of meetings, finding suitable sites, providing construction management and construction site supervision. The FmHA specifically states that "there shall be a series of meetings held prior to construction (with mutual help group members)."

Suggested topics for such meetings are:

1. site planning and building codes, including factors in selecting house sites
2. home planning, kitchen layout, economical construction, traffic patterns
3. plans and specifications: individual help in making decisions about plans and specifications
4. cost of materials: purchasing committee reports on the recommendations for awarding contracts and suppliers
5. taxes: local tax assessor discusses appraising and gives rough estimates.
6. insurance: local insurance agent to speak on options, supervisor speaks on FmHA requirements
7. mortgage requirements: local attorney talks of legal aspects
8. money management: the necessity of keeping records and following a budget
9. maintenance costs: plus discussion of the importance of maintenance to a home, i.e. improving appearance maintains value,
saves money in the long run
10. labor sharing arrangement: group reaches decisions as to how labor sharing will be arranged on a fair basis, record keeping, etc.
11. use of tools: demonstration and training on safe and proper use
12. construction and work procedures: labor sharing, work teams, order of development, function of committees, time reporting for work completed and future hours available
13. ground breaking plans and party for loan closing

The previous sections of this chapter have outlined the goals of the FmHA and the Self Help Housing program details. This section looks at how well their institutional framework is geared to their goals.

STAFFING

Changes in policy direction and scope have not resulted in consistent agency wide changes in the management of the bureaucracy.

Over the past decade the housing program gained monetary ascendency within the agency, as its responsibility grew from rural areas and towns of 5,500 population and less to towns of 10,000 in 1972, and then in 1975 to towns of 20,000 or less, not closely associated with a large urban center. Consequently the ratio of farmers to rural non-farmers changed drastically. In conjunction with these changes, the agency has failed to redistribute staff to match potential clientel. Historically, the agency put its greatest number of staff in the states where there were the greatest number of farmers. When their extended authority changed the make up of the group to which they were responsible, the staff was not geographically shifted.

A good example of this failure to redistribute staff can be shown by comparing the figures for loan/staff ratio between the states of North Carolina and Massachusetts. In Massachusetts there are now approximately 320,000 occupied units in the agency's service area. In North Carolina there are about three times that amount. But since there were more
farmers in North Carolina than in Massachusetts, North Carolina maintained
155 loan officers while Massachusetts has only 8. Not surprisingly, with
about 20 times the staff of Massachusetts, North Carolina handled about
twenty times the amount of loans. If the staffs were distributed properly,
they would have handled in the range of only 3 times the amount of Massa-
chusetts, with a certain leeway for different base housing conditions.

Quality of Staff

Throughout this study, staff members of the FmHA who deal with the
potential mutual help group participants have shown themselves to be
extremely competent and dedicated. They have been knowledgeable of the
rules, and of the realities where they are different. They have been
both efficient and compassionate. This opinion was expressed universally
by participant families, TA organization spokespersons and this participant
observer.

Bureaucratic Delays

The Rural Housing Alliance, with detailed knowledge of conditions
in FmHA mutual help projects across the country, writes:

"Generally, the total program takes 12 to 16 months--6-8 months
in pre-construction (choosing house plans, selecting building
sites, completing the required FmRA paperwork and awaiting
loan approval), and 6-10 months in construction." 2

The long pre-construction waiting period can take the edge off the
readiness to work. One participant expressed a feeling common among
families interviewed: "There's an enormous amount of delays, a lot of
delays until you get rolling. There's even delays after that." One
mutual help group of nine families studied had 7 months "of meetings"
before construction could begin upon receipt of the FmHA loan money.
During that time there were 45 different families that were in the group
at one time or another. The long wait just dropped most of them out.

The major FmHA county office in Massachusetts takes up to six weeks to send an informal letter of potential eligibility. The application is then normally approved within the next four months. The mutual help program applications move the fastest of all section 502 loans. For the other programs in New England, it now takes more than six months just to get the preliminary appointment to begin an investigation of potential eligibility. The reason for this is that contracts are awarded by the FmHA to technical assistance groups in the area specifying, as usual, that a certain number of hours had to be completed within the contract time. For this reason, in order to avoid the Catch 22 of the TA group being unable to complete its contract with the FmHA because the agency can't loan money fast enough to the participant families, mutual help loans associated with the TA group nearing the end of its contract get top priority at the county office.

The long pre-construction period is a two edged sword to some, however. Some find its value in that the only families that do remain are those that truly must have their own home and have proven their ability to overcome adversity.

Another problem with this long start-up period is that even very carefully worked out budgets developed 6 to 8 months prior to construction can turn out to be quite worthless in single family house construction, due to rapid changes in the very unstable building materials market.

MANAGEMENT COMPLEXITY

A mutual help group causes more programming and administrative difficulties for a county supervisor than, for example, a loan to a family of similar income given for direct purchase. Therefore due to its staffing
shortage and its poor distribution of staff, the institutional framework is not geared to the goal of involving all people who might be eligible in the program. The FmHA generally does not try to interest families in the mutual help program. As one official said: "This is a program of last resort; for them and for us." This attitude is prevalent everywhere, from the Washington headquarters down to the county offices. Washington staff members have stated in interviews for this study that the program is "not top priority". Another official called the program "still experimental". It is in its eleventh year of operation.

[Similarly, lack of staff time keeps the FmHA from encouraging families to independently build with a 502 loan. This approach, if the participant was using the agency as his sole resource, would take even more time for the county agent than a mutual help loan, and would leave him with the responsibilities that for the mutual help groups are normally handled by the TA organization -- the organization that is paid funds above and beyond the county supervisor's budget for just that reason. There are no procedures for dealing with this problem. In county offices, the comments on the individual self help approach ranged from: "Well, we sure won't talk somebody into doing it" to "We have had to temporarily discontinue that option due to lack of staff".]

In early 1973, Department of Agriculture Bulletin #4361 stated that their Extension Service and their FmHA had reached a "memorandum of understanding" on the extension service providing assistance on construction and maintenance of housing. This study has not turned up a single FmHA staff member who has heard anything about implementation of the memorandum.
Cohesiveness

There are both advantages and disadvantages to insistence on the method of mutual help as opposed to self help.

Families are chosen to participate in the mutual help program on the basis of only three criteria: 1) expressed interest; 2) proper income range; and 3) creditworthiness. As one construction supervisor put it: "The process of collecting a group doesn't speak to attitude and motivation." Occasionally, some members of a group know each other because they live in the same area, or even because they heard about the program and applied together. Generally, however, this is not the case.

Neither the absence of prior contact between group members nor the lack of attitude selection criteria necessarily interfere with agency goals, but the framework allows for the frequent occurrence of situations like the following, as described by a participant:

"I don't know if they even liked each other from the start. We started work one morning and he was waiting for the other guy just to say one word out of the way so he could just grab his hammer and go home. And that's exactly what he did. And things like that happened....In getting a group together you've got to try and find out if you've got some people there who have something in common. And no negative waves toward each other, cause that's really rough."

Lack of cooperation has been exhibited in a number of other ways. For example, a participant won't show up at a scheduled time when many hands are needed for a certain job, or when certain decisions have to be made.

Productivity of Supervisor

Sometimes there are clashes between members of the group and the construction supervisor (who the group didn't have a hand in hiring). One
participant described an incident:

"We had one woman who used to bring her baby there with a playpen and a lawn chair and she used to sit and knit and watch us guys work and every once in a while she'd jump out of the chair and blah blah blah, chew us guys out. I'm not kidding! Our supervisor quit one day. He came to the site and she got there and started to chew him out and he just got back in the car and said "Build your own goddamn house". It's aggravating. They drive the poor man nuts...."

In some groups the wives do as much work as the husbands and in some groups they don't work at all. The reasons for this are hidden somewhere in the group dynamic. No pattern has emerged in this study.

The job of the construction supervisor is somewhat difficult. He works weekends and holidays and nights, the only times that the participants have free to work on the house.

In addition to the ever present possibility of personality clashes, his ambiguous status in the group as supervisor and employee can create problems. One participant stated, and a former construction supervisor strongly agreed:

"There is too much responsibility for the supervisor. He doesn't get enough backup from the office. He has to teach us and supervise us and supervise the subcontractors. The super has to go around and find out where everybody's talents lay and if he's got a bad group, he's got problems. I mean, he has no power, except as to how much we believe we couldn't do the house without him. He can't fire us. And he didn't even loan us the money, so he can't take it back, can he? The job is really impossible to do and they don't even pay as much as a good carpenter can get out in the field."

Construction Productivity and Cost Saving

Certain families have more friends and relatives helping out than others. Sometimes this has caused resentment. Some people feel their construction skills are worth more to the group than those of other members. A relative who works one time only on the project, though gaining credit for the family on the tally sheet, can be practically useless if he/she
doesn't know the systems, etc. Often the problem is merely one of under-utilization. The families are unable to take the time to prepare a series of jobs requiring little supervision for unskilled friends visiting one time only.

**Group Size Effect on Productivity**

"The best thing to do is to put a limit on how many guys could show up at one time to work on a house. Otherwise you get in each other's way."

"In a group, everyone has their own shortcomings. Some people are real sloppy workers and don't care. I think that more than four or five guys working at the same time was a real hassle."

A full three-quarters of the FmHA families interviewed felt that the construction process could have been handled more efficiently had they been responsible for three homes in a group rather than nine or ten. In describing the mutual help construction process, one participant said:

"The first place that you do is rough. Because they're hollering and throwing measurements at you. My supervisor, to learn from him, you more or less had to hang on to his shirt tail. While he was doing, he was explaining. But the next place you do goes together real fast. And by the time you get to the last house, everything's going together and everybody knows what to do and there's a little job harmony. But by that time, the fifth house or so really, you're a little tired and, more important, everybody's got a little grievance with one another. Fighting and stuff like that. There's no harmony anymore. We should only be doing three houses at a time with a group."

**Technical Assistance Costs**

Technical assistance costs have been averaging around $3200 per house in New England, although "initially the costs may be higher because of the problems the new applicants may have to encounter during the early stages of the operation". The average house is mortgaged for $26,000, for an average cash outlay of around $29,000. Equivalent houses could be pur-
chased in the $32,500-$33,000. Therefore the program is saving cash outlay for the participants and for the government. If a TA group can take over just the general contractor's responsibilities (which they do) for less than a standard general contractor's overhead/profit, then the program of Technical Assistance is economically viable.

Design

In the New England region, the great majority of the mutual help houses are sponsored by a small handful of TA groups. Each sponsor uses only two or three different designs and very little substitution is allowed. Hence, all decisions can be easily made at the regional level as to what meets the agency's declared goal of a "modest" dwelling.

Allowing the dwellers only a very limited choice of designs eases the administrative burdens for the FmHA. For example, by looking at only a handful of designs the regional director in New England was able to decide that no family could build a fireplace or a two car garage because the house would no longer be modest. That is the rule. There are no exceptions. If there were an unlimited variety of designs available to the participant families, that decision might have to be made over and over again for each different design.

So there are few alternative designs, to a great extent because of the shortage of staff available to deal with the attendant decisions that would be called for within this institutional framework. There is a built-in incentive for the FmHA and the sponsoring TA organizations to continue to use previously approved house plans: development, review and approval of new plans would obviously be time consuming for both of them. Participant families had a variety of opinions on the design issue:

"(Technical assistance organization) was good. They have done
this house before. They knew exactly down to the nail what material it would take to build the house and they got the best deals."

"The houses are basically pretty nice houses. Six in a row would look kind of ticky tacky but if put together right you won't have many problems. They'll stand."

On the other hand:

"If they would have just given me someone who could have helped me with the design it would have been a different house. They just gave me this design. And now that I'm here I would have changed things. What did I know? They should have someone come out from the office with common sense and go around with you and point out things to you that you don't have the foresight to see. Changes in design, stuff like that."

"The blueprint doesn't have a mind. It can't think. I wanted to be able to change the blueprint. I couldn't because, you know, that would have cost them money, I guess."

While there was no significant response among the great majority who felt the need for some change in the design, as to what would have been better in terms of physical design, there was a strong desire expressed by participant families to have more control over design changes, and a desire for help in making design decisions. The most succinct description of a possible inefficient decision flow in the design process was given by one young participant:

"Contractors come in and look at the blueprint and whether it's right or wrong in that situation, they just do it. Because that's the contract and they are liable. They want to make money. They don't have time to go riding down to (the TA organization), talking to them, telling them 'well, it shouldn't be like this'. They'd lose money. They're far away from the office. There's no phones real near even. Then (TA organization) is responsible. They have to check everything and o.k. it. I think that the whole system is a flaw. It just can't be done right."

The present institutional framework requiring regional design might also be missing chances for some significant cost savings. Excluding completely from consideration right now that some personal design decisions might call for a product less expensive than the FmHA design, there are cases where a regional design offers no leeway to
purchase materials that might be inexpensive locally because of market variation. For example, a siding of native lumber in a rural logging area might be less expensive than the prescribed siding material which is available regionally.

It is also possible to save money, particularly in long term maintenance costs, by designing houses that are responsive to the macro and micro climate. The difference in the climates of northern Vermont and southern Connecticut (both under New England Regional Office jurisdiction), for example, is significant, yet the designs are the same. Changing the amount of insulation is not by any means the only way a house could be economically responsive to its climate.

However, a value of the use of a regional design might be that it allows for an accurate and fast accounting and administration of the design and construction process. There is also often a direct advantage in bulk buying of a particular material.

AFTER THE HOUSE IS BUILT

Foreclosure Rate

Losses have amounted to less than two one/hundredths of one percent of the money loaned. Possibly the agency's foreclosure rate is so low because the family already have equity in the dwelling by virtue of their self help labor, and with rising rural land values have little difficulty selling out before foreclosure occurs. Also possible is that an overworked staff surely realizes that it takes less time and effort to process the application of a relatively affluent family than it does to decide the eligibility of a family with a lower income and/or marginal creditworthiness.

