

ATTITUDES AND PERCEPTIONS TOWARD INCREMENTAL  
BUILDING AS A FAMILY HOUSING ALTERNATIVE

By

BETTY MALONE FULWOOD

Bachelor of Science in Home Economics  
Mississippi State College for Women  
Columbus, Mississippi  
1952

Master of Arts  
The University of Mississippi  
Oxford, Mississippi  
1973

Submitted to the Faculty of the Graduate College  
of the Oklahoma State University  
in partial fulfillment of the requirements  
for the Degree of  
DOCTOR OF EDUCATION  
December, 1980

1980 D  
F975a  
cop. 2



ATTITUDES AND PERCEPTIONS TOWARD INCREMENTAL  
BUILDING AS A FAMILY HOUSING ALTERNATIVE

Thesis Approved:

*Anna M. Gorman*  
\_\_\_\_\_  
Thesis Adviser

*Elaine Jorgenson*  
\_\_\_\_\_

*Christine J. Salmeron*  
\_\_\_\_\_

*Donald E. Allen*  
\_\_\_\_\_

*K. Kay Stewart*  
\_\_\_\_\_

*Norman A. Durkin*  
\_\_\_\_\_  
Dean of the Graduate College

## ACKNOWLEDGMENTS

This study is concerned with the analysis of attitudes and perceptions of families toward building family housing by pre-planned stages. With the need today for affordable housing, the author hopes that this investigation will precede and precipitate further development and use of incremental building in helping to meet family housing needs.

Assistance and encouragement during this endeavor was rendered by many persons and the author gratefully acknowledges the help of each and every one. Among them are two dear friends--Pat Nelson and Pat Alexander-Elmore--who alternately encouraged, prodded, and tolerated as the occasion demanded. Appreciation is extended also to Irma Manning, Bertha Nickel, Mary Dee Dickerson, Jeannine Martin, Florence Nash, and others whom space precludes naming, for the many favors and support extended during the author's period of study at Oklahoma State University. Special thanks go to a superb committee--Drs. Kay Stewart, Elaine Jorgenson, Donald Allen, and Mrs. Christine Salmon--for their interest and help; and most especially, to Dr. Anna Gorman, whose patience, guidance, and encouragement never faltered. Acknowledgment is made to Tim Coburn, Bill Replogle, and Dr. Bob Cage for advice on statistical and sampling procedures, and to other persons at The University of Mississippi, including a former student, Melissa Oliphant, for help in various ways. Not to be overlooked is

the contribution made by respondents, contractors, and others in the counties in which the survey was conducted, and by the employees of Oklahoma State University, who pilot-tested the structured interview schedule.

Appreciation is also extended to Condé-Nast Publications, Inc., and to House Plan Headquarters, both of New York, and to Glenn Albritton, of Jackson, Mississippi, for permission to use their house plans in the research and report of findings.

Finally, the author extends personal gratitude to her parents for starting her on the road to higher education, and to her children, Leigh and Renee, whose love, understanding, and help with everything from taking care of each other and doing more than their share of household chores at times, to chauffeuring and providing moral support during hours of interviewing, editing schedules, and writing, made the effort easier and worthwhile.

## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION . . . . .	1
Purposes and Objectives . . . . .	4
Hypotheses. . . . .	5
Assumptions and Limitations . . . . .	6
Definition of Terms . . . . .	7
Organization of the Study . . . . .	10
II. REVIEW OF THE LITERATURE . . . . .	11
Housing Needs, Values and Norms . . . . .	11
Indicators and Modifiers of Housing Needs. . . . .	11
Housing Values and Preferences . . . . .	15
Family and Cultural Norms. . . . .	16
Family Housing Adjustment . . . . .	18
Residential Mobility . . . . .	18
Residential Adaptation . . . . .	20
Constraints. . . . .	22
Recent Developments in Flexible and Low-Cost Housing . . . . .	25
Mobile Homes . . . . .	25
Modular. . . . .	26
Adaptable and Extendable Houses. . . . .	27
Owner-Built Houses . . . . .	29
III. RESEARCH METHODOLOGY . . . . .	32
Population and Sample Selection . . . . .	32
Description of the Instrument . . . . .	35
Collection of Data. . . . .	37
Analysis of Data. . . . .	38
Frequency Distributions. . . . .	38
Chi Square Analysis. . . . .	39
Multiple Discriminant Analysis . . . . .	39
IV. ANALYSIS OF DATA . . . . .	40
Descriptive Analysis. . . . .	40
Description of Respondents . . . . .	42
Prior Awareness and Interest of Respondents in Incremental Building. . . . .	47

