

THE OWNER BUILDING SYSTEM

A CASE STUDY AND MODEL OF AMATEUR HOMEBUILDING

by

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ABSTRACT

An analysis of the way amateur homebuilders employ personal and professional resources is taken from 121 case studies in Boston's suburbs. Families hear of owner building by contact with many different social circles. They select this way to home ownership if it fulfills special requirements for them. While savings and quality control are important criteria for selecting the owner building option, many families want to exercise abilities they feel they have.

Once the important planning stage begins, owner builders expand their abilities and available resources. They augment the professional homebuilding system by contacting new-found networks of friends, relatives, and former owner builders for information and assistance. Their residential stability helps them gain access to the local supply of materials, services and credit. Their different networks of friends gain them information on different ways of solving problems. Professionals supply services; friends and relatives generate subcontractors and suppliers names; while former owner builders play a critical role in supplying advice on how to do certain tasks.

Because they predetermine their own labor input, the owner builders' behavior during the construction process is a function of how they see they should exercise their personal abilities. They do this efficiently enough to accomplish their goals for owner building. Cost savings and personal satisfaction are high and warrant more careful investigation as to how more access can be provided to the owner building system.

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Introduction

There is a large and unrecognized system which produces houses in America's suburbs and small towns. This system of amateurs building their homes requires families to at least perform a general contractor's duties in addition to any labor they select to do. By combining professional labor with personal managerial and construction skills, owner builders are responsible for a fifth of all single family housing and a tenth of suburban single family housing constructed each year. These 160,000 owner builders are responsible for over 3 billion dollars of annual fixed capital investments, a billion of which is made in the nation's suburbs. Their homes are large, high quality, first homes. (Table I) To neglect these facts would be to misunderstand the potential of a system for gaining home ownership which organizes new resources for housing and provides satisfaction for its users.

Because this is the first detailed study of how suburban families plan and build their own homes; there is no national, comparable analysis of the owner building system. The one in ten suburban families owner building probably overcome far more personal and legal constraints than the one in three owner building families in small towns. These constraints, such as building codes and white collar commuting jobs, make analysis of suburban owner building more fascinating. The suburban and small town families appear to be using the same resources to owner build, but the contexts of the two are different.

Information from 121 replies to a questionnaire received

from families who owner built between 1956 and 1970 in eight northern Boston suburbs, and interviews from a cross section of this group constitute the basis of this thesis. The eight townships of Beverly, Danvers, Hamilton, Lynn, Lynnfield, Peabody, Salem and Wenham compose a fan-shaped sample area on the coast north of Boston. It had a 1970 population of 254,477, distributed from the high densities of industrial Lynn with over 90,000 residents to the low suburban densities of wealthy Wenham with less than 4,000 inhabitants. Part of the area is considered higher status than other townships which surround Boston, but Lynn and Salem have the classic urban problems; unemployment, industrial stagnation and innercity decay. In geography, density, and income distribution, the area in many ways acted as a surrogate for metropolitan Boston.

The local professional homebuilding system provided ample resources with 63 banks or savings and loan associations, 24 locally owned building material supply companies, 48 hardware stores, and over 3,000 construction tradesmen to draw upon. Contracting was dominated, as it is nationally, by small firms with less than five employees. Within the possibilities offered by that professional system, the sample brought to bear their own abilities and those they could enlist from friends, former owner builders and professionals to form the owner builder system.

The insights which emerged from the case study tell us generally about the system by which amateurs build their homes in the suburbs and how families enter that system. The description of the decisions the sample families had to make throughout

the process of planning, managing and laboring on their homes, shows varying degrees of sophistication and a keen sense of avoiding professional fees. It also demonstrates the advantages local residents have for efficient organization of the process, and what they can expect from available resources. A more detailed interpretation is possible from the Tables in Appendix I.

Briefly however, personal circumstances make many families simultaneously dissatisfied with their housing and members of different circles of friends. Their network of friends and business associates may stimulate them to explore the owner building option to home ownership. If they select to owner build, they will not only have to plan and manage the construction of a house, they must also select for themselves where in the spectrum of personal labor input they will participate. Even before they begin to construct they will be participating in a system composed of their personal abilities, and the professional and informal resources available to them. But the behaviour of owner builders cannot be described without understanding what roles they predetermine for themselves in this owner building system. Whether they preplan to do as much construction as possible; to do only that profitable; or decide to only manage construction, shapes the owner building system by determining the abilities and resources the owner builder will use. The option to make owner building attractive for those who want to optimize their input is one method of expanding the owner building population. However, the necessity to provide access to the owner building system for more families, no matter

what their goals or predetermined roles, seems more important for maintaining the individually tailored aspect of the owner building system.

Chapter I: The Decision to Owner Build and the Boston Case

When families are asked how they knew about the owner building option, their answers are generally vague. Some want to owner build all their lives. Others came upon the option via owner building friends or relatives, and others only discovered owner building while weighing methods for obtaining home ownership. The lack of mass media coverage on the subject suggests there must be other channels of communication by which families hear of the owner building system and are convinced to use it.

1.1 Deciding to Owner Build:

Families consider owner building because of their personal characteristics. The sample families were socially middle class, generally headed by young men, and geographically stable.

(Tables XIX, XX, XXI) They also wanted to move from their prior homes. (Table XXIII) Those who didn't want to move to gain home ownership wanted a larger house. Many were expecting to increase their family size and about half rented immediately prior to owner building. (Tables XXII, XXIII) With such circumstances shaping attitudes towards their housing, families are receptive to suggestions of how to enter or re-enter the housing market.

One feature of middle class American families is their numerous casual contacts and acquaintances. Elizabeth Bott (1-see bibliography) described these social circles as networks, and demonstrated that middle class families were connected to loose knit networks in which information is passed among many

families because there are few contacts among the members of any one network, but connections to different people in many more networks. These loose knit networks are crucial for information on resources and particularly significant as Granovetter(3) points out, for hearing about job possibilities.

The combination of middle-class families' tendencies to participate in loose knit networks with many families' dissatisfactions with their present housing, creates the circumstances in which mention of owner building becomes the catalyst which sparks interest. The loose knit network has supplied the medium for such a reaction, and the felt needs of the family have supplied the conditions for considering the possibility. Even if one circle of friends disapproves of owner building, others may approve, or more probably know of someone who owner built if they didn't themselves. Since the sample owner builders overwhelmingly felt they had a successful experience and freely recommend it to others, reinforcement to owner build is the more likely attitude of the acquaintance. (Table XVIII)

Intrigued by the possibility of owner building, families then must decide if the option is for them. The owner building option provided five basic reasons for the sample families to select it over purchase or custom building: (Table XXIV)

For us it was cost. We weren't able to find a home large enough at the price we could afford. Building our own made it possible. (wife of an aircraft pilot with five children)

I felt capable of making hundreds of decisions and had the time and energy. (mechanical engineer)

...my personal desire to have a house that is 'tailor made' for me and my family. (civil engineer)

By building my own home, I could have what I wanted and not what some contractor put in it because it was cheaper. (mechanical engineer)

...self satisfaction and a sense of accomplishment. (letter carrier)

The desire to control costs, architectural style, and the quality of materials or labor are self-explanatory reasons for selecting the owner builder option. Other independent and self reliant sample families enjoyed the challenge of working with their hands; definitely an option offered by owner building. Of the thirty-two families who selected to owner build because they felt they were capable, only eight were in the professional homebuilding business, while fourteen volunteered how difficult owner building was. But it was important to them to practice what they thought they could do or learn to do. These last two are reasons peculiar to owner building and not attained by home purchase.