The group of available participants is very narrow. Theoretically, an applicant has to have been turned down for a mortgage by all the banks in
the area yet still him/herself to be creditworthy. In most cases the supervisors merely look at the adjusted income and total savings and assume that a bank wouldn't finance. The county supervisor might just not have the time to help make that case for creditworthiness. County supervisors are further reluctant to take any chance because there just isn't enough staff, according to one supervisor, "to do any dunning to keep folks honest".

The average income in the 502 program last year was $7,718 adjusted, with 36% of the families having over $10,000 adjusted, and only 10% under $6,000.
CHAPTER 2

An analysis of the independent owner initiated self-help housing process
CHAPTER 2

The goals of the independent self helpers are perhaps as numerous as there are owner-builders. They are certainly not as uniform nor as clearly defined as those emanating from the FmHA. That is the essence of this system of requisite variety. Some concerns do, however, surface regularly in discussions with independent self help builders.

Almost all speak of the goal of controlling costs -- to control how and what the available money is spent for. This has a number of implications. There were some families who could not have afforded a house at all without the economic support of a self help factor. There were also families who just got more than they would have had they paid cash for all the work involved in the production of the house.

Also critical to the goal of controlling cost by self help methods is the option to "spend my money however I want to". There is an awareness that the priorities of an individual family might be different than the priorities of a speculative market builder. The self help factor allows a home to be built that solves the direct needs of the family, and is the exact quality the ultimate dweller requires. (These freedoms can, however, be somewhat constricted by conditions placed by the financers of the construction, as is pointed out later in the study.)

This implies that within the goal of controlling costs, independent self helpers generally have goals of controlling architectural decisions that directly affect their perceived needs. Concurrently they have goals of controlling the quality of material and labor in their own home. Some families also spoke of the self help method as a challenge; a goal for these families was to exercise their personal capabilities.
NETWORK SUPPORT

Most families, however, spoke of their sense of personal ability as a reason why they felt they could, in fact, handle the process of self help housing. Sense of personal abilities came from a wide variety of sources. Perhaps the strongest of these was a situational proximity to other self help builders.

It has been often observed that wherever there is one owner built home there are likely to be more in short order. It seems that the more homes there are, the easier it is to start up, and the richer the options become. Owner-builders depend on each other for information about the building process. There is no question but that people reflect, to some degree, what they see their neighbors do in the construction of their own homes. In this study, "seeing other people building for themselves" was often given as one of the reasons why families decided to owner-build. When asked if they could offer any advice to a family considering self help building, one owner-builder family answered:

"My suggestion is this: get to know people to call on for advice. You are going to have to rely on yourself a lot and think things out often, but at least you'll have lined up some support."

In many cases simply seeing another family build is important support. Seeing a family who is not perceived as having greater skills or as being vastly superior in any area go out and build their own home is enough to seriously plant the idea that self building is possible in another family's mind.

While the number of families who are able to go out and be the first in an area (geographical or social) to build may be somewhat narrow, there are a geometrically greater number of families able to be the second ones to do it. The situation is remarkably analogous to the "pioneers" and
"settlers" in the early years of this country's growth.

The process of self help building a home with the help of an informal network seems to have values other than economic. A network is a loose collection of people within small geographical areas acting as resources for the self help family. At the core of the network are former and present owner builders. As homes often take years to totally complete, i.e. the building stage in a family's life may be five years or more in length, the networks have stability, while constantly evolving. They can also include on their fringes certain people associated with the building industry in the area, from lumber yard salesmen who can answer questions on application of materials, to building inspectors and more. One of these benefits -- a social benefit -- is participation in an ever widening community. In the process of gathering information, one meets many people who have experienced the same struggles that the new home builder is going through.

Spreading Knowledge

Very often friends who haven't built their own homes come by to help build. A small percentage of the self helpers are a bit touchy about unskilled people working on their houses. There is almost always, however, work to be done that doesn't even require nail hammering skill. Most often the comment hear from the owner-builders was that the friends and relatives were "really helpful", and that they "enjoyed themselves immensely". One family said:

"We got a lot of help from friends and relatives and they really got a kick out of it. Everyone seems to have picked up some enthusiasm or energy from this house. New neighbors have asked us for help and we've really been talking about building a lot now."

Being able to offer friends and neighbors a place to actually train to build their own homes, or to plant the idea and offer support so that
these people can themselves build, is vital to the owner-builder network.

Those who owner-build are very often being asked for advice and help.

"We're happy to do it. It's being passed on, the knowledge. Having gone through it, we know some places to go for material and some ways to do things that are not expensive but good."

The actual help in building benefits both families. One family obviously gets their house sooner and easier. The other family, however, gets valuable further support for the belief that they themselves can build also. Both the actual construction knowledge and support for belief in one's own abilities are spread.

Organized Social Support Structure

Sometimes the support for self help building of a home is found not only through individual contact but through certain organized social groups which do not directly promote self help housing, but believe that one should help one's neighbor, one should work cooperatively with friends and neighbors, and that one should offer "charity" to others. One institution of this sort has traditionally been the church.

The church building itself was traditionally self built by members of the congregation. When a member's house or barn burned down, often the congregation would get together to rebuild it, an action consistent with their belief in charity towards their fellow man. Even today, in rural New England, this small study easily found a house which following a fire was self rebuilt by its owners with considerable support from members of the congregation as an institution.

But generally speaking, churches today -- for whatever the reason -- are not as strong a social tie as they used to be. They can be considered a traditional support system that still exists to some extent, but which cannot be expected to offer major growth potential.
Congregations shared common value systems and beliefs, tended to be from a common social class and were from a common geographical area. A fledgling support system in our times are the newly emerging rural food cooperatives. The "congregation" of a food cooperative, like the church congregation, also shares common value systems and beliefs while perhaps transcending social class and income level barriers. Today's food co-ops, with their ecology/economy and religion/politic, maintain a social outlet for their members somewhere between that of the traditional church and the traditional farmer's grange.

There are examples in this study of families who found other members of their food cooperative philosophically amenable to supporting their self help housing efforts. In at least one area, the food co-op was ordering building materials such as insulation and alternative heating systems for its members.

**Finishing Cooperatives**

Sometimes network support takes specialized forms. In some areas, cooperation among self help families goes beyond social visits that end up with a hammer in everyone's hand. Informal "finishing cooperatives" were developed in some areas. Basically, families agree to work on each other's houses for a specified period of time, trading off hours to equalize the effect. Most often the trade offs occur near the end of the projects, when work easily done by larger crews is available (sheetrocking, taping, painting, etc.).

Support from the networks in the form of encouraging a family to realize their own abilities is the first step in the realization of the family's housing goals. In every phase of the self help process, the
information received from the network plays a major role in the decision making process.

FINANCING

If, greatly simplified, the goal of the independent self helper is to control costs and at the same time produce a home that satisfies a range of personal needs and desires, it must be obvious that achieving that goal depends heavily on financing schemes. As described earlier in this section, families using the self help housing method to control costs fall into two categories: I. those who couldn't afford a house if not for the economic support of a self help factor; and II. those who could have gotten a house, but only one which was far short of meeting their needs due to the costs of outside labor and conventional methods and materials of construction.

Within Group I are some who: A. financed the house with a mortgage for the total cost of construction (less conventional down payment); and B. others who financed without a lump sum mortgage. Those without mortgages were, therefore, building incrementally. When enough money was gathered to purchase more materials or tradesmen's time, the progress was made. Families built without mortgages either because they were directly refused by a bank (they just didn't have any financial credibility in the bank's eyes) or because, although they were eligible for a bank mortgage, they refused it because of conditions attached.

An example of a family in Group I who did get a mortgage (A) would be a family who had the credit rating and the income to afford a $20,000 loan. But it is very difficult to have anybody build a home for that price that satisfies the needs of that particular family, or to find a home that cost only $20,000 that somebody else had built. A home could only be
built for $20,000 if some money was saved by the family by handling some of the tasks that conventionally would be performed by someone else who would expect to be paid cash.

An example of someone in Group II who was refused a bank mortgage would be a family with a poor credit rating, or just as probable, a family of low income who could pay back only a relatively small loan, a loan that a bank would find to be too small to build a house according to convention. The bank would feel that they were financing a venture with not enough market value to safeguard the investment. The family's option is to build out of income, savings and a variety of other financing sources discussed later on in this section.

The other families in the second group, those who refused an actual or possible mortgage loan, usually did so because a) they had an aversion to debt, or b) they felt that the constraints on time of construction and style placed on their projected home by the bank too great to accept.

This is the matrix of possible financial situations the study turned up. The obstacles and the family's methods of dealing with them follow.

**Banks**

Banks have hindered independent self help building in many instances by either blocking access to their financial resources or by offering them with a set of conditions which tend to limit the range of "quality of life" decisions that home builders might potentially be responsible for.

The rural credit gap is well documented. There aren't many large financial institutions located outside sizable population centers, although recently more and more rural banks are being bought out by large resource holding companies. A major factor in the FmHA's loaning its own money direct to the applicant, instead of guaranteeing a banker's loan,
is because of this acknowledged lack of money in rural credit institutions.

It is somewhat expensive, administratively, to handle country property. A bank's appraiser, for example, can spend his/her entire day out on the road and see but a relatively small number of houses at a very high cost per unit compared to an urban bank official. The market for foreclosed real estate historically was not as active as in many urban and suburban markets.

Because of this great fear of the small resale market, lending institutions have very strongly influenced a builder's priority. Theoretically, the self help builder "maximizes the use of his resources in solving his housing problem according to his priorities whether they be space, amenities, minimum cost, particular location, esthetics, or whatever." In reality: "We had to build a house the bank would accept", one self helper complained in an interview.

In another instance, the lack of plans for a basement in a house caused the bank to refuse financing. The family involved felt that they could build their house on concrete piers and then seal up the crawl space to the wind. With their own labor the cost of this type of foundation was about $100. A poured concrete basement would have cost over $1,400. Over the life of a thirty year mortgage, that additional cost of $1,300 could mean a total cash outlay of well over $4,000. Obviously, the lower the direct cash cost the lower the debt service. At that price, a damp concrete basement was just not a top priority for the family. However, it was not a decision they were allowed to make if they wanted to finance through the bank. Resale market value was the criteria for a bank's judgement of the value of a home. Questioning of the bank's supposed fool-proof ability to judge resalability was heard often throughout this study.
Time/Money

A certain group of families self help build "because we saw a way to get out from under a mortgage quickly". Many self helpers don't owe very much at all when they finally complete their homes. "That's the point", according to one. Another explained: "It turned out to be cheaper to do this than to rent an apartment or a house, and after three years it will be all paid off...we wanted to pay it off and live for free." Most independent self helpers in this study were able to successfully build a home without obtaining a lump sum mortgage. The price they paid instead was time. No one completed building within anywhere near the amount of time someone with an immediately accessible (either limited or even relatively unrestrained) lump sum would have. Most of these people were motivated by lowest first cost and lowest carrying cost.

Completion

Generally, when a bank loans money it expects to at least start receiving its money back almost immediately. Therefore, the time spent building a new house while still living in and paying rent in an apartment is quite expensive. Time really is money, in this case. One self help builder put it this way: "If I had more time I would have done more things. We couldn't pay rent and a mortgage too, you see. It was cheaper to hire labor than do the work ourselves, slowly." The bank forces the builder to complete quickly. "You're in the hole right from the beginning. The last payment bails you out and you pay off your construction bills." Hence, a family can't stop at any point. They've got to complete as quickly as possible to move in, stop paying rent at the previous dwelling, and get the last payment to pay off creditors. This causes some owner-builders to have to start subcontracting out work because it can get done faster than if they did it themselves. This, of
course, costs cash. The bank, in offering them money, forces them to spend more than they would have wanted to.

Unconventional financing

In many cases, conventional financial institutions were used, albeit unconventionally, in order to build the house. The denial of mortgagability of the house in its uncompromised form was dealt with in a variety of ways:

"Once the banks turned us down for a direct mortgage our money came from two credit union loans. Personal loans. They had to give it to us because we were both members. That's sort of why we joined. We built slowly so we didn't need a great lump sum."

In another instance, both adults in the family had been working for about a year at the same jobs. They were of low moderate income, but creditworthy in the eyes of the bank.

"We were offered the land and the camp (cabin) for about $4,500, a terrific price. The local bank wouldn't give us a mortgage of any kind. They gave us $1,500 with the land and camp as collateral at a personal loan interest rate of 13%. They were very nice people. I'd like to meet them in a dark alley. We got the rest of the money by taking out personal loans at two other banks. We told them that one was for apartment decoration and one was for a vacation. We had about $1,000 in savings that was used up."

In instances where a lump sum mortgage was unobtainable or undesirable, the process of incremental building and low capital cost building (self help labor, inexpensive building materials, etc.) allowed for incremental financing. By financing large sections of the construction out of recurrent income, life style sacrifices had to be made by the self help families during the construction period. However, these sacrifices were accepted as they allowed the only possible financial route to the goal. It seemed that hardships imposed upon oneself were easier to accept than hardships imposed by someone else. For example, none of the families interviewed
would have accepted living on so little a percentage of their income had the money been going to a landlord, for example, instead of their own house construction.

Personal credit arrangements with individual building material suppliers and sometimes individual tradesmen marked many families' venture into self help housing. There was a considerable flexibility of financing among a certain segment of independent self helpers.

THE DESIGN PROCESS

Every decision in the design process was made in a direct attempt to achieve some of the original goals of the self helpers; basically either to control costs, or to satisfy certain needs of the families.