Chapter	Page
Association of Household Characteristics With Choice . . . . .	48
Family Type . . . . .	48
Level of Income . . . . .	51
Educational Level . . . . .	51
Race . . . . .	52
Location of Current Residence . . . . .	52
Housing Type of Current Residence . . . . .	53
Housing Tenure . . . . .	54
Expectations for Moving . . . . .	54
Multiple Discriminant Analysis . . . . .	54
Relative Discriminant Ability . . . . .	57
Group Means for Each Variable . . . . .	60
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . .	65
Purposes and Objectives . . . . .	65
Discussion of Findings . . . . .	66
Conclusions . . . . .	71
Recommendations . . . . .	72
REFERENCES . . . . .	75
APPENDIXES . . . . .	79
APPENDIX A - STRUCTURED INTERVIEW SCHEDULE: INCRE- MENTAL BUILDING . . . . .	80
APPENDIX B - GRAPHIC PRESENTATIONS USED IN THE INTER- VIEW . . . . .	90

## LIST OF TABLES

Table	Page
I. Sample Distribution and Comparison of Social and Economic Characteristics of Selected Counties With State. . . . .	41
II. Distribution of Personal Characteristics of the Sample . . . . .	43
III. Distribution of Household Characteristics of the Sample . . . . .	44
IV. Percentage of Respondents for Each Item and Chi Square Values for Attitude and Household Characteristics. . .	49
V. Discriminant Analysis Showing Centroids for Each Group for Each Function. . . . .	57
VI. Discriminant Analysis Relating Advantage-Disadvantage Variables to Opinion Classifications . . . . .	58
VII. Means of Each Group for Each Variable. . . . .	61



## CHAPTER I

### INTRODUCTION

Owning a home of one's own is generally conceded to be "The American Dream." Enmeshed with traditional values of freedom and independence and promoted by business, government, and society, the free-standing house with its own plot of land has become the ideal toward which most Americans strive. Indeed, previous studies of housing preferences have found, without exception, that the detached single-family house, preferably owned, is the strong choice of all sub-groups of the population (Michelson, 1968).

This housing aspiration, however, has become increasingly difficult for many families to attain. Decreasing resources, increasing population density, greater complexity of social and economic systems and rapidly escalating costs have combined to place serious constraints on the single-family house as an achievable option.

Of these constraints, cost appears to be the one most pertinent to the individual family. Edwards (1972, p. 1) states that "Regardless of what people want [in housing], the economic factor is of greatest influence." Costs of owning a house have been one of the most inflationary components of the consumer price index for the 1960-1970 decade (Main, 1976, p. 216), and this trend has continued through the 1970s. Mattill (1976, p. 72) claims that of the 13 million American households considered housing-deprived in 1970, almost half had been placed

in that category because their housing cost more than 25 percent of their total budget. Using the formula that the purchase price of a house should be no more than twice the buyer's annual income, the Joint Center for Urban Studies of Massachusetts Institute of Technology and Harvard University estimates that in 1977 fewer than three out of ten families could afford a median-priced new house (House prices, 1978). By 1978 the median sales price of a new, one-family house had risen to \$55,700, almost quadruple the median household income of \$15,064 for that year (U.S. Bureau of Census, Series C-25 and Series P-60, 1980).

This kind of housing inflation can have serious social effects on the family in addition to causing personal privation. It is apparent that some adjustment must be made. Either families will be forced to accept housing which differs from their aspirations and expectations, or a way must be found through which families can attain the desired housing without undue strain on their resources.