If families tentatively explore the option and find it attractive to them, the decision to owner build will be based on their assessment of both personal abilities and the resources available to them from others. The sample obviously felt able, so what characteristics set them off? Being young, the sample felt strong enough to carry the extra work. While only a fifth were employed in construction, it is not coincidental that the four most frequent occupations of the sample were firefighters, carpenters, mechanical engineers and policemen. The skills of

a carpenter or mechanical engineer are closely related to homebuilding. The nature of occupational time requirements for a firefighter or policeman is duty periods interspersed with longer periods during which they are on emergency call or off-duty. This gives these public servants blocks of time to basically use at their discretion. Occupational characteristics can give the sense of ability or freedom to owner build.

The sample had completed about a year more of schooling than white males and a year less than professional homebuilders. But schooling doesn't account for the skills learned in summer construction jobs, or the self confidence generated by rehabilitating an apartment or helping a friend erect a carport. These are elusive, personal details, sometimes springing from the American do-it-yourself tradition, sometimes tied to rural upbringing or parents' and relatives' occupations. These qualities are largely unpredictable and often the compilation of many, seemingly insignificant experiences. They add up however to the sense of personal ability to manage or labor which helps every owner builder overcome the inertia of the decision to owner build.

A family's degree of connectedness to resources also partially determines the decision to owner build. Situational characteristics help explain that connectedness; for instance nearly sixty percent of the sample had been established in the area for over ten years. (Table XI) Ninety-four percent had relatives who lived in the area. There was a propensity to depend solely on relatives if they were initially used as sources of informa-

tion or professional labor. There is also some tentative evidence from Robert Ledogar (5) that most sample families were connected through relatives to real estate or construction. As they begin to learn the resources embodied in their network of friends and relatives they become conscious of heretofore unknown skills and connections. They begin to realize their friends and relatives are a link between a professional home-building system, and a system for building homes they may never have known before. The families are expanding their networks by discovering new ones. Selecting out those people they previously knew who can help them, and seeking new contacts assures them an adequate supply of their most precious resource, information. Momentum to select the option builds as more and more information is gathered. Finally the decision based on characteristics and connectedness is made.

Perhaps ratification of what is now a predisposition to owner build comes from contact with an owner builder. As Everett Rogers (7) points out, the trial stage of an adoption of innovation process may be skipped if the adopter respects the opinion of a previous problem solver. Whatever the still somewhat unknown process of deciding to owner build hinges on; once the decision to use the system is made, it sets in motion ever-expanding personal abilities and reliance on resources external to the family.

1.2 A Case of Owner Building:

The process of owner building resembles that of professional

homebuilding, with planning and construction stages. Many of the decisions to be made; the kind of plan to use and whether or not to use one or another subcontractor, are those general contractors make. The sequence of decisions varies little from the professional process while the resources employed to make those decisions and accomplish the planning and construction tasks are larger in scope and more informal in nature than those professionals use.

1.2.1 Planning the House and its Financing:

Before beginning to construct, the Boston suburbanite spent a median of five months planning the house, the financing, and professional and personal labor input. Some did all their planning within a month, but a year elapsed between deciding to owner build and beginning construction for a third of them. Like local, professional homebuilders, only a few had to search beyond nearby suburbs for materials and services. (Table IV) Information to plan and construct came from three costless sources: friends from work, building material supply companies, and other owner builders. (Table III) Besides knowing local resources because most had lived in the area some time, they gave themselves ample time to plan their home's construction. (Table II)

Personal or kinship relations led to over two-fifths of the lot purchases or gifts. Others contacted the lot owners directly, while others who were not local residents purchased their lots through realtors. (Table V)

...bought through a woman known by
(my) mother-in-law. (draftsman)

...bought my lot through an ad in
the local paper. (policeman)

...had been negotiating for a home
with a builder, but decided to build
rather than buy one of his homes, so I
bought a lot from him. (businessman)

The importance of obtaining a virtually costless house plan, as well as the independence exhibited in obtaining it, was an issue to the seventy percent who designed it themselves or used modified magazine plans. (Table VI) Hardly anyone used any type of precut, or readily assembleable structural system, or stressed its importance in making the task of owner building easier. Forty percent of the sample stressed the importance of the house plan if they were to owner build again. (Table XVII)

I'd spend a lot more time going over the
plans. (electronic engineer)

...rearrange the kitchen and den and
have larger bedrooms. (foreman, boat
manufacturer)

Of the one-hundred and nine families who sought mortgages, the vast majority needed to visit only one bank or savings and loan association, and only a tenth had to see three or more before getting a mortgage. (Table VII) No one had to make special arrangements with the lender because they were owner building. Although this step generally occurs before construction begins, a quarter of the sample felt they could lower or attract bank financing more easily by beginning construction before seeking financing.

Putting in the foundations was my
'ace in the hole' with the bank.
(civil engineer)

...we didn't borrow until we had to
pay for the floors and finish wood-
work...then the bank trustees just
looked at our house from a distance
and didn't want to see the inside.
(wife of a construction foreman)

While this variation from the general housebuilding scheme may not be the best policy economically, it did assure banks of the sincerity of the sample's effort. Local banks reciprocated by freely lending to owner builders.

1.2.2 Deciding to Labor and Selecting Subcontractors:

Two critical planning decisions every owner builder had to make were whether or not to do a construction task themselves, and if not, how to find and select a subcontractor. Because of the importance of this decision, four-fifths of the Boston suburbanites planned what personal labor they were to do before beginning construction. The Boston suburban owner builders concluded they would subcontract half of the construction tasks and sometimes assist professional labor to do specialized tasks. (Table VIII) To find professionals they turned to friends and clients at work to generate names. (Table IX) Personal suggestions were more important than inviting bids or referring to the telephone business listings. Only a few families used these formal methods to find subcontractors.

There was substantial empirical selection of subcontractors. Quality control loomed large since over half the house was con-

structed by others. Personal negotiations after observing the subcontractor's work, or getting an opinion from a friend, relative or another owner builder far outranked the method of bids and lowest costs. (Table X)

The important part of building is maintaining the quality of materials and labor. (telephone linesman)

Yes, I'd owner build again, but I would subcontract to reliable and competent subs, keep a close eye on all phases of constructing. (pipefitter)

The sample did thirty-six percent of the construction tasks themselves, notably carpentry plus exterior and interior finish work. Only a few did excavation and foundation work and not surprisingly nearly everyone did clean-up and landscaping. (Table VIII) They decided to labor largely on the basis of their sense of personal ability to do a certain job coupled with their access to advice on how to do it. (Table XI) The time involved in a construction task was often mentioned in connection with personal ability. Twenty percent of the sample selected to labor because of the savings involved, but personal ability far outweighed other criteria.

...if I thought I could do the task, I did it. (mechanical engineer)

With advice from my relatives, many jobs were attempted such as wiring, and plumbing (used a manual for these jobs) which I never did before. (foreman, boat manufacturer)

During construction, the family heads faced the difficulties of essentially holding another full time job over a median eight month period. (Tables XII, XIII) Other members of the family,

who mostly did painting or clean-up work, weren't really called on to lighten the load either. Also, slightly less than half the sample used vacation time to owner build. (Table XIV) A few were retired and some held part-time jobs; but nearly everyone's nights and weekends were spent building or managing the construction of their homes. The sample had some difficulties with the amount of personal responsibility and the skills required to do construction tasks; but the problems of managing the work of others and maintaining contractors schedules and workmanship plagued them most often. (Table XV)

My biggest problem was having contractors perform close to schedule so that I could schedule other subcontractors.
(stock room manager for an electronics firm)

Eliminating short cutting by subcontractors, making sure all stock ordered was used in your home and not taken away by subs for someone else.
(planning manager for General Electric)

The families didn't feel compelled to move into their homes to save the extra rent or mortgage costs. (Table XVI) Those who moved in as quickly as possible later regretted having to live with the tools and construction dust. Nearly all were still satisfied with their owner built house, and while the sample would change the house plan or style, they would both owner build again and recommend it to other families as a way of obtaining a new single family home. (Tables XVII, XVIII)

Chapter II: Analysis of the Owner Building System

There are two components of the owner building system; the family and the resources external to them. The owner building system is distinguished from the professional homebuilders' system not only because it includes the personal abilities of the owner building family, but also because it draws on informal contacts other than hired services. These are resources external to the family, but never included in the professional homebuilding system. They are constituted in the purchase of professional services and informal contracts with friends and other owner builders to supply information in the form of reference or advice. External resources are only services because the owner builder generally cannot escape the purchase of land, materials and credit. Before analyzing how families capable of owner building use their personal abilities, it would be useful to look at the special role professionals, friends and other owner builders each play in the owner building system.