Changes over Time

Designs often changed during construction. Many times the changes were simply made to correct errors in judgement. A family with little design experience would logically be expected to have some difficulty conceptualizing three dimensional space, and even perhaps understanding the uses those kinds of spaces are most suited for. Often the construction process itself indicated new design directions to the families, and ideas were stimulated by the visual environment of the partially completed home.

There were also cases of the home's design being altered after the construction was ostensibly complete. In these cases, new windows were frequently cut out as the occupants more clearly understood where the sun was able to shine in, etc. Frequently, even families who had the most difficulty building had absolutely no qualms about ripping up walls that "needed" windows and other changes after they were all settled in their home. "I found that I had a greater understanding of what I needed after
the house was finished." They also found that after building the house themselves in the first place, they certainly knew how to rebuild it.

**Determined by Material**

Houses changed design before they were complete for reasons other than a greater understanding of needs or an evolved aesthetic. They changed because of the acquisition of different materials that had strong design implications:

"The house is so big in part because the beams came from the sawmill six feet too long at no extra charge. So, after figuring the pros and cons for a while -- well, why not -- we built an extra floor."

There are many instances of the design being affected by both choice or availability of materials, and the materials individual characteristics, in the original design stage. These situations can be broken down into perhaps two groups.

For a certain percentage of the self help market one important method of controlling costs is to use materials that the larger conventional market considers "waste". This includes overstock material, used material and labor intensive low capital outlay material. For example, at least two families found that local glass companies often have a stockpile of custom-sized thermopane window that over the years were cut to the wrong size by accident or were just not picked up by their intended customers. Naturally, the company was willing to sell an entire house worth of these windows for a tiny fraction of their original cost. The size of the thermopane windows that the local glass company sold them obviously had an effect (not negative in the eyes of the occupants and others) on the design of the house.

Some families were able to buy end lots of roofing materials or the remaining stock of discontinued siding or window lines from local retail
lumber yards. Many families bought used bricks and beams, plumbing fixtures, doors and windows from demolition companies and from individuals through tag and rummage sales.

Due to low transportation costs and reduction of middleman profits, families found cost effective ways of using indigenous building materials. In New England that meant purchasing lumber from local sawmills.

Most small sawmills in New England sell a very large percentage of their construction lumber to local owner builders. (Their greatest market is pallet and furniture manufacturers.) Professional home builders almost always go to retail/wholesale building material supply yards where they can one-stop shop for all materials needed in a house: lumber, roofing material, hardware, windows, doors, etc. Their mode of operation makes it too expensive to spend the time shopping at two locations, or else they cannot get the necessary discount on the hardware, etc. unless they purchase the lumber also.

Information about purchasing from sawmills almost always comes from other owner builders. It certainly won't be found in newspaper ads or be gotten from professional builders. Sawmill prices often range around 50% that of retail yards. For example, the present price for nominal 2x4 studs at retail/wholesale yards in central New England is $1.45 to $1.60. Sawmills are getting from 75¢ to 88¢ for a full sized 2x4. In all other sizes, the price spread is even greater.

Mills are much more flexible in being able to accommodate the different size lumber needed for more personalized designs or alternative building methods. Sawmills can just as easily supply material for a pole frame or for a post and beam house as for a stud frame house. A retail yard readily stocks framing material for stud frame only, and if asked to supply materials for the other systems, they charge a premium.
In supplying something out of the ordinary, a retail lumber yard charges not only for the material, of course, but also for the trouble of having to go outside their normal channels to obtain the item. This is the reason what, at a yard, a timber used in a post and beam frame that contains say three times the amount of wood that a 2x4 stud contains, will cost considerably more than three studs.

Direct from a sawmill, however, the same size timber will cost less than three studs. The cost is directly tied to the difficulty of the manufacturing process: to get three studs, the mill operator has to take that timber and run it through his mill an extra two times. This extra work is reflected in the added cost of the stud.

Information about purchasing glass company mistakes, or about which wrecking company has used bricks, etc. is rapidly passed among owner builders. For those owner builders who take advantage of it, the availability of these perhaps labor intensive materials has an affect on the building method and design of the self help home.

The ability to see the value in materials considered not valuable by the conventional housing industry is most often nurtured by the network of former and present self helpers. Using these kinds of materials can have a visible effect on the design. It certainly drops cash outlay. It can very easily make a design that deals with the goal of addressing personal need and personal quality issues.

The second way that material affects design is through the use of "stockpiling". During the period of network support, the future self help builder will often hear about or actively search out special "deals". A building being torn down with inexpensive brick for sale by the wrecker, a lumberyard clearing out a warehouse of old windows and so on. Often the family will start to purchase material before the plans are even devel-
oped. Perhaps the first materials bought are those that particularly fill a "quality" goal: an antique window, for example. Underpriced materials are bought as the families belief in their ability to build a house in the near future grows. Therefore the design has to respond to the materials already purchased. Financing out of recurrent income often means that long lead times must be accepted during which materials can be stockpiled. This is part of the reason for some of the "personalized" or "unique" aspects of design in some self help homes.

Network Style

The variables of design style within an area are based to a great extent on the range of information and imagination available from the network, and the amount the individual family is able to add on their own. If, for example, within one network only one type of siding is used on all of the houses, much information on sources and application methods could be found, but very little information on other options might be available to a new family. So to the extent that the family is unable to gather information outside of the network, the design of their house is somewhat determined by the information parameters of the network they use for information and support. Obviously, networks vary in the range and scope of their information.

THE CONSTRUCTION PROCESS

Information Gathering

There are many ways that the construction process of the independent self help housing studied in this research is geared to achieving the original goals of the families.

Being able to participate in the construction process requires being
able to gain the necessary construction information. The information gathering process normally takes the form of a major education quest before actual construction begins, and then periodic searches for answers to specific construction questions during the building phase.

The source of much of this information is the network. In answering the question about what advice could be offered to a family considering self help housing, one owner builder responded:

"You've got to talk to people in your area. Books are really good, but it's very good if you can know where to go to talk to people who had built houses in the particular method you are thinking of. Then, see, more of the research would have been already done. If you can check out different methods it frees you from having to do the same thing as everybody else. ...Now we're the experts at pole frame construction. Everyone comes to us. We know where to look for answers. We encourage people."

The resources that can be called upon to help in the planning and construction of a house are for the self helper, very wide in scope, offering more options in many cases than are available to the standard 3 or 4 man carpentry crew of professional homebuilders.

**Prerequisites**

When asked who might not be able to build a house, the families in this study refused to offer many restrictions. One woman head of household said: "It doesn't take a lot of training to understand how it works. Really, building a house is a lot of common sense and logical thinking." Most felt that though they were able to solve all of their problems dealing with construction ("Whenever we were in doubt we tended to overbuild."), what would have been most valuable to them while building would have been more advice about building techniques and methods. In all cases, discussions of construction techniques became a major topic of daily conversation.
Many families contacted for this study spoke of the need for time to successfully (i.e. inexpensively and in a manner that fulfilled goal priorities) self produce a home. Other studies have shown that teachers, firemen, seasonal workers and others with large blocks of uncommitted time have historically been successful self help builders. Some in this study have taken the position that: "You really have to be in a position to not work -- to have gobs of time." There were two instances where families had the land for a while but were unable to find the time to start building in earnest. In these cases it wasn't until the head of the household became unemployed that actual construction began! The families lived and built off of savings and unemployment insurance, moving into an only partially completed house to save rent, commuting time to construction site and travel expenses.

Often, families spoke of how much work planning for and building the house actually was. "I guess people have to be realistic about the problems. It was certainly 100% more work than we thought it would be." Though many felt that building was more difficult and "a lot more serious" then they had expected, quite a number of families spoke of the building process as being "more interesting" than they expected.

"I've grown to love working on the house. If we had done the whole house ourselves, the first six months would have been as pleasurable as the last six months have been. The beginning was full of subcontractor and money hassles."

The most difficult thing about actual construction was having to work alone. It is a basic law of carpentry that two people working together work faster than one person working twice as long. Scheduling help for those jobs that took many people (lifting walls, beams, etc.) was not a major problem.
Coring

A particularly simple and efficient way to aid the family in building incrementally and also controlling costs was used by some families. These people purchased land that already had a cabin on it that they were able to, after minor improvements, move directly into, saving rent, commuting time, etc. They started their new home as an addition to the renovated cabin. Similarly, another way that people save on rent is by moving into the self help house before it is complete. Though this approach saves cash expenses, it delays attainment of some of the other goals in many cases in that the pace of construction is drastically slowed. Said one family:

"Once we didn't have that deadline of closing the house in by winter -- I mean, we were now living in the house, we had to close it in -- we slowed down a lot. Once we were warm and sheltered, even though it wasn't really comfortable, we lost all sense of urgency."

Conventional Construction Industry

Networks tended to offer building systems most suited to the particular skills of the non-professional self help builder. Very often it is not one that can be directly copied from the industry.

For example, post and beam timber frame construction is a method that really requires an entire crew for only one or two days during the entire framing process. A stud frame house, on the other hand, requires a daily three or four man crew to be constructed efficiently by a non-professional crew. Standard industrial production methods proved unsuitable for many owner builders.

In one instance, a member of a household self help building had been employed in the construction industry for three years prior to starting their own home. Nevertheless, he didn't use the method of construction
he had learned from his job. Instead, he used one learned from neighbors who had built their own home.

**Jobs**

In some cases former owner builders get proficient enough at certain pieces of the construction process that they are able to moonlight from their regular job and pick up extra income working for other owner builders. This occurred only when there was a large enough self help community operating in the area. Some of the troubles that owner builders have with subcontractors are eliminated when working with a moonlighting former owner builder.

For example, many professional subcontractors are loathe to let the owners work with them as helpers doing some of the unskilled work. There is certainly less of this attitude among moonlighters who have built their own homes in a similar manner. Knowledge was spread and costs were lower.

**Subcontractors**

It is often difficult for the owner to utilize the subcontractor efficiently. In some cases a self helper will closely watch a sub to pick up pointers on the technique and/or to maintain quality control. A professional subcontractor who works mostly with professional general contractors will often resent a client hovering around his work so closely. Furthermore, this family is not familiar with industry standards or procedures and might expect different quality standards than called for in the contract price. Professionals are more aware of what to expect from each other, and the general contractor who can use as bait the lure of steady work on perhaps 6 to 12 houses per year can more often get a subcontractor very willing to please.
Most subcontractors won't easily accept the idea of the customer working with him doing the unskilled work. This can be an important area of cost savings for the owner builder and in this study these savings occurred often with moonlighters, both professionals and former owner builders. For example, a single mason on a small job will charge the same rate for laying up the bricks for a fireplace as he will for mixing the mortar and carrying the bricks to within arm's reach. To keep costs down, a family must be able to hire tradesmen only for their special skills.

Another problem is that the subcontractor is not going to look very kindly upon a customer providing the materials for the job. The 30 to 40% markup is expected by the sub in residential jobs. The greatest use of the subcontractors in this survey occurred when the self helper was actually renting a tool and an operator (i.e. backhoe, redi-mix truck) rather than a tradesman.

Discounts

It's clear that the professional building industry is often a hindrance to the self helper rather than a help. Another example of this concerns "trade" discounts. In most areas it is difficult for the self helper to get a trade discount on plumbing, heating or electrical supplies. Yet the very smallest mechanical contractor doing only simple repair jobs that doesn't total a complete house's material list in an entire year can walk in off the street and get the trade discount. Some of the most valuable people in an area's self help network are those people who have been able to persuade a supplier into offering them a trade discount. These people often act as conduits to the rest of the community. Suppliers are aware, either directly or indirectly, that many professional subcon-
tractors the bulk of their business, frowned on too great an owner builder movement. It takes business away from them. Whether most owner builders could build at all if they had to use professionals is a moot point in this scenario. The prejudice does exist.

The more self helpers blindly depend on, rather than selectively use, the institution developed to serve the professional building industry, the less the house is going to reflect their own personal needs and the more it will potentially fit the industry's profit needs. As explained above, the naive self helper will often pay more for materials than a professional buying the same amount. Furthermore, the materials are often developed to be economically attractive to certain types of construction procedures prevalent throughout the industry; procedures that are not necessarily suited to the owner-builder.

Permit Officials

The self help builder often has difficulty with building inspectors. Obviously, the self helper is going to commit many mistakes due to inexperience. It is the building inspector's job to make sure structural or other safety related mistakes are corrected. Excluding personality or profit conflicts (the building inspectors are often contractors), problems might occur because of the extra time the inspector might have to spend at the site checking and rechecking construction. Normally, an inspector will deal with a few contractors whose work they have seen dozens of times already. They know what quality to expect and where to look for slipshod work. Complete inspections are necessary for self helpers.

Some of the problems are based on precedent and mutual paranoia. The inspector might be suspicious (sometimes rightly so) that on a self help job some work that by law must be done by licensed tradesmen has
been done by the unlicensed homeowner or an unlicensed moonlighter. One owner builder, when asked what would have been most helpful to him during the building process answered: "To have had someone strangle the health inspector for me!" He added: "This town makes it a real hassle to build if you don't have a bundle of money." But it can interfere with the goals of independent self help builders in that codes tend to describe complete houses, not phases in an incremental house.

On the other hand, there were a minority of families who found the building inspectors to be of great help in answering questions about construction. In small towns and rural areas the building inspector and the self helper might have known each other for quite some time. So in some instances where an official was an asset, a past personal friendship was the key factor. In other cases, however, the building inspector just took it as his responsibility to help the citizen of his/her town rather than "hassle" him/her.

Considering all the obstacles, it is somewhat of a surprise to see that the owner builders do tap into institutions that were not meant for them and generally do it with great skill.

QUALITY

Many people wonder how a relatively unskilled owner builder can construct a house that will stand up to the ravages of climate, use and age. This small sample study found sturdy and, in most cases, overbuilt houses that met the quality needs of the dwellers. It is lack of secure knowledge which causes overbuilding, which runs contrary to the goal of controlling costs.