There are many families for whom the detached house with its own plot of land is not only desirable but, because of location and other factors, is their only feasible alternative. This problem appears particularly salient for families in rural areas and for families in the child-rearing stage of the family life cycle. These families need a way to attain single-family housing that is adequate in size, quality, and other respects, is compatible with their long-range goals, yet is within their means and capability to attain.

In the past it has often been expedient for families to begin with a small house and add on or extend it as space needs dictated

and resources permitted. Over the years, changes in building technology, increasing land use controls, and other regulations which call for high initial standards have made adding-on a less frequently used solution to housing needs (Rabenek, Sheppard, and Town, 1974a). However, in view of current economic conditions, could extendable housing again provide a viable option for many families needing and/or wanting single-family housing? Beginning with a small unit which provides necessary services and which is designed to facilitate additions, the house could grow as family demands and resources dictate. This method of building incrementally would enable a family to begin with a relatively small investment and spread the construction and concomitant costs over an extended period of time. In addition, it would provide the opportunity to design for specific fit for a given family. Theoretically, a family could modify their housing to meet their housing needs as those needs become salient, without moving and with less expense than in remodeling a closed entity.

Though add-on construction is not new, changes in social and economic conditions give it different dimensions from earlier times. The concept of starting with a small unit and deliberately planning for future additions is a unique approach to coordinating housing needs with resources which families today may overlook or of which they may be unaware. Do families today consider building incrementally when making housing decisions? Are there families to whom building in incremental stages would be an attractive option? If so, can they be identified by peculiar socio-economic characteristics? What advantages and disadvantages of building in increments are perceived which would affect

its acceptance or rejection as a housing alternative? These are questions which this research has addressed.

On the premise that any housing form or process must be viewed as desirable if it is to be accepted, investigation of the acceptability of building by increments seemed indicated as a basis for its further development. Though occasional articles featuring plans for building by stages were found in current periodicals, the researcher found no studies concerning the acceptability of or impediments to its use. It appeared important to explore this option because of its potential for coordinating housing needs with family resources, for making home ownership available to those of limited means, and for the possibility of design individualization and flexibility which would increase satisfaction and use-life of the dwelling to the family. Answers to the above questions have potential benefits for both consumers and producers of housing, as well as for educators and others involved in helping families to make housing decisions. Such information would give insight as to whether and for whom incremental building would provide a viable housing alternative, and illuminate opportunities and constraints relevant to its use.

#### Purposes and Objectives

The purpose of this study was to investigate attitudes and perceptions of families toward building by incremental stages as a way of meeting family housing needs in the existing socio-economic milieu. Opinion of building incrementally as compared with other specified means for attaining ownership of single-family housing was determined and

examined in terms of specified household characteristics. Opinion of alternatives for attaining ownership of single-family housing was also examined in relation to perceptions of the advantages and disadvantages of building by incremental stages.

The specific objectives of this study were

1. To determine whether attitude toward building incrementally is associated with selected characteristics of households, and,
2. To determine what perceptions of advantages and disadvantages discriminate among families expressing preference for building incrementally, those expressing preference for deferring purchase and/or mortgaging to buy or build a completed house, and those expressing preference for buying a mobile home as the means for attaining ownership of single-family housing.

### Hypotheses

The null hypotheses tested by collection and analysis of the data were as follows:

- $H_1$ : There is no significant difference among households categorized by attitude favoring building by incremental stages, or deferring purchase/mortgaging for a completed house, or buying a mobile home as the preferred way to attain owned single-family housing in terms of each of the following household characteristics:
- a. family type
  - b. level of income

- c. educational level
- d. race
- e. location of current residence
- f. housing type of current residence
- g. achieved housing tenure
- h. expectations for moving

H<sub>2</sub>: There is no significant difference in perceptions of advantages and disadvantages of building incrementally among households expressing preference for building in incremental stages, or for deferring/mortgaging for a completed house, or for buying a mobile home as their opinion of the better way to attain owned single-family housing.

#### Assumptions and Limitations

In the preparation of this study, the following assumptions were made: It was assumed that (1) responses of participating families are true indicators of their opinions and perceptions, and (2) the distribution of housing values and aspirations of participating families is similar to those identified by prior studies for the general population. Particularly basic to this study is the assumption that owned, single-family detached housing is the housing preference of participating families. For the discriminant analysis, multivariate normality of the distributions and equal dispersion and covariate structures for the three groups are also assumed.