2.1 Professionals and Friends as Resources:

The professionals of the owner building system are those from whom the owner builders may purchase services and those who manage the institutions both professional and amateur builders contact. They range from lawyers and permit officials to plumbers and unskilled laborers. Both amateurs and professionals are able to find quality contract labor, credit, and nearly all of the materials they need in their local areas.

In addition, most local homebuilding enterprises are small, seasonally variable in output and open shop or non-union. These qualities of the supply system are assets to owner builders who depend on the same material suppliers, the same labor force and lenders for building as do the professionals. The building industry as presently organized, although it largely exists to serve professional builders is an important actor in the owner building system.

The informal actors external to the family are friends and other owner builders. We have seen both the relatively high frequency with which friends and relatives are contacted, and the importance of the nature of their relationship to owner builders and others. Their function besides introduction to the possibility, is to refer the family to others who can better help them owner build. This often casual relationship, as the generators of subcontractors' or material suppliers names has a definite place in the owner building system.

2.2 The Special Resource of Other Owner Builders:

The key non-professionals in the owner building system are other owner builders. Probably they ratify the decision to owner build and most certainly they ratify the owner builders' choice of subcontractors. The majority of the sample families had been contacted over ten times by other families owner building, and a quarter had been contacted over twenty times. (Table XXV) While friends and material suppliers, both acting as non-professionals, are asked for information more times, the former owner

builders rank first in the priority of sources of information. (Table III) Former owner builders are the most trusted opinion about choices those presently building have made. They provide the most valuable advice, or 'how to' information and are unique to the system as being the only ones who have previously gone through the process. Two unique ways they assist are suggested in analysis of the way the system works.

2.3 The Owner Builders Use of Personal Abilities:

By deciding to owner build, the family feels it can perform, or learn to perform, the managerial and manual tasks involved in homebuilding. Many owner builders invite the possibility of using or learning managerial and manual skills, and that ability is largely the composite of education, occupation and experience. But predicting how families use personal abilities, the second component of the system, is even more difficult than predicting who has the ability to owner build.

The economic logic of opportunity costs tells us that, besides the mandatory exercise of management tasks, families should maximize their construction skills. That is, they should select to labor in those tasks they feel competent to do which have the highest savings payoff. Analysis of the way the sample used personal ability didn't always follow this scheme. It was continually frustrating to try and predict who would do what. Those who obviously had the skills to construct didn't do as much labor as would be expected. Those who said they owner built to save money and who did construction tasks to cut costs were

not in the sample's lower income occupations. Only half of those who said they owner built because they had the ability also decided to labor because they had the ability; while neither were particularly in construction occupations or those requiring manual dexterity or spatial perception. A predictor, other than that of economic logic was obviously needed.

We know that eighty percent of the sample preplanned their labor before beginning construction; that the opportunity cost argument doesn't dominate the decision criteria for laboring, and that a thread of self-criticism about personal ability ran throughout the sample. From this, an explanation emerges which suffices to rationalize the seemingly disjointed behaviour of the sample families' use of their personal abilities. It is a typology of character types based on the role owner builders set for themselves to play during the construction process. The typology explains their use of personal abilities, which in turn ties back to families' behaviour based on the original reasons families give for selecting the owner building option as their means to home ownership. I have dubbed the types 'pioneers', 'engineers', and 'managers'.

2.4 Pioneers, Engineers and Managers:

There was some of the same individualism in the Boston sample that is exhibited by the fifth of the national owner builders who build their entire homes without paid professionals (6). A quarter of the sample stressed that owner building families should be diligent and perservering. Over a quarter

owner built to exercise their ability to do it and over a tenth wanted to owner build for the sake of the activity.

Any family that uses good judgement and willingness (sic) to work hard can build. (service station owner)

The family needs to be young, energetic, intelligent, mechanically inclined, and perservering. (wife of a construction superintendent)

Any family should build who shares the joy of creating a structure and has the aesthetic feel and patience. (assistant sales manager in a pipe factory)

Because of their independence and perserverence reflected in their recommendations to other families; their desire to do what they felt they could do, and the sense of joy they derived from the do-it-yourself tradition, these families seem most like 'pioneers'.

The 'engineers' are calculators, like the thirty-five sample families who owner built to save money. They are also like the eleven who gave the opportunity cost argument as criterion for laboring.

In looking around the area for a house to buy, we found people wanted too much money for what they were selling. (school teacher)

Cost savings in construction were weighed against time loss to do-it-myself, like floors and foundations. (mechanical engineer)

...value engineering, detailed, written plans, operational step by step sequential instructions...the Heathkit approach. (quality control engineer)

'Managers' probably owner build for any of the reasons

given by the sample. They may calculate that they are capable of achieving targeted savings by only managing others or that the product of their labor is so inferior to their desire for quality that they should do no manual work. For instance, a family who calculates what tasks they should do on the basis of opportunity costs and decides they should do none, except perhaps clean-up or landscaping, has switched from being 'engineers' in the planning phase to 'managers' during construction. Whatever their motives, the 'managers' set for themselves only the tasks of planning, administration, and coordination, like a fifth of all owner builders do each year in the United States (6).

2.5 How the Owner Building System Works:

The owner building system is activated by 'pioneers', 'engineers' and 'managers' using professional and informal resources in different ways to build their homes. If we could understand how different families feel about using their abilities, how well connected they are to informal resources and capable they are of purchasing professional services, we could predict how the system would work. Since we can presently neither predict the mix of owner builders nor the way the system works, we must be content to look at generally how owner builders operate within the building industry and how the different types of owner builders use external resources.

The institutions of the building industry, which the owner builders use and complement with their own resources, are the

basis of the owner building system. Owner builders operate at a disadvantage in those institutions which basically serve professional homebuilders. They pay more for materials; depend on 'moonlighting' subcontractors who often don't show up; deal with permit officials who are sometimes correctly suspicious that licensed work has been done by the owner builder; and occasionally face hostile contractors who see owner building as a threat to their profits. If they were denied access to permits, credit, materials etc., the owner building system would cease to exist. But generally they can use those institutions and 'tap into' them with great proficiency, as the sample's sense of success and their ability to obtain materials, services and particularly mortgage credit shows.

As professional homebuilders respond to profits from local demands for housing, the different types of owner builders respond to a variety of reasons for owner building. Because they use the building industry's institutions for goals other than profit, and in roles other than general contractors, they create a diverse system, rich with varieties of patterns of use, and receptive to continual expansion by the initiation of others.

The reference and advice of working friends and former owner builders, two of the three special resources of the owner builder system, greatly facilitate the day to day decision making of the three types of owner builders. Working friends are used to generate names and test ideas on because they are readily available at least eight hours a day. Other, or former owner builders are accessible and there is some evidence to show that while

they are planning and constructing, owner building families stay in close contact with former owner builders.

Two ways close contact is possible emerged from the sample; the potential to repeat owner building, and the proximity of other owner builders. Nine of the 121 sample families volunteered they had owner built before. The extreme case built and settled in seven houses over fourteen years before switching jobs to become a general contractor. A quality control supervisor for Sylvania built four, another family built three, and six families owner built twice. These were all in different locations over the course of at least five years, so their 'visibility' was high and part of their local identity was having built their home.