Sometimes the finish work was not up to professional quality standards; a molding corner, for example, might not meet exactly flush. Just
as often, however, there was exhibited imaginative use of good looking
but inexpensive local materials. The impression received most often,
even if trained as a contractor, was not one of low quality work. Cheap
materials will often stand out more glaringly than will unprofessional
workmanship.

Some of the poor workmanship can potentially be alleviated with more
technical assistance. One family said:

"I wish someone would have impressed upon us the real importance
of starting square so we wouldn't have to spend so much time
cutting to size each different piece of this finishing wood."

Obviously the wall could have shown a higher quality workmanship if each
of the approximately 20 pieces of wood that went into it could have been
cut to the exact same length, with a right angle on each end, instead of
each piece being a different with a different size angle on each end.
Poor quality work often has to be corrected later on in the construction
and that costs time.

Some aspects of the quality of the houses just couldn't be obtained
from the standard industry speculation quality house.

"The height of the kitchen cabinets! All my life I've had
high cabinets. Now we built them low so I can use the top
shelf. I still can't believe it."

There is not and, never could be, an "equivalent" house on the market.

Another family said:

"We feel better here. A lot because we built it ourselves and
we know the quality is of a high quality. There are no hidden
defects that are going to surprise us two years from now."

The independent self helper has the theoretical capacity to achieve
his/her housing goals. For a great majority of the people, however, the
quality of the network is the restraining factor.
CHAPTER 3

An assessment of both systems in relation to the potential values of the self help process
CHAPTER 3

The previous chapters analysed two methods of self help housing and compared their real values with their stated goals. This chapter assesses those methods by comparing them to the potential values of the self help housing process.

Self help housing can result in lower public and private housing costs, enabling more low income families to gain improved housing conditions. This means not only improved living conditions and security of tenure, but a closer fit of dwelling to dweller needs and priorities.

The process also can result in the development of human benefits, providing opportunities for increased individual creative and personal fulfillment, opportunities to use resources as one sees fit and benefits including construction and managerial skills.

There is something gained by a family that goes through a long and difficult struggle that at times they themselves thought they might not be able to finish. In none of the cases in this study was a house built without a certain amount of difficulty, a certain struggle. To succeed, one had to either use, become aware of or develop, qualities of perseverance, confidence in one's own abilities and independence. The process can generate increased self status.

One family said: "I really like that we did it with as little experience as we had, instead of feeling that we weren't capable of doing it." Another said: "We have a tremendous amount of self respect, for one thing. We got it from building our home", and then later: "We certainly got more than we paid for, and more than we bargained for; we got exactly what we put in."
The process can also result in the development of social benefits by involving people with others in their community, and by offering people the tools needed to be responsible for themselves instead of dependent on the government.

The self help housing process is a framework within which the dweller can control the type, size and quality of design, construction and financing. It allows for dweller control of the timing of construction and financing. In other words, it provides many routes to the goal: a home -- one that satisfies the user's needs.

Present centrally planned housing delivery systems seem to be unable to provide these characteristics. There is an analogous situation in another institutional framework: an army is a hierarchical organization with one point collecting the information and providing authority, setting the goal and giving the non-alterable commands on how to reach that goal.

In contrast, a commando operation is quite the opposite. Every group has equal information and equal authority. A commando group has the autonomy to decide upon any route necessary to accomplish that goal.

The self help housing process allows exactly that kind of autonomy. It is, you see, commando housing!

**DWELLER CONTROL**

Ideally, self help is necessary to insure flexibility and variety of design and cost. In reality, the FmHA does just the opposite. Though the participants actually have a hand in rejecting their homes, they have little opportunity to control the major decisions of siting, design and cost. It is the FmHA and the sponsoring technical assistance organization who control what, where and how the house is built.

For example, participants don't have a chance to choose a site. Sites
are normally acquired, or at least located, by the sponsoring agency before the group is formed. The only choice the dweller has then is first come-first served among the ten sites chosen for the group.

Another example is the fact that all the houses in a region are one of three or four barely different designs. Due to the requirement that in a mutual help group all the houses have to take exactly the same amount of time to finish, the dwellers choices in design are severely limited. Participants obviously cannot have real freedom of decision in this system. They are severely restrained right from the start. They don't have autonomy - unless they have the professional expertise (which by definition they don't) to determine, and then the persuasive power to convince the agency that though their design is different, it will take exactly the same amount of time to finish as the others and will require exactly the same level of skills.

In reality, due to chronic agency understaffing, the only plans that have any chance of being accepted without a major struggle are those that have been used before.

What is occurring with this method is that the technical assistance group is essentially acting as general contractors, assuming their roles, getting paid their overhead. They buy the land, hire the subcontractors, order the material and set the construction schedule. This method does not help the dweller attain many of the potential values of self help housing, and given the lack of management experience, it makes the dwellers dependent on the TA group for the present, and some other source in the future, instead of fostering dweller self dependency.

**Information Searches**

Independent self helpers, on the other hand, are hindered most
crucially by a lack of adequate technical information. This problem is one that cannot be wholly solved by something like a "national self help building manual", as each area requires different architectural solutions, and just as importantly, has a different administrative context.

Though there is a tremendous range and depth of advice on construction methods potentially available to the independent self helper, actually getting that information requires motivation and an awareness of the resources that all potential self helpers couldn't be expected to possess. Though it is easy enough to think of and locate the nearest retail lumber yard, finding out about local sawmills not advertised in the Yellow Pages and by billboards, or finding out about salvage yards or, particularly, other self helpers is much more difficult for the uninitiated. The process is something like panning for gold. There is undeniably great value once you find it.

A crucial difference between the two methods is in how wide a network of resource people each participant is using. In the FmHA program a family uses the construction supervisor of the technical assistance group and the five to nine other families to gather information and assistance. The construction supervisor, if competent and dedicated, is a valuable asset. He is one person on the job much of the time with the capability of answering construction questions for the building system in use.

The independent self helper, knowing perhaps only one other owner builder family at the outset, gets to know many others; through mutual friends, chance meetings at the sawmill or lumber yard, or by reference from the sawyer or a backhoe operator, for example. The track runs back on that same path also; i.e. learning about suppliers and subcontractors through other self help families in the area and, perhaps, becoming known
to other self help families as the experts in a network on a particular facet of construction ("experts" by default only, as work doesn't necessarily have to have been done well. They just had to have been the only family in the network to have tried it.), for example, being the first to use concrete piers instead of a poured or block foundation. Everything cannot be learned from a book. Experience is needed.

The experienced family will know the advantages, for example, of buying versus building the pier forms, where to buy the forms, or what to substitute for forms, how to or when to brace the piers, perhaps the advantages, for a particular sized job, of mixing the concrete by hand versus renting a mixer, or which redi-mix company will pour a small amount, and so on.

The problem with the network approach is that much of the advice offered might just not be correct or, if it is, then the multiplicity of construction methods to get a single job done is sometimes mind boggling to the inexperienced family. Increasing and stabilizing the quality of the resources is sorely needed in many networks.

In the case of the FmHA, since they only allow one system of construction and really only one basic style of house (developer tract house), most of the construction questions, at least, can be answered by the construction supervisor, but it is the approach itself that shrinks the range and depth of resources potentially available.

**Transfer of Knowledge**

Is the knowledge acquired by those in the FmHA program transmitted as easily as the knowledge acquired by independent owner builders? Will that knowledge be helpful to other potential self help families, or is it given in such a way as to be essentially valueless to others? Does the
process stop with the FmHA participants or is the knowledge spread?
Indications are that those people who use organized mutual help are not
reaching their potential as key contributors in providing access to a
system of information and support for other low income families.

For example, when an independent family starts gathering information,
talking to people in the loose network, chances are they'll hear about
the particular foundation option mentioned above, for example, and learn
whom to ask questions of. Knowledge is spread, in an unorganized faltering
way perhaps, but there just is not this spread among the FmHA partici-
pants.

In no mutual help group surveyed, and in none studied informally
outside of the survey groups, did participants call on the expertise of
earlier project participants in the area, even if both projects were
sponsored by the same technical assistance group!

Management Equity

There are a variety of tasks to be handled in the construction process
that conventionally require the hiring of personnel. The most obvious
are the actual construction tasks themselves. Also costing money, however,
are the tasks of the general contractor. The role he plays coordinating
the project is billed out directly and a profit is added on. The self
help family has the potential to gain "sweat equity" by doing the construc-
tasks themselves, and the potential to gain "management equity" by handling
the role of the general contractor themselves.

In the final analysis, there really is no management equity gained
in mutual help housing programs. Money for administration is spent
directly by the government and the management is handled by the technical
assistance organizations.
Interviews with independent self help families confirm that there are gains other than economic in this housing process. One major advantage of the process beyond cost savings was in the "character growth" of the individuals; the skill and confidence developed by being in control of a complex process and handling it to fruition. This is a management skill—a skill that is transferable to an infinite number of occupations and situations. In the FmHA, the participants develop only some construction skills, which are surely valuable, but much more limited in scope and potential value than management skills.

Families should ideally be able to choose where they will live, in what type of housing, in how much space. They should make these decisions based on an educated understanding of the issues (an area where the agency can truly aid) of site, design, materials, construction, schedule and costs.

The independent self helpers, by handling the administrative tasks themselves, gain equity (contractor overhead is typically 20 to 25%) and experience in construction management.

Organizational Support

One of the advantages of working with an organized advocacy group is the power they have negotiating with suppliers, tradesmen or government bureaucrats who are not fully cooperating with the participants. The organization, through it's attorneys, probably has a clearer understanding of its legal rights than most individuals do. This can help keep costs down.

Systems Match to Individuals

With the FmHA there is only one way to get from point A - no house - to point B - a house. With the independent self helpers method there are
a variety of ways. A system should be suitable to the participant's skill levels, motivational levels, and employment patterns. Independent self help is or can be, because the dweller controls the process. But while the FmHA program might be suitable to a fairly large group of families, that group is obviously smaller than the entire market they are responsible for, and unless there are increased acceptance criteria, the system concerning participant attitude won't match up to the people very often.

Among even the most financially desperate of the independent self help families studied, the participants admitted to times of great enjoyment -- of great pleasure, due to and during the building process. Even the most unidealistic families, who went into the FmHA program thinking only of the money they would save, ended up at least somewhat more confident in their own abilities to affect their environment. Nevertheless, the FmHA acts as if their only goal was to build the product inexpensively, quickly and soundly, giving no thought whatsoever to user self satisfaction or to any other possible advantages accruing from the process. The agency does not attempt to take advantage of the skills and confidence gained with any type of follow-up program. Through its strict reliance on centrally designed or approved houses it seems to stifle the chances of personal discovery and individual initiative and therefore destroys some of the great advantages of the process in much the same way that a poor teacher can stifle the education of a student.

Other benefits the self help process offers are direct construction skill benefits. Many of the mutual help houses in New England are actually pre-fab or, if not, have the framing done by subcontractors. The range of skills learned is smaller than in some independent self help. There are, of course, advantages to having less physical work to
do on the house and, while not advocating complete self building in all cases, the fact remains that the more actual work one does on each phase of the house -- even if it's just working along with a crew doing the job -- the more skills are gained and the more capable the individual is of handling maintenance or renovation work.

Expandibility of Systems

The potential volume of FmHA participants is somewhat limited by availability of sponsor financial support and number and ability of the technical assistance organization. Both systems seem administratively expandable. The FmHA, which is already at least nominally in most of the rural areas of the country, merely has to increase staff and spread their hierarchy. The independent self help network can expand by increasing the density in each area depending on local conditions permitting growth. An area's dependence on a regional hierarchy is minimized, though potentially present where valuable.

FINANCIAL

The FmHA always emphasizes the financial aspects. They consider themselves basidally a credit system. They do not give emphasis to the planning, management or construction skills that might be developed. The agency is, however, extremely valuable as a credit system. In fact, the conditions on the credit tend to stifle many of the other benefits of self help housing process.

The need to establish oneself as a good credit risk accounts for some of the difficulties of very low income independent self helpers. Just as the FmHA has strict procedures that reduces dweller autonomy, so the typical benk lender can influence the type and course of construc-
tion to a considerable degree. Banks are geared to non-risk situations and self help is most often not that at all, in their eyes. It follows that for their mortgage security, the safest society for them would be one in which all people could readily accept the exact same house. Then their risk would just be in correctly determining market demand in terms of total units needed. When they have to start considering the factors of personal taste and the differing needs of users, the whole calculation becomes very complex, there is room for error and therefore the risk increases. It seems, then, that the closer the self help family comes to building a house that truly satisfies their personal needs, the more difficult it will be for them to make a case to the bank that the house is easily resalable to a large market.

Banks would rather loan money to a builder whose work they have already seen and profited from. Excluding the provision that the FmHA is the creditor of last resort, they work on the same principles as the bank. They finance lower income people but view creditworthiness and risk with the same attitude as the banks.

The FmHA offers a complete housing package. They don't offer a step by step low cost housing program. "They hand out a fish, they don't teach a person how to catch one." In concentrating on direct costs they ignore the effects of their activity. While concerning themselves with carrying costs, they never consider the option of building a shelter so low cost, so incrementally, that the mortgage itself is perhaps eliminated altogether after only a very short period of time. This is a viable option for some families in independent self help.

Many independent self help builders in this survey were striving to avoid mortgages altogether so that the money in the limited budget could go towards other essentials besides debt service. Time and time again
they have proven that housing can in fact be built this way in New England. Obviously there are some tradeoffs concerning the initial level of physical amenities but these decisions remained the dweller's own responsibility.

The study showed that a real value of self help building was that if the house is built incrementally, with low start up and low incremental cost leading to high terminal value, a long term mortgage can actually be avoided altogether. Since \( \frac{1}{2} \) to \( \frac{2}{3} \) of a mortgage is just debt service at normal interest rates, avoiding these charges by avoiding long term mortgage is a major advantage for this method.