The study was limited to a relatively small geographic area to be compatible with available funds and time. To increase the generalization of findings, an area was selected through a combination of sampling

techniques to approximate a larger population as closely as possible. An age limit of 18 to 55 years for the household head or heads was imposed for subjects to be included in the study. Advantages and disadvantages examined through the interview schedule were limited to those which the researcher judged to be most pertinent to the concept of incremental building.

### Definition of Terms

The following definitions explain how certain terms are used in this study:

Incremental building - referred to as pre-planned add-ons in the interview with subjects, is defined as a series of additions, an increasing or enlargement with a corresponding change in the value of the dependent function (Webster's New Collegiate Dictionary, 1953). In this study the term is used specifically to mean that only a part of the total design concept for a residence is constructed at one time, beginning with a core unit which provides necessary services for sleeping, cooking, and bathing, with other portions added in planned stages of one, two, three, or more increments. This definition, stressing the difference between pre-planning additions and remodeling as a later decision, is to be carefully explained to the subjects at the beginning of the interview.

Households - the primary sampling units for this study rather than individuals, since housing adjustment behavior is ordinarily a group rather than an individual action (Rossi, 1955). The United States Bureau of Census' definition of households was observed, defining

households as everyone living in a housing unit in which tenants do not live and eat with any other person in the structure and in which there is either (1) direct access from the outside of the building or through a common hall, or (2) complete kitchen facilities for the use of the occupants (Sudman, 1976, p. 13).

Family - refers to any group of individuals who make collective housing decisions or to single person households (Angell, 1976, p. 253). The terms "family" and "household" are used interchangeably in this study.

Urban population - in accordance with the definition adopted for use in the 1970 census, comprises all persons living in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas (U.S. Bureau of Census, 1973).

Suburban population - refers to those persons living within two miles of the corporate limits of a town or city of 2,500 or more inhabitants. Due to the small number in the sample, these subjects have been combined with the urban sample for tabulation and analysis purposes.

Rural population - refers to all persons living in places smaller than 2,500 inhabitants, in open country more than two miles from the corporate limits of places of 2,500 or more inhabitants, or on farms.

Family type - refers to one of six classifications into which all households in this study were placed: (1) single person, under 35; (2) childless couple, wife under 35; (3) nuclear family, oldest child under six; (4) nuclear family, children of mixed ages; (5) couple or single, past 35, no children at home; and (6) single parent, minor children living at home. This is a selective composite of household types



from the literature (Duvall, 1967; Rossi, 1955; Foote, Abu-Lughod, Foley, and Winnick, 1960), of life cycle stages and changes in family composition which exert a different demand on housing.

Educational level of the household is interpreted as the highest formal education completed by either husband or wife where both are present in the household.

Housing type - refers to structural types: single-family detached conventional houses, mobile homes, duplexes, townhouses, and apartments. Because of the small number of structural types other than single-family conventional houses in the sample, types were grouped for analysis purposes into single-family conventional, mobile homes, and multi-family dwellings.

Attitude - in this study, refers to the respondents' opinion, preference, or inclination in regard to an idea or object in his total environment. The terms "attitude," "opinion," and "preference" are used interchangeably in this study. This is consistent with Uhl and Shoner (1969, p. 296), who refer to attitudes as "respondents' views or feelings toward some phenomenon," while opinions are "verbal expressions of attitudes." Churchill (1979, p. 158) also treats attitudes and opinions interchangeably "as representing a person's ideas, convictions, or liking with respect to a specific object or idea," and states that "attitude is one of the more important notions in marketing literature since it is generally felt that a person's attitudes will be related to the individual's behavior."

Expectation of Mobility is used in this study to mean moving from the community of current residence to another, rather than moving to another house within the same community.

## Organization of the Study

This study is organized into five chapters. Chapter I provides (1) an introduction to the problem, (2) a statement of specific objectives, (3) the hypotheses to be tested, (4) recognition of assumptions and limitations, and (5) definitions of terminology pertinent to the study.