We have seen the high frequency by which owner builders are contacted, and one way this is possible is by proximity. In the sample there were eleven instances of at least three families who lived within four blocks of each other on the same street. These 'clusters' of owner builders may have been even more frequent, as no mapping of locations was done to find if families lived on nearby parallel or intersecting streets. No one house could have been constructed more than five years later than one of the others in the cluster, so information from former owner builders was still relatively fresh and useful. Some families even may have selected to owner build to use the skills embodied in the former owner builder. One cluster began when a family subdivided and owner built on one lot of a three acre parcel they bought from the wife's father. In three years, three other

families had owner built on the same cul-de-sac. This unique use of former owner builders by others greatly contributes to the flexibility of the system.

More of the variety in the owner building system is provided by the way 'pioneers', 'engineers' and 'managers' seek information. Because of time constraints and their predetermined roles, owner builders generally set out to resolve a problem with tentative process for solving it in mind. This helps sort out whether advice or referral is needed; that is, whether the owner builder is looking for 'how to' information or reference to someone to do the task for them. Planning and management, which all owner builders do, requires advice on design, debt servicing, cost accounting, task scheduling, etc. If they had preplanned to do a construction task, they also sought advice from material suppliers, publications and other owner builders. If they planned to subcontract, they looked to friends and subcontractors for names. Each of the different owner builder types, because they previously had decided their own role in construction, searched out different kinds of information to resolve problems in different ways.

The 'pioneers' construct with the attitude that they either know enough or can learn along the way. They are probably like that fifth of the sample who didn't preplan construction before beginning. This causes redundancy in the search for information because they don't know whether they are looking for advice or reference. They probably design their homes without help, use relatives for information or labor and speak euphorically about

the need for close families and a sense of accomplishment. If they own or build because they feel they have the ability or enjoy the activity, they do substantially more construction themselves than the average sample case did. Because they set out to do as much as possible, their greatest need was advice; but they also needed some unknown gauge on their ability, so they would know when not to try.

We wanted to do all construction ourselves...(we did) until we ran into difficulties and then would consult members of our family whom had also built themselves; two sisters and four brothers. (firefighter)

The 'engineers' use informal contacts for both advice and referral. First, they decide which jobs will save them the most; then they decide if they feel capable of doing them. After they calculate their input they probably use bids as a way of selecting subcontractors. They only learn carpentry and painting skills, the two skills which can have the highest pay-off for unlicensed labor. Managerial and technological efficiency guide their decisions as well as a keen sense of 'milking' the professionals for everything possible.

...think big in (the) size of the home, think cheap on accessories...I would hustle the hell out of the bank for all the money in sight. Put your wife out to work for the four months prior to loan application. She can quit as soon as the loan is approved...Always go with (the) low bidder. Tell all bidders what (the) competition is bidding--knock it down 10%. Never pay a contractor until he threatens to sue you or beat you up. Set out to screw everybody...these guys are used to getting 2/3 of what they bid

and their prices reflect it. When a guy gets chummy...watch out--he's taking you to the cleaners. About the only way to get on top...is to plan carefully and monitor the job all the way...(engineering assistant)

The 'managers' take a long time to plan and probably use realtors, draftsmen and architects to perform professional services for them. They have the greatest need for friends and relatives who can refer them to subcontractors. If they are interested in quality work they contact subcontractors directly and hire them on the basis of mutually agreed prices. They labor only when mandatory and feel their role is management.

...would tackle anything that would not hold electricians, plumbers, brickmasons, carpenters etc. (foreman, shoe machinery manufacturer)

(If I owner built again)...only do the necessary supervision, design, buying and let all contracts, etc. (an unemployed electronic engineer)

These brief insights demonstrate how the owner building system encompasses families using different abilities and resources to accomplish the same thing. We have seen how it is impossible to explain the system's behavior by conjecturing how the components, personal abilities and external resources, will work together. The variety in the system provided by the three roles suggests how it continually expands to meet new resources, roles and abilities. Because it depends on networks of friends and relatives, coupled with institutions of the building industry; it is dependent on time, the local suppliers of materials and services, and the connectedness of the user to

that industry.

The owner building system is an open, self-generating system because it can alter the use of components and respond to new people with new resources. It is also flexible because it provides a high degree of equafinality, the ability to arrive at the same point (of having an owner built house) in a variety of ways. Because of these characteristics, it is possible that the owner building system can grow to include many times the number of users it has now.

Chapter III: The Future Contribution of the Owner Building System

The previous evidence and arguments are ample reason for families and policy makers to seriously consider the owner building system. Much of the strength and resiliency of the United States economy depends on the same kind of decentralized decision making and responsiveness to local conditions that the owner building system reflects. To ignore the potential of owner building in a housing crisis would be to discard an invaluable tool by which families help themselves define and resolve their housing needs.

Providing access for all kinds of families to enter the owner building system is as important as thinking in terms of expanding the number of owner builders. To allow families to select what kind of role they think they should adopt while simultaneously assisting them to owner build would maintain the freedom and spontaneity of the present system. If the potential of owner building is approached with the goal of making the software or hardware of the system efficient, and the host of possibilities presently available is forgotten; owner building could become the victim of an attempt to formalize an informal, open and self-generating system.

3.1 The System's Market Significance:

The owner builders and the system they use to construct their homes could become even more important contributors to housing production than they are presently. Trends in suburbanization, the professional homebuilding industry, and the nature

of the work week now support the owner building option instead of arguments which say either it requires special skills or is economically a waste of time. As equal housing programs of the last decade have demonstrated, expansion of the suburban owner building population beyond the class or race of people who presently do it will depend more on social change in the suburbs than on any form of assistance or legislation.

Suburbanization and single family housing are likely to continue to absorb the bulk of middle class home owners in the coming generation. Trends in family formations suggest there will be a middle class housing crisis in the late 1970s and early 1980s while the 'Baby Boom' household heads reach the median age of present owner occupants of new housing. However, suburbanization won't occur at nearly the rate it did immediately after World War II. For professional homebuilders this means that the concentrated markets for on-site construction won't reoccur. Industrialized housing, while imminent, probably won't reduce costs over the long run because of the universal demand on industry to be competitive in earning power in order to attract investors. In many places the acquisition of large land parcels for numerous single family units, crucial to developers' profits, already looms as a major problem. Custom building by developers on scattered sites is nearly always cost prohibitive for market conditions. In such cases, small, low-profit builders and owner builders will play a definite role in housing production.

People who haven't owner built; who don't know owner builders, or whose special interest it is to oppose owner building generally

have two criticisms against the owner building option. They say that the skills required to owner build are too difficult and wasted an a 'one-shot' effort. They also say that families who can't afford to buy, and are considering owner building, should get a second job instead. In light of the untapped potential invested in a nation with such a high level of education and the rate of increase of housing costs, these criticisms of owner building seem poorly grounded.

Construction journeymen certainly have completed less years of schooling than the Boston sample, and while education is not wholly predictive of personal ability, it should be indicative that a much larger proportion of the United States male population is capable of owner building. Since many of the sample came to owner build after rehabilitating other houses or apartments, it would also be safe to assume that households with this experience would feel capable, even if they had less education than the sample.

Learning the skills to owner build is much like learning to operate an automobile. Imagining the difficulties, or reading about it being done, can generate fear and inertia. Once it is tried however, it is clear that anyone of average intelligence and decent manual dexterity can quickly learn to be at least functional. The importance to the sample of maintaining construction and labor quality surely suggests that the home maintenance and improvement skills learned while owner building are assets to the preservation of the housing stock. Thus, owner building for a large part of the American population should be

neither extraordinarily difficult nor energy spent learning unusable skills.