So, along with incremental construction, a mechanism for incremental short term borrowing at subsidized interest rates must be developed. In the network method, there are a dearth of financial resources.

With the incremental method, unlike the FmHA method, time is not directly related to money. That is, once a lump sum mortgage is borrowed from the FmHA, the sooner the house is completed and the family can move in to stop paying rent on their previous apartment, the sooner expenses are lowered.

**Income Range**

Through its income requirements, the FmHA is really setting an income floor below which people are just ineligible for the program. A family has to be able to pay back the costs of a fully completed house. The FmHA decides on the design and materials of the house, and the amount of sweat and management equity a family can put in. Simply stated; they decide the cost of the house. A completed house built to FmHA standards will cost more than they can afford, hence no loan! This procedure keeps the agency from dealing with low income families. The average borrowing family
income at the FmHA now is $\$

There are many people, however -- the unemployed and seasonal workers, for example -- who have much time (a primary requisite for owner builders according to both groups) but little money. In reality, the FmHA provides assistance to those above the poverty level who still have inadequate housing -- a valid group, but not a complete group of those people living in rural areas who need improved housing. For the group they do serve, though, the FmHA offers the necessary amounts of money, at excellent interest rates, whether standard or interest credit, and they thereby provide a very valuable service.

Cost Savings

In New England in the recent year, total participant outlay for homes in the mutual help groups has averaged $26,000. Additional government direct subsidy in the form of grants to technical assistance groups has averaged $3,200 per house. The market value of these houses has been three to four thousand dollars more than that total. So participants are saving over $6,000 and the government is saving over $3,000 (less interest subsidy) compared to loaning money to participants for direct purchase.

In contrast, the independent self help method, due to lack of accurate record keeping and the incompleteness to this date of some houses still not complete after five years or more, has no easily retrievable figures with which to make point blank conclusions about the method's direct economic value.

Some estimates are available, however. Among those families that built incrementally, the average cash outlay -- exclusive of land -- was only $5,500! With land the average is $8,500. The average worth of the properties today is close to $22,000. More labor was done by the incre-
mental builders than was done by the mutual help group, different materials were often used, and the independent houses tended to be around 250 square feet smaller on average. The average income of the independent self help builders was $6,700, with some families earning only $5,000 per year.

DESIGN

Freedom of choice in design allows a house the potential to serve the needs of the dweller accurately. A design must recognize both user context and design context.

A major difference between the two methods is the ability within the independent system to build a core and then incrementally add on until the structure fills the family's needs. This option is not available in the FmHA.

The cost of the house is (as previously described) indirectly determined by the FmHA and it is not so much the upper limit that is restrictive as it is the lower limit. The agency believes in the concept of "the great leap forward". That is, totally disregarding the overall type and condition of the previous housing the family was in, the FmHA requires participants to build a totally and completely finished house. Whereas independent self helpers have the potential, and often use it, of building just the basic hub of their home at a low first cost, and planning for expansion later on as money is gathered or of generating first cost savings in the interior by, for example, not installing the permanent kitchen cabinets right away, the FmHA participant does not have that potential. Their home has to be complete down to the finished floor coverings and bathroom cabinets. Building that way instead of incrementally, or step by step, has to have high minimum first cost! The
actual amount will vary depending on the amount of self help labor and the
amount of and quality of materials, but has been in New England very near
the maximum the agency will lend a family. It is this inability on the
agency's part to differentiate between "life support" standards and
"quality of life" standards that causes this situation.

Some mutual help projects have used pre-fab kits from major indus-
trialized manufacturers such as Boise Cascade's Kingsberry Homes. The
homes are full-sized structures, not cores. Typical pre-fabs try to cut
labor time. Unskilled labor is all that the participants have to offer!
There are, however, presumably less administrative costs involved with a
pre-fabricated mutual help building program. Most house kits are not
competitive price wise, quality wise or autonomy wise with a good dweller
produced home. There seems to be potential for a pre-fab core home, but
they haven't been used in the mutual help program.

In a sense, "pre-fab cores" are used by independent owner builders.
Four families in this survey purchased small cabins and moved into them.
They improved and added onto the cabins, eventually consuming them into
a full-sized house. The cabins acted as a core, the same as a pre-fab
unit might do, and as such were very valuable to the families.

Incremental Design

Building incrementally means that all the rooms which are built
should be of sound construction, with design implications and structural
systems sympathetic to easy additions. It is not necessary, however,
that all the rooms be provided for in the initial construction phase.
Later on, the space and equipment can be brought up to any desired level
of amenity.

The skills to do just that have already been acquired in the initial
phase. If experience means anything in this field, the quality of design and construction will continue to rise as the house grows. In fact, during the interview phase of this study, there were instances of families being almost embarrassed by the quality of the details (not of the structural integrity) of their earlier design and construction work, though never to the extent of overriding their great pride in their accomplishments. The quality was substantially higher in the later work of families with no prior construction experience.

Incremental construction phasing is where one can really make quality of life decisions. For example, a family can decide whether they can live without a dining room, eating on a folding card table in the living room for a year, and use the money otherwise spent on the added mortgage interest to financing in that dining room on some other necessity or amenity, or whether it is just not worth the intrusion on their quality of life. By building only a part of the house the first cost savings are enormous. 25 to 50% first cost savings means almost three times that in the long run, due to interest charges. There are even savings to be made in not completely finishing, at the first phase of construction, certain parts of the original core itself. In quite a few examples, kitchen cabinets were put off and shelves used for a while until the money became freer and the cabinets inched their way to the top of the priority list.

Some self help families had difficulty in dealing with the large houses they planned to build. The project was just too grand (turning out to be "much larger in reality than it looked on graph paper"), requiring too much money, time and skill for the inexperienced. The problem here was lack of design expertise that would have enabled them
to design a structure that could be built in a number of discrete phases, so that at almost any one point in time there was a space that was essentially livable and usable.

There is a certain long term economic efficiency in self help housing. A family can save a substantial amount of money over the life of the house; using the acquired construction skills for a high quality maintenance of the property at no cash outlay for labor. Some families can actually gain money because of participating in the process of building a house by taking odd jobs -- moonlighting in the construction field.

Evolving Design

Independent self help families redesigned their plans for their homes or additions after they have moved into the basic house, and some go so far as to change things like window placement in the house itself after living in it for a while and understanding more fully their needs in that context. For those without considerable design expertise, living in a partially completed house is an excellent way to more accurately understand particular housing needs and closely match them to physical form.

Changes are not allowed in the FmHA houses and after they are complete, few changes were noted among the houses surveyed. If it is true that there are few changes in the agency houses over time, it would seem to be related to the inability of the families to control and therefore fully understand the entire construction process, having had experience -- in the New England groups -- with just finish and interior work.

One FmHA family, for example, exhibited apprehension, or lack of confidence, about opening a hole in a wall after the house was complete to add a window they wanted. Lack of experience in the framing process,
i.e. lack of a real understanding of how the wall is made up -- or lack of experience in the management of a construction project could be at the root of this apprehension.

As explained in the earlier chapters, many independent self help designs were quite material-dependent; in cases where pre-purchased material determined design, and in cases where thoughtful design and choice of materials saved expenses. A good design can save both first cost and long term costs. There is potential for good design in independent self help and it is sometimes achieved. There is potential for good design in some respects in the agency program also. It is not being achieved. The homes they are building now are indistinguishable from the standard tract house of a speculative developer.

**Context Dependent Design**

In the FmHA program -- due to this fear of, or lack of administrative ability to deal with, something other than what was previously done -- the houses are the same at every location. There is no consideration of climate, siting, user cultural needs, etc. The programs are turning out housing "projects". FmHA bulletin #4350 chided field staff on the grounds that there is too much variation from county to county in the size and design of housing being financed, yet there are certainly regional differences in culture and climate.

There are even differences in micro-climate, an example being one house sited behind a wind break of trees and another not (thereby affecting heat loss, thermal comfort and fuel bills). These factors should affect designs, yet do not play a part in agency decisions. To have a central government making such detailed personal decisions has surely caused a mismatch of priorities. Again, with an educated network,
solutions to these design problems are theoretically possible.

"Custom" House

   How to understand dweller needs and translate these needs into physical space is a design education issue that neither method really deals with effectively. Design expertise is perhaps the weakest link in the network chain because, though dwellers have control, they have no tools to do anything with that power to make their environment more responsive.

   What really points out the lack of dweller control of decision making in the FmHA program is that one can actually purchase an "equivalent" home out on the market from a speculative builder. The federal government has miraculously developed a system where a custom built home doesn't satisfy the needs of a family any better than the speculative house down the road! This situation exists less frequently among independent owner builders though of course poor planning and design -- lack of understanding of participant needs -- is as much an option in the independent method as good planning is. Assistance without control would be gratefully accepted by most owner builders contacted in this survey.

CONSTRUCTION

Group Cohesiveness

   Insistence on the principle of group building, particularly in a group that has no previous internal social ties, can jeopardize a program. One FmHA mutual help group in this study was racked with dissension so severe that a series of lawsuits were eventually instituted between some of the participants and the sponsoring technical assistance organization.

   In general, some of the problems should have been expected to occur
because there is, in fact, no real attempt on the part of the FmHA or the technical assistance organization to develop a criteria for determining if a family was psychologically and socially prepared to spend almost all of their free time for from six to twelve months with nine other families they had probably never even seen before: families with a variety of outlooks, attitudes, values, and goals in life; families that will be next door neighbors for potentially years to come. If a family declares that they will in fact work in a group, the only criteria used for selection is income.

Many hours were spent working out these problems of group cohesiveness and morale; time that the independent self helper obviously doesn't have to spend. Of course, there are tremendous potential advantages if the group should just happen to work well together. Work would get done rapidly and enjoyably, and the participants gain nine new close friends as neighbors that they can depend on for help during at least their tenure in the house. To expect this to happen by chance grouping, however, is unrealistic — even irresponsible.

Working cooperatively as a group is not a bad idea in principle. Forcing a group together with no attempt to see if they will really fit is a lousy idea.

Construction Supervisor

This is, or can be, an important advantage of the FmHA program, and the reasons why are obvious. To have a teacher on-site part of the time makes things go so much smoother than they might otherwise. However, as the supervisor is used right now in some of the technical assistance organizations, he has too many responsibilities to be working up to potential. In none of the cases studied were the groups given pre-construction
education worth much at all. In a situation where up to ten families who don't know each other are supposed to be cooperating nights, weekends, holidays and vacations, the supervisor must spend much of his time as a social worker. These odd working hours make it difficult to keep anyone on the job for any extended period of time. Besides working whenever the group has free time, the supervisor has to be responsible to be around when the subcontractors work during the day to answer their questions, quality check the work and to check in supplies. On top of all this, the pay is nowhere near commensurate with what a foreman of a job of ten houses would be drawing. Some of these problems can be solved, however, and the general idea itself is good.

In the independent network, it is this lack of a readily available informed source that slows the pace of the work and increases frustrations.

Completion

There is no denying that building a home is a very difficult job, both mentally and physically; "twice as difficult" as they thought it would be, according to many independent self helpers. Often, the drain on motivational energy in putting up the basic part of the house is significant.

What has occurred is that some owner builders have experienced difficulty in actually "finishing" the homes. Normally the problem is greater with the interior finish work than with framing and weather sealing the additions. The problem is exacerbated by the fact that the family is frequently living right in the construction areas for the finish work. In order to do work, furniture has to be moved, the house disrupted, etc. Once the house is closed in a certain motivating urgency is removed. The situation develops in which environmental conditions which are
acceptable for a temporary period of time start to be accepted for longer and longer periods of time. It occurs because people seem to be able to accept the situations they created for much longer than they would accept a situation imposed upon them from someone else. This problem cannot occur in the FmHA program.

Solving this problem would require a greater understanding on the part of the self help families of exactly the amount of work they are undertaking. There is a point, in other words, where a tradeoff might have to be made between time and money -- when a phase is just too big for the family to handle and yet the product is too necessary to cut down or put off any further. A family needs to make an educated decision as to what part of construction might take so long as to cause them undue hardship or possible loss of morale, etc. The hardship has to be weighed in the present system, against how much a subcontractor might cost to do the work. It is this kind of decision that an inexperienced family would have particular trouble handling.

Building Inspectors

A building inspector's attitude is often representative of the attitude of the town he works for, according to the self helpers surveyed. This is particularly true with respect to FmHA project inspections, primarily because the impact of an entire project on a town is greater than that of a single house. The agency makes a big point in its literature to the sponsoring groups that developing good relations with the town is extremely important.

The advantage to the FmHA in its relations with the building inspectors is that there are a group of houses that are of the same construction method and generally at the same level of workmanship. They are being
supervised by a supposedly competent construction supervisor and inspected by the FmHA's own inspectors. The group is backed by a probably active and vocal local organization. The independent self helpers, on the other hand, can find themselves in a much more difficult situation. They might be making mistakes that the building inspector will summarily reject rather than advising the family on how to correct them. The house is singular and the inspector doesn't know, as he does with the speculative builder whose houses he has looked at for years, what the quality of the work is without a complete and thorough inspection. In one group studied, the town's building inspector, after realizing how many other inspectors essentially were going through the house ahead of him, only found it necessary to give the group's houses "windshield" inspection. That is, he sat in his car and looked through the windshield before writing up the approving report!