Chapter II is a review of literature relevant to the concept of building in incremental stages, including (1) housing needs, values, and norms, (2) theories of housing adjustment, and (3) recent developments in flexible and low cost housing. The researcher has found no studies directly related to incremental building.

Chapter III describes the research methodology and procedures used in developing the instrument, selecting the population and the sample, and collecting and analyzing the data. Chapter IV describes the results of the study. Descriptive and sampling statistics from the data analyses are discussed. Chapter V summarizes the study in terms of objectives and further interprets results. Conclusions and recommendations are proposed.

## CHAPTER II

### REVIEW OF THE LITERATURE

The literature concerning incremental building is quite limited. The review of literature reported here is concerned with housing needs, values and norms, theories of housing adjustment behavior, and recent developments in flexible and low-cost housing.

#### Housing Needs, Values and Norms

Every family is unique and has needs in housing which are peculiar to its own socio-psychological and financial quality of life. Past efforts to discover commonalities and principles which would help achieve better adjustment between houses and families have encountered difficulties in defining quality of life and in specifying what it is about family life that researchers want to relate to housing (Dean, 1953). There are, however, some indicators of housing needs and commonalities in family living that are pertinent to the design and production of residential housing.

#### Indicators and Modifiers of Housing Needs

Several social factors are believed to influence family needs and choices in housing. One important influence is stage in the life cycle; others are socio-economic status and lifestyle.

Family Life Cycle. Michelson (1968, p. 38) states that where a

person stands in the sequence of childhood, marriage, parenthood, and later life is often a better indicator than age alone, and provides the major clue to housing needs and preferences. With minor variations most of the literature defines stages of the family life cycle and describes the housing needs typical of each stage as: (1) The beginning or pre-marriage and pre-child family. This may be a single person or a young couple establishing a new household. This family typically has limited financial resources, and housing requirements for privacy, independence, and low cost. (2) The expanding or child-bearing family, when the care, growth, and development of infants and young children greatly change family living patterns and increase demands on the dwelling. Housing requirements are for additional bedroom and play space, efficient work areas, and increased entertaining in the home. Financial resources generally rise, but demands on resources also rise. (3) The child-rearing period, while children are growing up, and after home-ownership is achieved, is usually a stable period for housing. Neighborhood friends and community activities are sources of satisfactions, and the family adjusts to housing space and amenities that are often less than desired. (4) The launching family, when adolescents and young adults increase demands for space, is when separate areas for adolescents and parents are desirable. Housing gains importance as a symbol of the family's economic achievement and social standing and a larger, more individualized house is generally sought. (5) The middle-aged or post-child family is when space needs begin to contract. The large house, however, is usually retained to accommodate visits of children and grandchildren, accumulated possessions and

increased social activities of the wife, or because of reluctance to relinquish satisfactions provided by the house and/or neighborhood.

(6) The aging family, when income and physical vigor usually decline, and one spouse may be left alone. Housing requirements for space are reduced, and the aged family must eventually adjust its housing to meet needs for safety, security, ease of maintenance, and proximity of health and other services and/or friends and relatives (Foote, Abu-Lughod, Foley, and Winnick, 1960; Agan and Luchsinger, 1965).

Abu-Lughod in Foote et al. (1960) states that:

Although analysis of the family cycle is based on well-documented published studies, there are no comparable statistical analyses of the 'housing cycle,' i.e., the progression of housing choices made by families at each stage of expansion, change, and contraction (p. 97).

Kern (1975) delineates only three family-life stages particularly relevant to housing needs. These are the early, the crowded, and the late periods, with each stage representing a different requirement for building space. He suggests that young couples need only a core unit for cooking, living, sleeping, and bathing, and that as the family size waxes and wanes, space can first be added to this core and later subdivided to accommodate activities occurring in later years.