The skills of the work force and the nature of the work week also refute the critics of owner building. There are skills in any occupation which can be transferred to owner building. This is partially attested to by the sample owner builders being more truly representative in home ownership of the total working population than home buyers. (Table XIX) Also, we have seen that some families select to exercise only certain abilities, perhaps those most transferable from their occupations, and purchase services when necessary. It is this gradient of possible personal input which makes households with different occupational skills interested in owner building.

Life's (2) choice of an owner builder as representative of a useful application of the extra day gained by the four-day work week may be highly significant. Although most families owner build at nights and on weekends, they most generally do so at the disadvantage of lengthy start-up times. That is, they don't have the advantage of the sample's firemen, policemen, sales representatives, or anyone else whose occupational time schedule allows them to more often set up their tools and work a full day. Three full working days allows owner builders to gain nearly another working week if they work three more hours each free day than their regular hours. Not only does the three day owner building week cut down transportation time and enhance the efficiency for those owner building in states where stores are open every day, it also soothes the worries of labor econo-

mists who argue the four-day work week induces laborers to seek second jobs.

A critic's suggestion to work overtime or go get a second job and let a \$7.50 an hour carpenter or painter build for you rings a little hollow today in the United States. It sounds particularly spurious if contractors' overheads, sales charges and profits are calculated on top of construction costs. Construction wages and profits have led inflationary trends. The five percent unemployment figure is likely to stay for some time and include the middle class in it. Also, many white collar occupations don't pay overtime wages in the first place. But what can a family owner building save, and how does that pro-rate per hour for performing all the management and some of the labor on one's own home?

If the sample's median size home were built at the construction cost per square foot of a home for sale in the Northeast in 1970 of \$16.00 per square foot, this 1900 square foot house would have cost \$30,400 without land. The median amount of time the sample spent owner building was between 900-1200 man hours over an eight month period. (Table XII) The sample's median saving was 20-30 percent or something between \$6,080 and \$9,120 in this case. (Table XXVII) Using these figures, the enterprise and labor equity in owner building would vary from \$5.06 to \$10.13 per hour. (Table XXVII)

A family interested in substituting a second job for the equity earned by owner building would have to find one which pays between \$10,525 and \$21,704 per year. The average sample

case constructing a little more than a third in 1050 man hours and saving 25 percent would earn \$7.23 per hour. This is equivalent to a second job with an annual income of \$15,038. By only managing the construction, the Kaiser Committee (4) tells us a family can save 20 percent of the construction costs, over \$6,000 in eight months. Even deducting something for the overhead costs which owner builders probably don't include as costs to them; such as tool purchase or rental, automobile expenses, extra telephone costs, etc. the option is economically worth the effort. This is true if the costs of holding a second job are counted, particularly taxes on the extra income and added transportation, clothing or special equipment expenses. But it is even more true if one considers present interest rates. A dollar saved presently on construction costs is three dollars saved from debt servicing. With inflation on basic commodities rapidly outpacing popular savings' programs the argument to buy now while borrowing rates are lower is spurious. Families saving for down-payments can't keep ahead of inflation with their bank deposits; they are the ones who are looking to save on construction costs. Those who aren't content to work at a second job two or more years to pay interest costs or contractors' profits have a real stake in the option to owner build.

3.2 Improving Access to the Owner Building System:

As long as the poor and the racial minorities are excluded from the housing market in the suburbs, they will not use the owner building system there. Their extensive use of the system,

apparently in the South and in small towns or rural areas was documented in Owner Building in the U.S.A. (6), so there are few personal abilities which exclude them from developing their potential as owner builders. If they are only given the chance to owner build high quality houses by way of organized, mutual assistance groups, the bulk of them will not be reaching their potential as key contributors in providing access to the system for other poor or minority households.

Not everyone who owner builds does so to save money. (Table XXIV) The system encompasses families whose demands for special architectural features or construction quality are virtually unpurchaseable. But more importantly, it allows large numbers of families to exercise what they feel they can do or enjoy doing. Their life style, an important component of their mental health, depends on learning to do new things. Work and owner building for them are a means to self-fulfillment; where frontiers of capabilities are being constantly pushed forward by the feedback they receive from testing their personal abilities. They grow as more complete and self-confident people, capable of doing tasks which contribute to their daily, existential needs. Housing themselves becomes a challenge to conquer one crucially important item of life which specialization via industrialization has torn from their sense of purpose.

Not everyone wants to or should owner build, but everyone should know about the benefits of the option. There is a delicate balance to be maintained between conserving the variety of possible uses of different resources in the present, largely

informal system, and opening the owner building system to more families. Local professionals are not likely to respond with their present receptivity to greatly increased numbers of owner builders. And to design 'an owner builders program' likely would stagnate the system by trying to define how resources are to be used. Access to the local building industry, with information to lower the redundancy of partially recreating a new network of connections in each instance of owner building, should allow those who think they want to owner build, but presently feel constrained by lack of access to resources, to decide if the option is for them.

The present system suggests a few of the characteristics of a service to provide knowledge of home ownership options and access to the owner building system. It should be locally based because housing and owner building respond to the local home-building market and industry. It shouldn't attempt to usurp local professionals as they often increase the options of builders. It should also not be located in areas where large scale developers dominate the housing market. Perhaps it should be a part of local government services funded by the housing budget, located no further than the public library and perhaps within the office of the building inspector.

The first special characteristic of such a service is that it should have exposure in the first years with the objective of temporarily assisting the networks of friends and relatives to develop a 'critical mass' whereby knowledge of the owner building system for all income and racial groups becomes self-

perpetuating. However, such a service should not be tied to government programs for racial equality or housing assistance. It should act as a broker for families seeking housing assistance, but not be an implementor of such programs. Between the mass media exposure, and special packages of information or courses on home building, the service should seek to both imbue networks of owner builders with the personal abilities to provide critical advice in the system and raise the level of consciousness about the possibility of solving one's housing problems in a manner and for the reasons the eventual housing users give.

There is little reason why the networks of friends and relatives to which all families belong cannot include an owner builder. The tradition of American families controlling how their housing is planned and constructed is embodied in the present owner building system. For whatever their reasons, savings or self-fulfillment, millions of American families have owner built their homes in the last decades. They and the system they used are a resource which cannot afford to be wasted in a nation with a housing crisis.

APPENDIX I

SURVEY QUESTIONNAIRE FOR OWNER BUILDERS:

Name: _____ Address: _____

1. What was the occupation of the head of the household at the time of construction?
2. Has the head of household changed occupations since construction? If so, please state present occupation.
No change _____ Yes, has changed to _____
3. Is your present occupation directly related to the home construction business? Yes _____ No _____ Only Vaguely _____
4. Does any other member of the family hold a job?
No _____ Full-time _____ Part-time _____ Only voluntary _____
5. Were you expecting to increase or decrease your family size when you planned to build your own home?
6. What was the family composition by age and sex at the time of occupancy?
7. Has the family size increased or decreased since occupancy?
Increased _____ Number increased by _____
Decreased _____ Number decreased by _____
8. What is the highest grade of formal education completed by head of household?
sixth or less _____ tenth _____ 2 or less years of college _____
seventh _____ eleventh _____ 4 years of college _____
eighth _____ twelfth _____ post graduate _____
ninth _____
9. Did you own or rent the home you lived in prior to building your own?
rented _____ owned 4-6 years _____
owned less than a year _____ owned 7-10 years _____
owned 1-3 years _____ owned home over 10 years _____
10. What was the major reason which made you decide to move away from your former home?
too small _____ too near relatives _____ rented dwelling _____
bad neighborhood _____ too far from relatives _____
11. Where did you live prior to building your home?
in the northern Boston suburbs _____ outside Boston metropo-
in the western Boston suburbs _____ litan area, but in Mass. _____
in the southern Boston suburbs _____ in New Hampshire _____
intown Boston _____ outside of Mass. _____ in Maine _____