Appropriate Building Systems

In most networks, the systems used are basically traditional with a smattering of new systems or unconventional systems that a "pioneer" might have been successful with. Even this little bit of informal growth is not evident in the FmHA program houses. Since individuals in the groups are forced to conform to the systems and materials used by the rest of the group, and the designs -- at least in the New England region -- are very conventional, forms of construction that might be more appropriate for amateurs or that are quicker and cheaper are rarely tried or developed. Systems used in the program are systems that are already proven to work for the professional builder -- exactly the wrong test. That's like boiling eggs to see if they taste good fried! A professional crew does not have the same criteria as a self help group.
Quality

Both methods produce homes that are of high construction quality. This is assuredly so in the FmHA, due to the plethora of inspectors. In the independent method it is often so because families will tend to over-build when in doubt.

The FmHA controlled the process of housing via its internal regulations, in part because they felt that it would be too complex to administer a program which would give each individual homeowner the freedom to make certain basic decisions about the timing, financing and design of their homes. Their response to this problem -- offering the potential owner builder a choice of perhaps three designs, all with the same financing mechanisms, construction methods, timing, and materials -- enables them to manage all the individual families as one group, not as unique cases. Observations on the success of the independent self help families indicate that that kind of control, so efficiently administered by the FmHA regulations, is unnecessary for the development of a multi-valued and cost effective housing program for a much wider range of families than has previously been acknowledged by the agency.

Simply stated, the FmHA program offers substantial financial assistance. The independent process offers it's participants more knowledge, personal qualities and a potential closer match of dwelling to dweller needs. Both methods save money over conventional programs. In the independent process, the participants have more opportunities to effect cost savings.

The FmHA criteria is economic productivity measured in terms of market value versus expenses. The independent criteria is the value of the house to the dweller; in economic, human and social terms. This means that questions asked in an evaluation include: is the family living in a
safer environment? Are they spending less of a percentage of their income on housing? Have they developed skills during the process that will help them throughout their life, i.e. can they earn money with their skills directly, through the construction industry or any other field that requires managerial capabilities, or indirectly, by saving cash outlay on housing maintenance and renovation? Has the process developed self esteem that causes professional (career) upward mobility, and/or psychological and social "character" growth? Do these skills, human and social benefits enable a family to be less dependent on the welfare state?

Independent self help families, according to the findings of this study, are as much in need of an easily accessible service resource as they are of a capital resource. In other words, if one had very little money but some knowledge, eventually a home might get built. But there is a very large group of people who might have potential access to some capital (though not enough to purchase a house) but who, without knowledge, could never get a home built. So whereas the flow of money is surely what enables a housing project to function, this process is actually based on human knowledge and need, not on capital.

Inescapably, a conclusion of this study is that in both the long and short run, a self help housing program operating at its potential for dweller autonomy is the most cost effective housing program available for both the user and society.
CHAPTER 4

Proposals for a revised framework of supportive intervention in the self help housing process
CHAPTER 4

With a basic understanding of these present systems of self help housing in mind, this chapter attempts to delineate areas and methods of support of the informal system that maintain the inherent freedom of the traditional process of a family's attempts to acquire the confidence, skill and knowledge, and financial resources to produce their own home. Implicit in this is the development of a philosophical and practical framework for government, or any organizational intervention for that matter, in the housing process.

It describes, essentially, a strong locally based housing process support system, controlled by those it serves, aided by the government of the people, allowing families to accept a role in the process they feel most comfortable with and utilizing their talents to fill the gaps left by both the public and private market sectors.

The informal independent owner builder system as it has naturally evolved is without any doubt working exceptionally well for many people who otherwise could not have considered owning a safe, decent home to live in. Basically, if an agency wants to achieve the same goal as this process helps a family achieve, it seems that it ought to first consider the present system, determine who it is not working for and why, and develop ways for the system to include these people. This process of acquiring a home has been in existence, has been "tested" for hundreds of years around the world, and has proven capable of adjusting to changing times. It seems like a pretty safe place to start -- or at least support -- as one of the options leading to decent housing.

One of the independent processes' basic problems, as determined by
this study, is that while information is easily acquired from other owner builders, it is often of uneven factual quality. Furthermore, the process requires a degree of individual initiative that certain families cannot be expected to possess. Therefore, government intervention should revolve around opening access to that knowledge and formalizing or stabilizing its quality. Another problem in this process is that time replaces money as a resource, in some cases to a harmful extent in that a family lives too long in uncomfortable surroundings because they don't have the capital to purchase materials or don't have the time for the necessary labor.

In this area, then, government intervention should be directed towards helping the building approach a higher "quality of life" standard sooner, through financial aids and labor assistance. Throughout, the goal of any agency should be to maintain the flexibility of the system; to accept that there are many different ways to get to the same point; to support the continuance of the system as an open, self-generating system.

The FmHA remains vital in this scenario. As the existing efficiently run agency dealing with low and moderate income rural housing, it is the logical choice to be the responsible agency for the entire revised program.

The suggestions are divided into the three primary areas used throughout the study: 1. support; 2. technical assistance and information (design and construction); and 3. financing mechanisms.

This adjusted self help housing program basically uses many of the same actors, in revised and/or expanded roles, described in chapters one and two.

Support is provided basically by former self help families. Technical assistance/information is provided from a variety of sources; former owner builders and other network sources, FmHA contracted coordinators (much like the technical assistance organizations and including particularly
important specialists such as architectural designers), the U.S. Department of Agriculture extension service, and the local building inspectors. Financing continues to be the province of an expanded FmHA credit program, with increased support from local banks willing to loan funds in the new system-generated, "lowered risk" self help situations.

The suggestions are outlined in theory and in detail — in some cases, very fine-grained detail.

NETWORK SUPPORT

Publicity

The first step for any intervention into the self help building process would be to develop, through publicity, people's awareness that a program does in fact exist, and that support is available for families with no previous experience who want or need to build their own home to provide themselves with decent housing. The primary goal of a publicity campaign is to enable people to understand that there is a housing program specifically for them, even if they never thought of building before. Getting the program details across is the secondary goal of the campaign. A balance of scattershot publicity and advertising directed specifically for the potential user group is necessary.

advertising placement

Effective use of local newspapers can be achieved through press coverage and paid advertising. Advertising shouldn't be limited to, or even necessarily placed in, the real estate pages. What the program is attempting to do is reach people who, to a great extent, had no hope of being able to purchase their own home, and so probably don't bother reading the real estate pages in the first place. Advertising should be
directed to the income group, and ads should therefore be placed on the pages containing, for example, used car ads, tag or rummage sales, etc.

Visual material (posters and pamphlets) in supermarkets, hardware stores, unemployment offices, community action group offices, factory time clock corridors and similar locations where the particular audience might be would be useful.

The publicity program is helped by the fact that small town media are usually very accessible. Newspapers and radio stations are quite happy to have local news coming to them. It's more expensive for them to have to go out and turn up the news themselves. Small town papers and stations are invariably low budget operations.

other resources

It is also important to develop awareness of the program among local community action staffs, housing inspectors, etc., so that they can be a referral source. There is very often too little communication between bureaucracies that could complement each other's work.

food cooperatives

One particular place where a very high response to publicity might be expected is from the local food cooperative. Food co-ops are a very rapidly growing phenomenon. They are particularly valuable places to publicize the program because -- besides income level -- an important determinant in whether a family should build their own home is their attitude.

A food co-op is people helping themselves. By directing publicity material to the members of a food co-op, it is being seen by a group of people who have essentially been "pre-screened" as to their belief in the value of cooperation, and in their initiative in helping themselves.
Obviously it is much less of a jump, requires much less daring, to go from supermarket food shopping to food co-op shopping, than to go from renting an apartment to building a home on your own initiative and with much of your own labor, but the co-ops are a step in the right direction -- more in tune with the self help process than most other organizations in that they work by the people, not for the people. As noted earlier, some co-ops are becoming involved in self help building material supply.

Confidence

What is necessary to make that jump from control over the food purchasing decisions to building a home is, to a great extent, confidence. Once someone has been made aware of the availability of the programs, they have to be given the information that will allow them to convince themselves that they are in fact potential self help builders.

Because "learning to build, like learning to drive, generates fear at first", families have to be shown two things, it seems, to help develop that confidence. First: that other families similar in background, skills, and income have produced their own homes, and second: that the components of the package necessary to build a house -- that is technical assistance, financial aid and administrative/managerial assistance -- are readily available.

The support system has to be highly visible for many people to be able to make the step of considering themselves to be potential owner builders. The advantages of a highly visible support system are not only in helping to build confidence among potential owner builders, but in helping to build confidence in banks to perhaps loan money to an owner builder with knowledge that there is some external assistance to shield that project from failure.
The exact range of support available during the building process must be wide and varied and the self help family must have the option of taking as much or as little help as they need.

Organization

This locally based, housing process support system must act as a facilitator of the already existing network. It should attempt to provide stability, without formalizing an informal system and, furthermore, through its strength of numbers, can act as an advocate of methods and laws that would aid the self help family. None of the following suggestions require large scale funding.

The work of previous self helpers can be expressed through methods as simple as photo exhibits of local self help houses placed in an office rented by the "coordinating organization" as the local building information center. These will show new families the range of options in design and construction to match their personal needs. This is a great value which self help housing has in relation to purchasing standard speculation housing.

Material Purchasing Cooperative

It frequently would be valuable to organize temporary or permanent material buying co-ops. While it is true that "economy of scale depends on the scale of the economy", there are some items that can be efficiently mass purchased by self help builders. One such item is insulation. One example of an item that is not might be something like salvaged kitchen sinks. Probably no dealer has enough of the proper size and quality to allow a mass purchase at any discount.
Tool and Land Purchase Cooperatives

Help in organizing temporary or permanent tool cooperatives would be worthwhile in many locales. A tool cooperative could purchase tools needed during only one stage of a construction job and therefore too inefficient for individual families to purchase. If there is enough demand to keep cost below that of local tool renting companies items such as post hole diggers, scaffolding jacks, staging, temporary electric services, etc. could be cooperatively purchased.

It is also feasible to consider the purchase of land by a group of families for the purpose of subdivision. The introduction of families with similar needs to one another can be handled through this network center.

Newsletter

What might be valuable if the area is large enough would be a newsletter to sell material which a family has overordered or considers surplus, or material that is being upgraded in an older self help house, but that might be valuable for a new self help family to purchase. What tends to happen with self help houses is that, after a while, they reach a relatively stable state and a long period of slow adaptation and upgrading occurs, during which time material that might be valuable for beginning structures is generated.

Library

Besides just using the experience of other self help families, it is important to have a source; a written base of knowledge that can be trusted to be factually accurate. Though the construction process is so very context related - affected by the site, the microclimate, and the availability of material or skilled labor in the particular locale - there
is a basic set of facts that should be accessible to self help families. The recent glut of construction manual books on the market are of varying quality, of course. Some books are so simplified that they have only three or four pages of actually valuable, accurate information in them. Others have a couple of hundred, but are written in a format somewhat difficult for all families to grasp.

Each center should have a library of books that range from cartoon-type supportive introduction books to technical tomes on the construction process. Over time, the library can become fully annotated by its users, who will have read and reviewed the material and attempted to use it in the construction of their own homes. An area's coordinating organization should also send annotated book lists to local public libraries and help them organize a purchasing consortium so that the full range of books will be available in every region.

Librarians

The center library can be staffed by a revolving group of former owner builders, people who would be able to explain how to find the proper resource and who would possibly be able to answer some technical questions themselves. Another approach has the library located in the building inspector's office, open when he has office hours. A building inspector certainly could be expected to have the technical knowledge. The cost of staffing the library then would be practically nil, perhaps amounting to a few hours per week added to the inspector's job to cover his time away from paperwork, etc. More on the inspector's role later.

Advocacy

The center can be organized as a space and process through which a group of self help families in an area can communicate, or meet, to advocate
reforms helpful to the self help process.

Avenues of concern would most certainly touch upon the building and housing codes. It should be a basic right that people be at least allowed to do for themselves all that they are able to. Codes requiring licensing on top of strict inspection procedures restrict this right.

**Tradesmen's Helpers**

It would be valuable, for example, to allow owner builders to act as helpers to licensed tradesmen. Most housing mechanical systems trades don't require very many manual skills. The valuable skills are mostly knowledge of why to put a pipe or a wire somewhere, not how to. A family is charged a substantial amount for a helper who does such things as handing pipe to the plumber or drilling holes in studs for the electrician. The owner builder is capable of handling these jobs and shouldn't be required by law to pay someone else to do them. Furthermore, working with a master tradesman could be a valuable learning experience. An observant owner builder could make the network more skilled. Of course, with the skills spread around, a dweller might then be able to hire lower-priced, skilled but non-licensed moonlighters. That's either good or bad, depending on who you talk to. As long as inspection procedures are maintained, there could be no foreseeable safety problems.

Furthermore, it is difficult to see where any loss of jobs to the industry would occur. In so many cases, if the self help family has to pay typical tradesmen's wages for the entire job, the house couldn't have been built anyway. By using skilled people only when they are actually needed by each self help family, houses that otherwise wouldn't have gotten built are built. And, of course, skills learned in construction are valuable in maintenance.
Survival Codes

Similar to the right to help yourself if you are able to would seem to be the right to live in an environment that is safe and healthy and not harmful to the dweller or anyone else who might enter or purchase the dwelling, but is perhaps inconvenient, even uncomfortable, to the family, if they so choose. Building codes today can be separated into regulations concerning health and safety -- "survival codes" -- and those regulations which essentially are dictating a standard of living -- "comfort codes". There is a tendency towards constantly increasing intervention in the name of "higher standards of living." It is wrong for families to be denied minimally adequate shelter until they are capable of purchasing or building complete, fully standard houses meeting middle class comfort values. We know that economics will not allow so many families to make this "great leap forward". It seems morally corrupt to insist that environmental improvements be achieved in no other fashion. What is particularly ironic about typical code enforcement is that one can often see code officials allowing people to live in an existing house that doesn't meet half the standards required for a new house going up in perhaps the very next lot. One possible compromise might be to inspect the apartment the family is moving out of and only to require the new home to be, at first, not less than merely equal to it. The government has attempted, unsuccessfully, to provide decent housing for its citizens. It should, therefore, relinquish its attempts to stifle its citizen's unique individual initiative.