Rossi (1955) finds that housing needs are determined primarily by composition of the household. He claims that life cycle changes characterized by rapid increase in family size in the early years, a period of relative stability in middle years, and decreasing size in later years, stress space requirements as the most important of the needs which must be met by housing. He suggests that a home can either satisfy, frustrate, or over-fulfill the housing needs a family may have, and that in terms of accommodating the changing needs of a family, a

large dwelling can fulfill the space needs of a family through many life cycle changes, while a small unit is congenial only to the earliest and final stages.

Socio-Economic Class. Previous studies have found very little difference between the housing aspirations of lower socio-economic classes in America and those of the middle class (Montgomery and McCabe, 1973; Stewart, 1973), although some differences in design due to social class lifestyles are indicated (Barnes, 1972). The single-family detached house, preferably owned, is the type of housing desired by an overwhelming majority of American families (Michelson, 1968; Cooper, 1976). This appears to be true of all socio-economic classes regardless of their current location and tenure. This appears to be true of all socio-economic classes regardless of their current location and tenure. Differences in aspirations and expectations in housing due to place of residence have been investigated by Montgomery and Kivlin (1962), and McCray and Day (1977). The former, a study of college students, finds little difference in either desires or expectations of rural and non-rural students, or between those from families having higher and lower socio-economic status. McCray and Day, who compared low-income rural with low-income urban families, find values and aspirations of both groups to be similar, but expectations for achieving those aspirations higher for urban than for rural residents. Michelson (1970) finds neither occupation nor educational level to be a significant factor in desired housing, and concludes that, although financial resources may place constraints on behavior, no significant differences in the preferred form of homes, neighborhoods, and cities have been shown related to social class differences.

### Housing Values and Preferences

In addition to social and economic factors, an important characteristic influencing housing needs is that of personal value orientation. Beyer (1965) differentiates between values and preferences affecting housing choice by describing preferences as based on an individual's range of experiences, while values represent the basic qualities of people and tend to endure. Nine housing-related values have been identified and studied through research at Cornell University. These values tend to cluster into four groups--economy, family centrism, personal, and prestige. Individuals having dominant orientations in the different clusters of values give evidence of having different characteristics important to housing choice and satisfactions (Beyer, 1965, pp. 62-66). There is some evidence which supports the theory that dominant housing values are related to stage in the family life cycle. Findings by Stoeckeler and Hasegarva (1974) support the hypothesis that individuals arrange their hierarchies of a set of personal values depending on the situation in which they are applying them.

Dean (1953) suggests that instead of trying to relate housing design to housing values, one should relate the whole socio-housing environment to the resident's total scheme of values. Taylor (1973) goes a step further and states

The place of housing in an individual's hierarchy of values will affect his personal definition of housing need and his long term aspirations. The evidence does not suggest that housing always comes high in this hierarchy (p. 732).

She is concerned for the architect's social philosophy--whether architects should adopt an advocacy role, whether they should find out what

people want and design accordingly, or whether they should build in such a manner as to leave design decisions to the individual. She states that methods must be found for the individual to identify and achieve his or her own housing goals within the system (for designing and producing housing).

### Family and Cultural Norms

Dubos (1976, p. 9) suggests that essential needs for shelter are small, but that the phrase "essential needs" may be meaningless "because in practice people need what they want." He states that needs are determined less by the biological environment of man than by the social environment in which he lives and has been reared. Members of a given social group generally come to desire, and consequently develop a need for whatever is necessary for acceptance in the group.

Glazer (1973) also suggests that the question of housing needs and criteria for adequate housing for the family is not as simple as it appears. He writes:

If we are interested in the relationship between housing and the family, the issue may not be whether housing, in terms of any world or absolute standard, is adequate . . . it may be, where does one's housing stand in terms of the standards of the system, and what does falling behind that standard mean? In a society in which quarter-acre lots become norm, anything less will be correlated with a whole range of measures of poor health, family instability, and social disorganization (p. 164).

Morris and Winter (1975, pp. 82-83) also equate housing needs with cultural norms, positing that "housing needs do not derive from minimum shelter requirements or minimum health and safety standards in any absolute sense, but derive from cultural standards against which actual housing conditions are judged." Their position is that it is



preferable to base the idea of changing housing needs on the progression of norms that govern a family's behavior as its composition changes, rather than viewing changing family composition as directly responsible for changes in housing needs. They suggest a five-fold classification of norms which the family seeks in the housing adjustment process: (1) housing space norms, (2) tenure norms, (3) structure type norms, (4) quality norms, and (5) neighborhood and location norms. Space norms are described as provision of various activities typically conducted in the house and are especially prescriptive in defining the number of bedrooms needed (Morris and Winter, 1975; Gladhart, 1973).