12. How long have you lived within 5 miles of this home before building?
 never lived within 5 miles prior _____ 3-5 years _____
 less than 1 year _____ 5-7 years _____
 1-2 years _____ 7-10 years _____
 2-3 years _____ over 10 years _____
13. Do you have relatives in the Northern Suburbs?
 none _____ parent(s) _____ brother(s) _____ sister(s) _____
 cousin(s) _____ others _____
14. Did you hold a full-time job while construction was in progress? _____
15. How many months did construction take (from excavation to occupancy)? _____
16. Estimate the number of man hours you spent managing and constructing your home:
 0-50 _____ 200-300 _____ 700-900 _____
 50-100 _____ 300-500 _____ 900-1200 _____
 100-200 _____ 500-700 _____ + 1200 _____
17. Did you take vacation time from your job to work on your home? _____
18. Did you have any problems meeting the construction deadlines set up by the bank? If so, how many months did you overrun the estimated completion?
 none _____ 2 _____ 4 _____ 6 _____
 1 _____ 3 _____ 5 _____ more than 6 _____
19. Did you have any agreement with your bank about what would happen if you didn't finish "under" costs or "in" time?
 If so, outline the agreement:
 None _____ Yes: The outline is: _____
20. Differentiate who completed the job by putting mark (S= self; C= contractd out; M= mixed) on these tasks:
 Excavations: Footings.... Interior finishes.....
 Foundations..... Plumbing.....
 Structural framework..... Heating.....
 Roofing system..... Electrical or gas.....
 Roofing finish..... Clean-up.....
 Exterior finish..... Landscaping.....
 Interior partitions..... Others _____
21. Did members of your immediate family participate in the process? If so, which tasks did they do?

22. Estimate how much you think you saved at time of construction. That is, for a home of comparable size and quality, what percent less did your home cost?
 0-10% _____ 20-30% _____ Was not a criteria _____
 10-20% _____ 30-40% _____ Do not know _____
23. How did you find out names of subcontractors? (If more than one way was used, rank most important 1st, then 2nd, etc.)
 Friends _____ Bank _____ Relatives _____
 Yellow pages _____ Building supply _____ Other _____
24. What criteria did you generally use in selecting subcontractors?
 Lowest of bids _____
 Personal advice & negotiation _____
 Quality work although it may have cost more _____
 Reputation with other builders _____
 Other _____
25. Generally, what was the most difficult part of working with subcontractors?
 Finding the correct one _____
 Negotiating a method of payment _____
 Making sure they are "on the job" at the correct time _____
 Your keeping up with their scheduling _____
 Keeping check on quality _____ Other _____
26. Did you have any problems in getting a mortgage because you wanted to build your own home?
27. How many banks or savings and loan societies did you visit before attaining a mortgage?
 1 _____ 3 _____ 5 _____ 7 _____ 9 _____
 2 _____ 4 _____ 6 _____ 8 _____
28. Did you receive FHA insurance or VA insurance or assistance?
 Yes _____ No _____
29. From which group, person, or agency did you receive the most valuable advice and assistance? Rank in order of descending importance, with 1 being the most helpful, 2 the next most helpful, etc.
 Hardware or building materials supply _____ Friends from work _____
 Bank or savings and loan society _____ Relatives _____
 Federal, state or local agency _____ Neighbors _____
 Other owner builders _____ Architect _____
 Other owner builders _____ Real estate dealer _____
30. How did you obtain the house site?
 Inherited it _____ Gift of friend or relative _____
 Bought through realtor _____ Bought from city _____
 Bought from friend _____ Other _____
 Bought from relative _____

31. How did you obtain the house plans?
 Designed myself _____ Building supply company _____
 Purchased through plan service _____ Employed an architect _____
 Got them straight from magazine _____ Employed a draftsman _____
 House was basically prefabricated _____
 Took basic design from magazine and modified it extensively _____
32. What would you describe as the most difficult problem of the process?
33. Did you move in before completely finishing the house (that is, before a comparable house on the market would have been occupied)?
 After completely finished _____ Not as quickly as possible,
 As soon as possible _____ but before interior finishing was completed _____
34. Did you find it necessary to go beyond the nearby townships to obtain materials or labor?
 No _____ Out of the Boston metro area _____
 Yes, but only immediately outside _____ Out of state _____
35. What criteria did you use to decide whether or not you would do a certain construction task?
36. Did you use any precut, prefabricated or factory-produced structural components? (Not including doors, windows, cabinets.)
 No _____ Roofing trusses _____ Floor system _____
 Wall system _____ Prefabricated interior partitions _____
37. What influence or advice would you consider as crucial in finally deciding to build your own home instead of buying?
38. Would you recommend that other families build their own homes? If you do, what kind of family would you recommend it to?
39. How long do you intend to occupy this house?
 Until some unforeseeable date _____ 2-3 more years _____
 Perhaps a year longer _____ 3-5 more years _____
 5-10 more years _____
40. If this house no longer fulfills your needs, describe why:
41. Have you been asked for advice by other families either building or rehabilitating homes?
 None _____ 4-6 _____ 10-15 _____ More than 20 _____
 1-3 _____ 7-9 _____ 16-20 _____

42. If you needed or wanted another house, would you build it yourself again? If yes, what would you do differently?
If no, why wouldn't you?
Yes _____ What you would do differently:
No _____ Why you wouldn't build it yourself again:
43. If you were given the assignment of trying to make the task of building your own home easier for other families, what might you recommend to be done?
44. What is the size of your owner built home excluding unheated spaces?
45. Give the following dates:
- | | | | | |
|--------------------------------|-----|-------|-----|-------|
| a. decided to owner build: | mo. | _____ | yr. | _____ |
| b. purchase of lot: | mo. | _____ | yr. | _____ |
| c. obtained mortgage: | mo. | _____ | yr. | _____ |
| d. excavations and foundations | mo. | _____ | yr. | _____ |
| e. occupancy: | mo. | _____ | yr. | _____ |

TABLE I

CHARACTERISTICS OF SINGLE FAMILY HOMES

Type of Single Family Dwellings (median size)	<u>Percentage distribution of sq. ft. in single family homes</u>					<u>Percentage distribution by housing characteristics</u>						
	Below 800	800- 1199	1200- 1599	1600- 1999	2000+	<u>Bedrooms</u>			<u>Bathrooms</u>			
						2	3	4+	1	1½	2	2½+
Dwelling for sale, 1970. (1400 sq. ft.) (a)	1%	34%	27%	16%	21%	8%	63%	29%	26%	21%	35%	18%
Owner built homes, 1970. (1325 sq. ft.) (a)	14%	37%	25%	11%	13%	28%	58%	14%	47%	15%	27%	12%
Suburban Boston sample. (1900 sq. ft.) (b)	--	9%	20%	20%	51%	9%	47%	44%	13%	16%	35%	35%

(a) Bureau of the Census, Department of Commerce and Department of Housing and Urban Development, Construction Reports; Characteristics of New One Family Homes, 1970, Series C-25; Washington, D.C. September 1971.

(b) Compiled from 56 responses to Question 44.

TABLE II

LENGTH OF RESIDENCE WITHIN FIVE MILES OF OWNER BUILT DWELLING

<u>Length of Stay</u>	<u>Subject Count</u>	<u>Percentage</u>
Over 10 years	68	58.0%
7-10 years	6	5.0%
5-7 years	3	2.5%
3-5 years	11	9.5%
2-3 years	4	3.0%
1-2 years	2	1.5%
Less than one year	2	1.5%
Never	22	19.0%
Totals	118	100%

Compiled from 118 answers to Question 17.