Other long range advocacy goals include introducing self help housing education programs into school curriculums and sponsoring building systems research aimed at the self help method's unique requirements.
One of the primary goals of any supportive intervention into the self help process would be to assure the quality of the technical assistance offered. A good library as a base helps, as does keeping a rapid rate of transfer of knowledge from one generation of self helpers to the next.

**Owner Builder Index**

Developing a stable way of keeping contact with previous self help families in an area would be very valuable. A simple device like a card index, listing the family's name and address and when and what method they used to build their home, would suffice. What method was used in constructing the house is particularly important information because in that way, the "experts" in certain methods, procedures or particular skills can easily be identified. Keeping this list accurate and using this resource when necessary is a simple, foolproof way of making sure that the knowledge and experience is not lost or buried. No longer would the owner builder have to depend on persistence and chance for information.

With a freeflowing transfer of knowledge, that information can become cumulatively valuable. No one in the area will have to reinvent the wheel, and the present self helpers will always know more about a particular problem than the pioneers (which is how it should be). If the network is large enough, no one previous self helper will be inordinately burdened with questions.

**Supplier Index**

The same type of card system, annotated, could be used for local material suppliers. Local resources tend to avoid middlemen and transportation costs and also, not surprisingly, tend to be well suited to its
climatological environment. For example, adobe provides a long thermal
time lag, keeping out the heat during the hot days of the southwest
desert and finally letting it in during the cold nights. New England wood
is an excellent insulator against the winter cold, etc.

An index like this might tend to include the names of local loggers
and sawmill operators (if timber is a local resource). These kinds of
small operations that don't buy ad space in the yellow pages are diffi-
cult to find, but can offer quality products at a low price. Similarly,
a range of options is offered to the new self help family if they see it
in the file; retail lumber yards (annotated for insulation and hardware,
perhaps), local sawmills, demolition/salvage companies (for used windows
and plumbing fixtures), certain wholesale plumbing suppliers, granite
quarries, septic tank manufacturers, etc. The new family learns, then,
that you don't necessarily get the least expensive or best house by
walking into a retail lumber yard and saying "deliver material for one
house, please".

A previous owner builder could take this listing and help a new
family with budget management by talking about priorities. For example,
certain materials are better suited to a labor intensive self help con-
struction project than they might be to a professional, capital intensive
building system. The goal is to choose materials on this basis, not on the
basis of what the developer's house down the street was built of.

Extension Agent

Another method of technical assistance would be the institution of a
program of regional extension agents in the construction field, patterned
after the U.S. Department of Agriculture's successful models of county
foresters, agricultural agents and home extension agents. If the govern-
ment found it wise to hire someone to teach its citizens how to properly
can a peach, it is certainly feasible that they might hire someone to
teach their citizens how to build a decent shelter for themselves!

Such an agency would be particularly valuable in aiding a self help family with site planning and design services. Design expertise was unacceptably low in both previous systems. Design, of course, will affect first cost (choice of materials, layout), maintenance and operating costs (response to microclimate, insulation and insolation), and the actual use value itself of a dwelling. Specifically, knowledge about how to design a house that keeps its freedom to change over time as needs change, and how to design a structural system that can be built incrementally, in discrete phases, is essential. Such a professional would be attempting to help make the shift from the conventional goal of lowest first cost of finished structure to one of lowest possible incremental costs and high terminal value. It's a design solution to a financial problem -- evolutionary architecture on a formal basis. (It is in this particular area -- incremental design and structural systems -- where great advances seem likely to be made through further architectural research.)

Coupled with information received from previous owner builders, a new self help family might then have a range of options that enable them to develop the individually tailored aspects of a home.

Building Inspector

If the local building inspectors, with all their knowledge of construction and local materials, could be used as a resource instead of acting as an impediment to the builder, a valuable role could be devised for them.

Starting with their possible role as part time librarian and resource,
a building inspector could become a part time, on-site construction supervisor (assistor would be a word that more closely identifies the desired attitude) -- a person one could go to with an immediate question about construction details. In some small towns the inspector, because of his personality and attitude, informally takes on this role already. Methods of formalizing this approach, this attitude, seem developable.

Part time construction supervisors might also be hired from the pool of previous self help participants. It is conceivable that in many areas, over time, the quality and depth of the network becomes so great that it essentially handles the jobs of the extension agent and the supervisor. It is important to "depend less on the supply of dedicated field workers" and more on the initiative of the people themselves.

**Finishing Cooperative**

With the economics of the construction industry as it is today, the major difference between owner built and professionally built houses is not in quality but more often in the amount of time needed to complete the job.

Because of the enormous amount of time and energy that it takes a family to just close in a house -- to make it weather sealed and habitable -- the drive to complete the house after having moved in is sometimes given a lower priority than other items in their life; an attempt to get back onto a normal living schedule, for example. One way to shorten the total construction time might be to organize finishing cooperatives.

Groups of self help families who are around the same stage of construction -- though not necessarily -- work on each others' houses as a group for a day or two at a time. The amount of work that can be com-
completed by a group of four to six people working on a particular house for a few days is astounding to the participants, particularly when that house might have been receiving only two or three hours of attention per week in the recent past. By that time, this procedure would be an enormous psychological boost for the family. The labor is paid off by working on the other people's houses for the same amount of time. The principle of labor exchange, of course, can be used at any stage of construction.

Other avenues of financial support for this "group burst" method of shortening construction time might be to have a crew of owner builders paid wages out of job training funds. It could certainly be a lower overhead job training program than one in which a shop had to be rented and equipped. Another method would be for the homebuilder to finance short term assistance with a low interest loan. Still another method is for the crew to be paid on the WPA model.

**FINANCIAL**

Financial intervention should be in the form of offering a range of options of subsidized and market rate supports. At present, the FmHA forces families into long term mortgages because they don't allow any kind of incremental construction.

**Unemployment Insurance**

A simple intervention might be to allow people to build their own homes without penalty while they are on unemployment insurance in areas with no present real job opportunities -- for example, long term factory or mill layoff areas. It takes an enormous amount of time and energy to coordinate the details of house construction, and even carpentry itself
is handled most efficiently in larger chunks of time -- so sawhorse setups
don't have to be dismantled at the end of every day, etc. After comple-
tion this experience might look good to a perspective employer Excluding
for the moment construction field skills, the managerial ability proven
should help the owner builders' standing in the job market.

"Jury Duty"

Another model might be based on the jury duty model. Our country
finds it reasonable to pay a token amount of money to citizens they ask
to help make our government operate effectively. In the same sense,
since the government has shown itself unable to provide decent housing
for its citizenry by previous methods, paying people to help them operate
effectively in the field of housing doesn't seem so out of line. Owner
builders could get paid "jury duty" money for a period of time that would
enable them to build a decent home.

Paid Job Leave

Similarly, people who cannot afford decent housing tend to have jobs
that are on the unskilled spectrum of the work force. They are people
who might be easily replaced on the work force for a period of time. It
seems feasible to allow those people a leave of absence from their job
(with a guaranteed return), pay them weekly at the unemployment insurance
rates and replace them temporarily at their job with someone who was col-
lecting unemployment. The cost to the government is minimal with this
method.

Job Training

Within the realm of job training type support, it seems possible to
allow a family to receive job training funds for working on their own
house under supervision. Anyone who gets through the process of building a house has certainly been through a valuable and particularly inexpensive job training program.

**Loans**

The FmHA should offer a revolving construction loan fund and continue their low interest mortgage program. The construction loan fund should also be utilized for subsidized home improvement loans.

**Taxes**

Subsidies similar to those offered to large developers and industry should be offered to low income self help families. Another assessment subsidy might be to tax for a period of the first ten years (for example), only on the cash value of the materials and subcontractors' costs that went into the house. In other words, taxes should not be assessed on the market value of the house, as that includes one's own personal labor. This could be a crucial subsidy in the early years when cash flow is being used to purchase material incrementally.

Incremental construction itself has tax breaks built into it. As a family is assessed only for what is already constructed and complete, taxes start low and gradually rise as work gets done.

None of these financial mechanisms are really very costly to the government.
1. Hightower, Jim Farmers Home Administration and Farm Labor Housing: Missing the Mark, Background Paper #10 of the Rural Housing Alliance, June 9 1969, for the National Rural Housing Conference

2. Margolis, Richard J Mobile Homes and the Rural Poor - An Alternative Non-Solution, for the Rural Housing Alliance, February 1973


4. Rural Housing Alliance Cooperative Housing Through the FmHA, Informational Paper #3, September 1970

5. Rural Housing Alliance What is the Rural Housing Alliance?, Dupont Circle Building, 1346 Connecticut Ave. N.W., Washington D.C. 20036


7. Housing Assistance Council FmHA Self Help Technical Assistance Grants Section 523 - Rural Housing Programs Pamphlet #6, April 1972

8. Housing Assistance Council FmHA Home Repair Loans Section 504 - Rural Housing Programs Pamphlet #2, Washington D.C., April 1972

9. Rural Housing Alliance Low Income Housing Programs for Rural America, 3rd Edition, August 1971

10. Moore, E.J. and Metcalf, Charles E. Rural Housing, unpublished manuscript in Rotch Library, August 1965


APPENDIX 1

Chronological narrative of one family's independent self help experiences
BACKGROUND

Both Nancy and David grew up in a larger industrial mill town about forty miles away from their present home. Nancy's family ran a small variety store, and David's father worked in the paper mills. David had started attending a local state land grant college, but obtained neither a technical nor an academic degree. Nancy graduated high school.

She worked as a waitress and David had worked at a variety of jobs ranging from laborer to mill hand to, when they started to build their home, a job as a bus driver for a senior citizens transportation program -- a job he received through the locally administered, federally funded, Comprehensive Employment Training Act (CETA) program. They had had no carpentry experience of any consequence prior to building their home. Their total take home pay, less job related expenses such as transportation and uniforms, was about $130 per week. Both jobs were for less than 40 hours per week, as is standard in their fields.

They wanted a home of their own. They had been renting an apartment in a small town next to the state college about 20 miles north of their home town. Buying a house in either of the two towns they were familiar with would have been too expensive. Friends of theirs (a co-worker of Nancy's) had built their own home in a more rural town to the north, and Nancy and David visited them often. After about five months deliberation they decided that they too could build a house themselves. They received encouragement from their friends and offers of support. Land prices were much lower in the more rural areas than in the towns, so that is where they looked for property.
LOCATING PROPERTY

At first they went to real estate agents for help in finding some suitable inexpensive land upon which to build. Prices were high compared to what their friends said they would be. They looked at private ads in local papers, and spent much time just driving around the roads in the hills north of town. As a child David had spent some time in that general area at his uncle's summer cabin, so he felt very comfortable there.

After searching for a while they decided it would be best if they could find a piece of property that already had some kind of shelter on it; something not much more than, for example, an old summer cabin. In that way, they could live on the land for a while (albeit with less creature comfort than they had in their apartment), paying it off, while not having to pay apartment rent at the same time. They found a number of empty cabins, questioned neighbors and town clerks as to who owned them, and made inquiries as to whether they were for sale and what the cost would be. After three months of an unbroken series of disappointments and with spirits at a low ebb, they found a 16 by 22 foot partially insulated hunting camp that had electricity, a shallow well and three acres of land. Its price was $4,500, well below the kinds of prices the real estate agents were talking about and in line with their friends estimates.

FINANCING

Nancy and David went to five local banks looking for a mortgage on the property. Not a single bank would mortgage an unimproved property in that rural area even though the couple's credit rating was unblemished and Nancy had worked at the same job for about three years. Finally, one
bank was willing to loan $1,500 to them at personal loan interest rates of 13 1/2% (mortgages were going for around 8%), but with the cabin and property as collateral.

As an indication of how good their personal credit rating was, they were able to get a $1,000 loan for a "vacation" from another bank and, in the same week, received another $1,000 personal loan from yet another bank for "bill consolidation", etc. So altogether, they were able to borrow $3,500, payable within two years, from three separate banks, with no single bank knowing about any of the other loans. They had personal savings of around $1,700, of which about $1,100 went to complete the property purchase. The carrying charge for the cabin was therefore about $155 per month for the first two years. Taxes and insurance added almost $20 per month to the cost. The sale was closed the day before Thanksgiving.

They were unable to find government subsidies applicable to their situation. The property in its present state didn't meet FHA standards, and neither Nancy nor David qualified for VA loans. The receptionist for the Farmers Home Administration county agent told them that there was a six month waiting list for the loans and furthermore, none were really applicable for purchase of "substandard" housing.

The couple immediately moved out of their apartment, for which they had been paying a base rent of $140 exclusive of utilities, and into the cabin. There was some question as to whether they were legally allowed to permanently inhabit the cabin, listed in the town tax rolls as a "camp" (meaning seasonal use). The town had yet to pass a comprehensive zoning ordinance, but when they did the next year, the cabin did not meet requirements for minimum square footage, nor did it have a septic tank system (it had an outhouse). The new zoning law had a pre-existing use clause in it, however, and by that second year the property was mysteriously
listed in the tax rolls as a permanent dwelling. No one bothered them that first year about their living in the cabin and they questioned no one about its legality, preferring to keep a low profile.

CONSTRUCTION EXPERTISE

The first winter was spent in the cabin without making any major improvements to it. It had a standard pitched roof with a dropped fiber-board ceiling at the eight foot level. They removed the ceiling, insulated the roof pitch, and constructed a small sleeping loft over part of the cabin. While not really much more difficult than putting up a large bookshelf, it was the first real carpentry they attempted. Headroom at the highest point of the loft was only about four feet. The cabin was cramped, and lacked certain amenities available in their old apartment, but was quite habitable, particularly since they knew it was only temporary.