Tenure norms favor home ownership; structure norms are for single-family detached structures; location norms are for neighborhoods primarily residential and homogeneous in character. Quality norms vary but are congruent with income (Morris and Winter, 1975, pp. 82-83).

Features of the house described in the literature as the middle-class norm are that it is relatively new, brick, one-story or split-level. It has three or more bedrooms, two or more bathrooms, living room, dining room, family room, kitchen and utility areas furnished with various mechanical equipment, and central heat and air conditioning (Montgomery and McCabe, 1973; McCray and Day, 1977; Stewart, 1973).

Morris and Winter (1978, pp. 25-28) specify three sets of norms--cultural, community, and family--which enter into the evaluation of housing. Norms regarding different qualities vary in terms of the range of permissible deviation and in severity of negative sanctions. Deviation from norms is often permitted in response to circumstances viewed as extenuating. While preferences are described as a temporary state of mind representing the quantity and quality of good the consumer

prefers to buy relative to all other possible quantities and qualities of the good, norms are relatively fixed. They may change, however, in response to the chronic existence of problems or in response to changes in technology or economic conditions or through progression in the norms that apply to a family as it passes through the family life cycle. "The norm does not change, the family changes by moving to a later point in the cycle. Therefore, different norms apply to it" (Morris and Winter, 1978, p. 28).

### Family Housing Adjustment

Behavior of families in attempting to meet changing needs for housing as they grow and decline has been explained as an adjustment process. Morris and Winter (1975) state that families more or less continuously evaluate their housing in terms of family and cultural norms for the life cycle stage in which the family is at the time. If the family's actual housing conditions vary markedly enough from what they and society think they ought to have, housing satisfaction is reduced, and some kind of housing adjustment behavior will tend to occur. A family experiencing maladjustment has the alternatives of moving, altering their dwelling, altering their family, or reducing their norms.

### Residential Mobility

Of the possible responses to housing maladjustment, residential mobility is the most prevalent, with approximately 20 percent of all Americans moving one or more times each year (Rossi, 1955; Butler, Chapin, Hemmens, Kaiser, Stegman, and Weiss, 1969; Foote et al., 1960; Angell, 1976). It is important to distinguish between mobility and

migration. Migration occurs because of job changes, desire for different climate, or other reasons not directly related to housing. Approximately 13 percent of the annual moves, however, are short distance moves, having housing adjustment as the primary motivating factor (Foote et al. 1960, p. 134). Under normal conditions, short-range mobility may reflect consumer attitudes toward housing. Rossi (1955), in one of the first major studies of why people move, finds that mobility occurs when the amount of space provided by the dwelling is maladjusted to the amount needed by the family. The importance of space needs in precipitating mobility is supported in a study of metropolitan households by Butler et al. (1969) in which a strong pattern is seen toward increasing the size of the dwelling and the number of rooms by moving. Both Rossi (1955) and Butler et al. (1969) find a strong flow from renter to owner status and to the single-family structure type.

The most consistently reported relationship to residential mobility is that of life cycle indicators, particularly age and family type. Mobility is found to be highest for those family heads who are age 24 and under, remains high for those age 25 to 34, and decreases rapidly for older groups. Both Rossi (1955) and Butler et al. (1969) find that two-parent families with children are the most mobile of all household types, with families whose eldest child is age six or under being more mobile than others. This may be interpreted as the stage at which maladjustment of housing needs with housing conditions is most salient.

Even though mobility is the most prevalent form of housing adjustment behavior, it is a costly and sometimes inconvenient response to a housing deficit. Abu-Lughod and Foley (Foote et al., 1960) contend

that mobility is in itself destructive, wasting resources, speeding deterioration, and disorganizing to the community. Foote (1960, p. xxiv) states that "moving from house to house costs the consumer so much time and money as seriously to deter more fitting distribution of available space." The literature does not indicate how many of the families who choose to move perceive or consider other options or to what extent their choice is limited by difficulty or cost of remodeling.