TABLE III

SOURCE AND MOST VALUABLE SOURCE OF INFORMATION

<u>Source</u>	<u>Frequency of Answers and Percent of Total Priority</u>		<u>Percent Distribution by Priority of Source</u>		
	<u>Number</u>	<u>Percent</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>
Working Friends	50	21.5%	23.0%	21.0%	25.0%
Building Supply	46	19.5%	16.0%	28.5%	25.0%
Owner Builders	45	19.0%	27.0%	16.5%	15.5%
Relatives	35	15.0%	20.0%	9.0%	18.0%
Architects	19	8.0%	5.0%	11.5%	12.5%
Banks, S&Ls	11	5.0%	4.0%	10.5%	--
Others	15	6.5%	5.0%	3.0%	--
Sought no advice	12	5.5%	--	--	--
Totals	233	100.0%	100.0%	100.0%	100.0%

Taken from 233 responses, 198 of which assigned priority to their source of information, to Question 29. The category 'others' includes government agencies, real estate dealers, contractors, and the public library.

TABLE IV
AVAILABILITY OF MATERIALS AND LABOR

<u>Had to search to find material and labor</u>	<u>Number</u>	<u>Percentage</u>
only locally	62	52.0%
locally or in adjacent suburbs	50	42.0%
outside area but inside Boston area	4	2.5%
outside Massachusetts	5	3.5%
Totals	121	100.0%

Compiled from 121 answers to Question 34.

TABLE V
SOURCE OF HOUSE SITES

<u>Purchase</u>	<u>Number</u>	<u>Percent</u>
Directly from owner	43	37%
via Realtor	31	26%
From a friend	20	17%
From a relative	9	7.5%
<u>Non-Purchase</u>		
Gift or Inherited	11	11%
Others	4	3.5%
Totals	119	100%

Compiled from 119 answers to Question 30.

TABLE VI
OBTAINING HOUSE PLANS

<u>Method</u>	<u>Number</u>	<u>Percent</u>
Designed it myself	50	42%
Modified magazine plans	18	15%
Employed architect	15	12.5%
Plan service or magazine	14	12%
Employed draftsman	9	7.5%
House was precut	5	4%
Other	8	7%
Totals	119	100.0%

Compiled from 119 responses to Question 31.

TABLE VII
TYPE AND DIFFICULTIES OF
FINANCING THE OWNER BUILT HOUSE

<u>Type of Mortgage</u>	<u>Number</u>	<u>Percent</u>
Bank or Savings and Loan	107	89%
FHA - VA	2	2%
No mortgage	12	9%
Totals	121	100%
<u>Number of banks visited</u> <u>before mortgage granted.</u>		
1	86	81%
2	11	9%
3 or more	12	10%
Totals	109	100%

Compiled from answers to Questions 27 and 28.

TABLE VIII

PARTICIPATION IN CONSTRUCTION TASKS BY SUBURBAN OWNER BUILDERS

<u>Construction Task</u>	<u>Completed by</u>					
	<u>Self</u>		<u>Contracted</u>		<u>Mixed</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
1. Excavations and Footings	23	19.0%	68	56.0%	30	25.0%
2. Foundations	9	7.5%	103	85.0%	9	7.5%
3. Structural Framework	44	36.0%	55	46.0%	22	18.0%
4. Roofing System	44	36.0%	62	51.0%	15	13.0%
5. Roofing Finish	44	36.0%	62	51.0%	15	13.0%
6. Exterior Finish	47	39.0%	53	44.0%	21	17.0%
7. Interior Partitions	49	40.0%	50	42.0%	22	18.0%
8. Interior Finish	62	51.0%	26	21.0%	33	28.0%
9. Plumbing	9	7.5%	100	83.0%	12	9.5%
10. Heating System	19	16.0%	91	75.5%	11	8.5%
11. Electrical or Gas	21	17.0%	84	69.0%	16	14.0%
12. Clean-up	105	86.5%	7	6.0%	9	7.5%
13. Landscaping	97	80.0%	7	6.0%	17	14.9%
Totals	573	36.0%	768	49.0%	232	15.0%

Taken from 121 answers to Question 20.

TABLE IX

FINDING BUILDING SUBCONTRACTORS

<u>Source: Recommendations from</u>	<u>Number</u>	<u>Percent</u>
Friends or clients	83	48%
Other Subcontractors	21	12%
Relatives	20	11%
Material Suppliers	19	11%
Yellow Pages	15	9%
Watching Construction	8	5%
Architect or Banker	6	4%
Totals	172	100%

Compiled from 172 responses (some gave more than one response) to Question 23.

TABLE X

CRITERIA USED TO SELECT SUBCONTRACTORS

<u>Criterion</u>	<u>Number</u>	<u>Percent</u>
Quality Work	51	31%
Owner Builders' Opinions	39	24%
Personal Negotiations	33	20%
Friend or Relative	22	14%
Lowest Bidder	19	11%
Totals	164	100%

Compiled from 164 responses (some gave more than one answer) to Question 24.

TABLE XI

CRITERIA OWNER BUILDERS USED TO DECIDE WHETHER TO DO A CONSTRUCTION TASK

<u>Criteria Used</u>	<u>Number of Mentions</u>	<u>Percent</u>	<u>Single Criterion</u>	<u>Number of Mentions</u>	<u>Percent</u>
1. Personal Ability	51	43%	ability	34	65%
2. Time Involved	32	27%	time	5	10%
3. Costs or Savings	28	23%	costs	11	21%
4. License Required	6	5%	license	-	-
5. Control Quality	2	2%	quality	2	4%
Totals	119	100%		52	100%

Compiled from 119 answers to Question 35.

TABLE XII
CONSTRUCTION TIME FOR OWNER BUILDERS

<u>Number of months from excavation to occupancy</u>	<u>Number of cases</u>	<u>Percent</u>
one-three	8	6.6%
four	10	8.2%
five	9	7.4%
six	19	15.7%
seven	7	5.8%
eight	11	9.1%
nine	9	7.4%
ten	6	4.9%
eleven	2	1.6%
twelve	10	8.2%
thirteen	2	1.6%
fourteen	6	4.8%
fifteen	3	2.5%
eighteen	7	5.8%
twenty-two	1	.8%
twenty-four	9	7.4%
thirty-six	2	1.6%
Totals	121	100%

Compiled from 121 responses to Question 15.

TABLE XIII
ESTIMATED MAN HOURS MANAGING AND CONSTRUCTING

<u>Estimation of Owner Builder Hours</u>	<u>Number</u>	<u>Percent</u>
0-300	16	14.3%
301-500	14	12.5%
501-700	12	10.5%
701-900	12	10.5%
901-1200	15	13.5%
+ 1200	42	38.5%
Totals	121	100%

Compiled from 121 answers to Question 28.

TABLE XIV
OPPORTUNITY COST ON TIME TO OWNER BUILD

	<u>Number</u>	<u>Percent</u>
Held full time job	114	94%
Retired or part time job	7	6%
Totals	121	100%
Vacation used to build	58	48%
Vacation not used	63	52%
Totals	121	100%

Compiled from 121 answers to Questions 14 and 17.

TABLE XV
DIFFICULTIES IN OWNER BUILDING

<u>Problems with:</u>	<u>Number</u>	<u>Percent</u>
Administration of subcontractors:	40	40%
a. scheduling (21)		
b. quality or honesty (15)		
c. other administration (4)		
Design, Planning of Construction:	19	19%
a. proper house plan (10)		
b. keeping costs in line (7)		
c. permits (2)		
Doing Construction Tasks:	13	13%
Amount of Time or Responsibility	12	12%
Nothing (no difficulties)	12	12%
Family agreements	4	4%
Totals	100	100%

Compiled from 89 answers to the open-ended Question 32.
 Eleven answers fell into two categories.

TABLE XVI

OWNER BUILDERS SPEED OF OCCUPANCY

<u>Occupied House</u>	<u>Number</u>	<u>Percent</u>
After Completely Finished	45	38%
As Soon As Possible	17	14%
Before Interiors Finished	56	48%
Totals	118	100%

Compiled from 118 answers to Question 33.