Much of their time that winter was spent reading books on house construction and in talking to the three neighbors who had built their own homes about how they had done it. They also met other self help builders through their original friends (now relative neighbors), from Nancy's restaurant job and through their other new self help neighbors. It is accurate to state that during most of the time spent that winter with new friends, they discussed construction. Their interest became obvious to all of the new people they met in their town of 200 voters. For example, with a tiny library open only one day a week, when the library committee went on their annual book buying trip to Boston they purchased three books on house construction specifically for Nancy and David.

From these conversations with the previous self helpers came information about materials suppliers. Almost all the houses in the area were built of wood and in many of the homes of their friends the wood was pur-
chased directly from logger/sawmill operators rather than from retail lumber yards. There were over a dozen sawyers in the immediate area who cut from local forests and milled the lumber into rough cut dimensions as ordered by the customer. Most of their business actually went on contract to furniture and pallet manufacturers in the more industrial central part of the state. A varyingly strong percentage of their business came from custom cutting lumber for private houses.

Local retail yards, on the other hand, stocked kiln dried, planed lumber originally cut and processed in the north-western United States. The retail yards charged approximately twice as much as the local sawmills for standard 2" framing stock (which was actually only 1 1/2" thick at the retail yards), and very much more than that for any size lumber not ordinarily used in a standard western stud wall framing system. For example, sizes applicable for New England post and beam framing cost from three to five times as much at a retail yard because they are unusual special orders. Yet to a sawyer they are less work (less passes of the log through the sawmill), and therefore are cheaper to produce. The price is lowered accordingly.

So Nancy and David went around talking to local sawmill operators, getting an idea of price, of what the sawyers had already cut and air dried, and of what previous home builders had ordered from them and why. The sawyers themselves were a valuable information resource and the two they eventually chose to supply their lumber offered them easy payment terms extending over a period of a few months.

DESIGN

While talking to all these people who had built their own homes and
to the sawyers, Nancy and David began to design their home. They decided to build an addition onto the existing cabin because the cabin was structurally sound, had water and electric lines already extended to it and was built in the choicest site. They approached the design with four different criteria in mind: 1) space needs; 2) esthetics; 3) cost; and 4) construction system. The design process was the most difficult to successfully comprehend. They couldn't easily draw, represent what it was they were imagining, and they had difficulty setting priorities among the different criteria and even in formally understanding their needs.

Many of the self help builders in the area had used a construction system different than the standard western platform stud framing. Western framing requires a framing crew of three to five carpenters to operate efficiently. A system based on the earlier colonial post and beam timber framing was adapted in the local area. It could be built easily by only one person, except on the actual day of erection of the frame, when 10 to 15 people were needed for the day, after the weeks of preparation were completed. This method made the most efficient use of the manpower available to self help builders; unpaid assistance possible on an irregular basis, just the family the rest of the time.

In talking to their neighbors they also found that many people purchased some material for their homes from used building material supply yards — salvage yards. Windows, bricks, large timbers and bathroom fixtures were the most valuable items. From the conversations, they were able to develop a list of yards to visit in the general area.

CONSTRUCTION

Work on the foundation — a grid of concrete piers — started in late May. Concrete piers were used because they did not require outside
help of any kind (Nancy and David had read about the system themselves -- no one else in the area had built with it yet). The holes could be dug by hand, the concrete (since only a small amount was needed per pour) could be mixed by hand, and the formwork -- thick cardboard tubes -- could be purchased relatively inexpensively. It is a simple system to understand and use. There was no need for backhoes, bulldozers, rented formworks, redi-mix trucks and someone with real expertise. However, the foundation took almost a month of nights and weekends to complete. Material cost was about $70. A poured foundation of the size needed to support that addition would have cost around $1,300.

One week after its completion David asked for a one month leave of absence from his job. The foundation -- like everything else, as it turned out -- took much longer than expected and the couple felt anxious about completing before the cold weather.

An old friend from high school came up from their home town for two weeks during his vacation and helped out on the framing. Nancy's brother came up almost every weekend for the duration of the summer, and an uncle came by periodically (a 45 year old car salesman who showed up at 6:30 on Saturday mornings and proceeded to work straight through till sundown). With a certain anarchic regularity, some of the people they had been talking with about houses throughout the winter came by for a few hours at a time and picked up a hammer or came by in response to a panicky telephone call question about construction from David or Nancy. That summer, whenever friends and acquaintances came by they helped on the house because that is all that David and Nancy ever did in their free time. If you wanted to talk to them you pretty much had to get up on the ladder next to them, often ending up holding a beam steady for them or perhaps driving a nail.
When it came time to erect the already measured and cut timber frame, friends, neighbors, relatives and even one of the sawmill operators came by to help. The frame for the entire house was erected in less than a day, in the tradition of the old New England barn raisings.

David went back to his job after taking off an extra week and work on the house continued on weekends and nights. By the end of August, money had run out and the materials were used up. The house was framed and sheathed but interior studding, siding and partitions weren't up yet. Window openings were framed out but the glazing itself was only tacked temporarily in place. There was no money to purchase insulation. Roof boards were in place but a permanent waterproof roof membrane was not. A layer of tarpaper was quickly stapled up to keep water off the roof.

Materials were used up, progress was stopped and the weather was turning chilly. After a summer of very hard trying work, with help from countless friends, acquaintances and relatives, they hadn't even completed a structure that could be used for dry cold storage. A crew of three professionals could have been living in it by then, warm and cozy. The addition was two stories high with 400 square feet of space on the ground floor.

By December, enough money had been saved again to place on a more permanent roof (a day before the first snow), and to purchase and install some insulation for the roof. Thin clear plastic was purchased and used to wind seal all the loose window openings. That's the way it stayed all winter. It was used as a rain free unheated storage for firewood, etc. Nancy and David had spent around $2,000 on materials by that time.

That winter they again spent much of their time talking about construction details with previous owner-builders; i.e. how to hang windows and doors, what kind of vapor barrier to use on the insulation and where
to put it, how to wire the house and so on. Once again, they also consulted books taken from the local libraries. What was different from the last winter was that this year at least four families came to them for advice on construction details and on how to locate and finance the purchase of property.

Two were friends or acquaintances from work who were interested in building by themselves. The others were people who had helped Nancy and David as information resources during the previous winter and summer. Now they were asking how to build the particular kind of foundation that they had used. They were interested in using that foundation for additions or outbuildings they were planning for their properties during the next building season. Again the cabin was cramped, even more so because they had expected to be living in the addition by this time, and furthermore all the tools they had purchased were actually taking up a significant amount of room in the tiny cabin.

By spring more money had been saved and material was purchased -- Wood for interior studding, wood and sheetrock for interior partitions, insulation for the walls and the rest of the floor, and supplies with which to wire the addition for electricity. Work progressed on the house in a part-time fashion through the late spring and into summer.

In August David was laid off from his job and went on unemployment insurance. His spendable income decreased by about $25 per week. No more was bought as David looked for another job and money was saved to make the loan payments, which were to be completely paid off within three months. Nancy couldn't get any more hours added to her job, but David did pick up a few off-the-book odd jobs -- cutting firewood, building a porch, etc. -- which brought their income back close to what it had been when he was working. Enough money came in to enable them to pay off the "mortgage"
on the cabin and have a fine Thanksgiving dinner.

By November their cost of living had dropped so dramatically that they found it possible to live off the unemployment insurance and Nancy's part-time job, save money and use the free time very profitably to work on the house. They worked on getting the house tightened up, making windows operable, etc. all winter long. When April came, they broke down the wall between the old cabin and the new addition and began using the entire house.

In May David got a job coordinating a new senior citizen's transportation program in the large town near where they now lived. Nancy took a job in the day care center in the same town that summer, first as a volunteer and later as a paid staff member. Little work was done on the house that summer, as both were occupied with their new jobs. By now they were being asked questions frequently by prospective owner-builders who were directed to them by other self helpers, both of the sawmill operators, and by mutual friends.

Their taxes and insurance costs had about doubled due to the increase in value of the property and they were still paying off some bills for the insulation, some door hardware, etc. but their housing costs were down to about 1/3 to 1/2 of what they had been during the time they were renting or the first two years in the cabin. They had spent about $3,300 by then.

That winter, while still saving money for continued necessary improvements and desired comforts for the house, they had enough money for the first time in a number of years to visit dentists, purchase new eyeglasses, go to the movies once in a while, purchase a better used automobile, etc. In the spring they borrowed another $1,000 on a 10 1/2% home improvement loan to install a septic tank and that summer built a bathroom for about $300 in materials. This winter they are slowly tightening up the house.
further -- painting, taping sheetrock, and paying back the loan. Next summer they have plans for siding the original cabin in the same material as the addition, building a storage shed, laying down permanent wide board native pine floors throughout the entire house, purchasing a new wood burning heater and having a child. Eventually they will close in the crawl space, build a new chimney, add a window or two and purchase permanent light fixtures.

The entire cash cost of the addition will be under $5,700. The value of the property will be around $26,000.
APPENDIX 2

Chronological narrative
of one family's
FmHA mutual help group experiences
BACKGROUND

Joe and Barbara -- with their three young children -- live in a house they built through the Farmers Hom Administration's Self Help Housing Program in a small village on the outskirts of a cluster of old mill towns.

Joe grew up in that village of 250 voters and met Barbara in high school, which was in a town of two shoe factories and 2,000 people about 20 miles east of Joe's town. Barbara had lived in the mill town her whole life. Just prior to building their home they rented an apartment in a slightly larger mill town to the west. It was in a run down row of brick buildings originally built by a paper mill for its workers about 100 years ago. The buildings were actually quite interesting architecturally. They looked as if they had been brought over intact from a factory town in England. They were, however, in very poor condition. Joe worked on the road crew cutting brush, filling potholes and snow-plowing. Barbara raised the children, ages 8, 5 and 3.

LOCATING PROPERTY

They found out about the mutual help program through an ad placed in the local weekly advertiser by the sponsoring technical assistance organization. The advertisement stated that there were building lots in the town Joe grew up in for people who wanted to build their own home with the help of a group of other families. The ad also pointed out that no down payment was necessary.

Joe went for an interview to find out about the program. The sponsoring organization told him that his income level made him potentially eligible and sent him down to the FmHA office to apply formally. Before
doing so Joe and Barbara went up to look at the lots. The TA organization had purchased eight roadside 1/4 acre lots in a row about a mile outside of the town center on the main road. As they were first to respond to the ad, they had first choice of the lots and chose the one closest to the town center.

They had talked about the program with their next door neighbors in the row house apartment and they too applied to the program. They chose the lot right next to Joe and Barbara. After about a month the other six lots were taken and the families were all waiting for approval of their mortgage loan applications from the FmHA. During that time, percolation tests were taken on all the lots and only three of the lots were found to drain acceptably with a normal septic system -- Joe's, his neighbors' and the lot farthest down on the other end were the ones that passed. On four of the five that failed, septic systems could have been installed that would have provided the proper drainage, but they would have been of such complexity that they would have added over $1,000 to the price of the house. The sponsoring organization felt that this could not be absorbed in the budget for each house. The sponsors went searching for additional lots in the general area. There were no more available in that particular town. About 6 1/2 months after the original reply to the advertisement, Joe and Barbara's mortgage loan for $26,000 was granted by the FmHA. The loan was for 33 years and for the first two years the interest charged was a mere 1%. The "interest credit" was to be reviewed ever two years.

DESIGN

The loan was for $26,000 because that was what the technical assistance group told them to apply for. Joe and Barbara had a choice of
two designs (a third design was to be used only if the family had six
or more members). The two designs cost exactly the same amount of money.
No design changes were allowed in the structure and, in fact, the only
revision the family made was to cut a small serving/view window between
the kitchen/dining area and the living room. Prior to construction
there was a meeting at which they chose the colors for the outside of
the house, for the bathroom tile and for the interior finish.

CONSTRUCTION

Joe's previous construction experience was "shovel work" for the
road crew. Barbara had none either.

Though the group -- originally planned for eight families -- was
now down to three families, construction work began. Foundations,
septic tanks and wells were subcontracted out. The technical assistance
group found the subcontractors, drew up the contracts and negotiated
the price. They also low bid purchased the material for the families
from building supply yards. The framing and sheathing of the house
was done for free by a crew of prisoners on special work release as part
of a job training program (they had a Department of Corrections super-
visor). Joe and the other members of his mutual help group found it
useful to double check all work as they found missed nailing patterns,
etc. In general, they were pleased with the work ("considering the
price"). The families were responsible for the roof shingles, the
exterior painting, the interior framing, sheetrocking, trimming and
painting.

After Joe and Barbara and the other two families were six weeks
into the construction of their homes, the sponsoring agency got three
of the five other original families ready to start construction in sites on the outskirts of the larger mill town that Joe and Barbara were renting in. They asked Joe's group if they would join with the new families to form a larger mutual help group. Obviously the new families would be getting the benefit of three somewhat experienced families and Joe's group would be getting less work in return, as they would expect their homes to get done six weeks sooner. Joe's group agreed to help.

Due to problems with ledge, a slowdown by the well contractor and slow work on the first houses due to inexperience, the three houses in the small town took almost eight months to complete. The three in the larger town took only six months.

Over that eight month construction period there were three different construction supervisors at the two job sites. The first two quit, saying that the job was just impossible to handle. Construction supervisors were on the site when the group was working (i.e. nights, weekends, and holidays) and also had to be on the site during the day to supervise subcontractors.

Inspectors from the FmHA visited periodically, as did the part time local building inspector (a contractor) who was a childhood neighbor of Joe's. There was no problem getting enough friends to work on the house and weekends on the site became social affairs as well as work.

In the year that they have been living in the house, three or four of their friends have inquired about the details of the FmHA program.