TABLE XVII

OWNER BUILDING DIFFERENTLY THE SECOND TIME

<u>Would Change</u>	<u>Number</u>	<u>Percent</u>
Houseplan or style	34	37%
Little or nothing	18	21%
Less labor myself	14	14.5%
More labor myself	10	11%
Occupy when finished	6	6.5%
To higher quality labor	5	5.5%
Better construction schedule	4	4.5%
Totals	94	100%

Compiled from 101 affirmative answers, 91 of which gave explanations to the second half of Question 42.

TABLE XVIII

SATISFACTION WITH OWNER BUILDING

	<u>Yes</u>		<u>No</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Would owner build again	101	85%	17	15%
Recommend to other families	85	85%	15	15%

Compiled from 118 answers to Question 42, and 100 answers to Question 38.

TABLE XIX

OCCUPATIONS OF NEW HOME OWNERS AND OWNER BUILDERS

<u>Occupation</u>	<u>US Working Population</u> (a)	<u>New Home Owners</u> (b)	<u>Urban & Rural Owner Builders</u> (c)	<u>Suburban Sample of Owner Builders</u> (d)
<u>WHITE COLLAR</u>				
Prof, tech. and kindred	14.5%	23.6%	11.1%	19.0%
Mgrs., officials and proprietors	11.1%	17.3%	21.1%	17.0%
Clerical, sales	21.9%	11.7%	8.1%	15.0%
<u>BLUE COLLAR</u>				
Craftsmen, foremen, etc.	13.6%	16.1%	30.5%	21.0%
Operatives	17.8%	11.8%	12.8%	8.0%
Service wkrs.	9.1%	3.5%	4.7%	28.0%

Although the years of each study do not correspond, the shifts in percentage of national work force employed in any one category have not changed enough since 1960 to affect the comparisons.

- (a) Bureau of the Census, Department of Commerce, Statistical Abstracts of the United States, 1970, p. 226, Table 335.
- (b) Survey of Occupants of New Housing Units, 1968, Table 9, p. 51.
- (c) From unpublished data supplied through computer runs from the Survey of Occupants of New Housing Units - from 298 samples (14.2%) of the total sample of owner builders occupying new single family homes during the survey period.
- (d) Taken from 109 answers to a question concerning occupation of head of household and classified using Standard Industrial Classification Lists. Over one-third of the sample changed jobs after owner building, but only four to construction related occupations.

TABLE XX

HOUSEHOLD COMPOSITION AND MEDIAN AGE OF HOME OWNERS

	<u>Age of Sample Household Heads (e)</u> (median age)	<u>US Households (a)</u> (48)	<u>New Home Owners (b)</u> (38)	<u>All Owner Builders (c)</u> (36)	<u>Suburban Sample of Owner Builders(d)</u> (33)
<u>Composition</u>					
Couple only	(34)	31.1%	20.7%	18.1%	22.0%
Couple with:					
1 child	(29)	20.0%	19.4%	18.1%	14.0%
2 children	(35)	20.4%	27.1%	27.5%	33.0%
3 children	(33)	N.A.	17.1%	18.5%	14.0%
4 children	(40)	28.5%	8.5%	10.4%	10.0%
5 children	N.A.	N.A.	5.8%	5.7%	5.0%

(a), (b), (c), (d), see note at bottom of Table XIX.

(e), compiled from 100 answers to Question 6.

TABLE XXI
RESIDENCY WITHIN FIVE MILES
OF OWNER BUILT DWELLING

<u>Years of Residency</u>	<u>Number</u>	<u>Percent</u>
over 10	68	58.0%
7 - 10	6	5.0%
5 - 7	3	2.5%
3 - 5	11	9.5%
2 - 3	4	3.0%
less than 2	4	3.0%
never	22	19.0%
Totals	118	100.0%

Compiled from 118 answers to Question 12.

TABLE XXII
PLANNING TO INCREASE FAMILY SIZE

	<u>Number</u>	<u>Percent</u>	<u>Median Age</u>
Were planning to increase	40	33%	28
Were not planning to increase	81	67%	43
Totals	121	100%	

Compiled from answers to Questions 5 and 6.

TABLE XXIII

REASONS GIVEN BY OWNER BUILDERS FOR MOVING FROM THEIR PRIOR HOMES

BY

TENURE OF FAMILY PRIOR TO OWNER BUILT HOUSE

	<u>Rented Prior to Building</u>	<u>1-3 years</u>	<u>Owned 4-6 years</u>	<u>7-10 years</u>	<u>Over 10 years</u>	<u>Reasons Given for Moving</u>	
						<u>No.</u>	<u>%</u>
1. Desired home ownership	39					39	35.0%
2. Former house too small	10	3	10	7	10	40	36.0%
3. Bad neighborhood	1	1	4		2	8	7.2%
4. Too near relatives		1		1		2	1.8%
5. Forced (marriage & destruction)					1	1	0.9%
6. Desired to build my own	1				2	3	2.5%
7. Low quality of former house		1			1	2	1.8%
8. Former house too large		1			3	4	3.6%
9. Maintenance & taxes too high				1	2	3	2.5%
10. Change of business location			2		1	3	2.5%
11. Wanted new, single family house			2	1	4	7	6.2%
Number in each tenure class	51	7	18	10	26	112	100.0%
Percent of each tenure class	45.5%	6.3%	16.0%	9.0%	23.2%	112	100.0%

Compiled from 112 answers given to Questions 9 and 10.

TABLE XXIV

REASONS GIVEN FOR OWNER BUILDING INSTEAD OF BUYING

	Frequency of Responses					
	<u>costs</u>	<u>felt he had the ability</u>	<u>style</u>	<u>quality</u>	<u>desired to build</u>	<u>total</u>
No. of mentions	35	32	19	19	15	126
Percent	29%	26.5%	16%	16%	12.5%	100%

Compiled from 126 responses to Question 37.

TABLE XXV

FORMER OWNER BUILDERS AS A SOURCE OF INFORMATION

<u>Incidence of Contact</u>	<u>Center of Group</u>	<u>Number of Times</u>	<u>Percent per Class</u>
None	0	15	12%
1-3	2	22	18.5%
4-6	5	17	14%
7-9	8	13	11%
10-15	13	22	18.5%
16-20	18	1	1%
over 20	26	29	24.6%
	Totals	119	100%

Compiled from 119 answers to Question 41.

TABLE XXVI

QUALIFICATIONS ON THE RECOMMENDATION TO OWNER BUILD

<u>The owner building family should:</u>	<u>Number</u>	<u>Percent</u>
Have construction skills	33	36%
Be hardworking, persevering, etc.	24	26%
Be young and/or healthy	15	16%
Wish to save money	9	10%
Be a close family	7	7.5%
Want a feeling of accomplishment	4	4.5%
	Totals	92
		100%

Compiled from 85 affirmative answers to Question 38.

TABLE XXVII
ESTIMATION OF OWNER BUILDERS SAVINGS

<u>Estimation of Percent of Construction Costs Saved</u>	<u>Number</u>	<u>Percent</u>
0-10%	2	2%
11-20%	23	23%
21-30%	31	31%
31-40%	21	21%
41-50%	11	11%
51-60%	12	12%
	<hr/>	<hr/>
Totals	100	100%

Comiled from 100 answers to Question 22.

TABLE XXVIII
EQUITY PER HOUR IN OWNER BUILDING
(Based on 1900 Sq. Ft. House for Sale at \$30,400)

	<u>Owner Builder Saves</u>		
	<u>20%</u> (\$6,080)	<u>25%</u> (\$7,600)	<u>30%</u> (\$9,120)
<u>Number of Man-Hours Worked</u>	<u>Equity per Hour</u>		
1200	\$5.06	\$6.35	\$7.60
1050	\$5.79	\$7.23	\$8.68
900	\$6.75	\$8.33	\$10.13

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