### Residential Adaptation

Residential alterations, as a means for adjusting housing to needs, may range from merely changing the functions of rooms to major remodeling or making additions to the current dwelling. There are few studies or data available which describe the scope, prevalence, and resultant satisfactions of this form of housing adjustment behavior. Part of the problem is that of making a distinction between improvements and maintenance; another is the practice of collecting information on expenditures rather than kinds and frequency of improvement activities (Morris and Winter, 1978, p. 192). Alterations which do not involve cost, such as changing the use of space, and those done with self-help labor are often missed in these data. The annual Bureau of Census reports are limited to data on remodeling expenditures for single-family, owner-occupied homes. The data for 1975 indicate an increase in the total amount spent for upkeep and improvements over that spent in 1974, and an acceleration of residential alterations by higher income families during 1973, 1974, and 1975 (U.S. Bureau of Census, 1975).

Morris and Winter (1978, pp. 201-203) report a steady increase since 1965 in number of dollars spent on alterations by owners of single-family dwellings, even when adjusted for inflation during that period. They further report an inverse relationship of alterations and additions with new housing starts, supporting the belief that residential adaptation substitutes for mobility in housing adjustment behavior. It is widely believed that when prices and mortgage costs for new housing rise, families tend to improve their existing shelter rather than to move. Hill, Foote, Aldous, Carlson, and MacDonald (1970) have established renovating as substitutive rather than linked to mobility, though one does not preclude the other. Bross (1975), however, finds that people making additions and renovations are also more likely to desire to move. She also finds no evidence that adaptations raise the level of satisfaction with the dwelling unit. This suggests that neighborhood satisfaction may be the key factor in whether or not residential adaptation is chosen over mobility as adjustment behavior. It also indicates that residential adaptation may be chosen because it is less costly than moving, though some reduction of norms may be entailed.

In analyzing research on residential alterations for causal relationships and behavior patterns, Morris and Winter (1978, pp. 196-200) find a pattern emerging for residential mobility early in the life cycle as the family attempts to achieve structure-type, tenure, and neighborhood norms. The pattern changes to residential alteration in the middle years, but, when separated, those alterations involving additions are desired by younger families with children under 18 years of age.

Relationships between socio-economic status and alterations are somewhat mixed. Middle-class families indicate more improvement activities than either upper- or lower-class groups, but the reverse is true regarding educational level. There is tentative support for deficits in space and quality norms as predictors of alteration behavior.

"Younger families tend to remodel to create more useable space or to add comfort to an otherwise satisfactory dwelling" (Morris and Winter, 1978, p. 199). Hill et al. (1970), in a study of three generations of families, finds more families in the older generation undertaking renovations of their quarters than choosing to move, suggesting that this may be their way of adjusting housing to need. Hill also finds that only 55 percent of the renovations are pre-planned, from which the inference may be drawn that housing adaptations may hinge on economic or other developments of extrafamilial nature.

### Constraints

To precipitate any adjustment behavior, a deviation from the norm must first be perceived by the family, must be important to the family, and the family must be able to overcome any constraints which impede or prevent action. Morris and Winter (1975) identify three kinds of constraints: (1) intrafamilial strengths and weaknesses in decision-making; (2) economic, social, and political factors; and (3) attractive features of the dwelling. They hypothesize that a combination of the norms, the family's current housing conditions, and the constraints combine to produce two kinds of preferences--those for a specific type of housing adjustment behavior, and those for a particular type of housing. Angell (1976) claims that research has not provided conclusive

evidence that the consumer attaches greater importance to tenure considerations than to structural types, but that recent trends toward mobile homes and cooperative and condominium townhouses and apartments suggest that structure norms are compromised first.

In deciding which housing adjustment behavior to employ to reduce their housing deficit, families go through a process of analyzing their options, resources, and constraints. Angell (1976) attempts to simplify the complex and interrelated set of housing alternatives in a decision making model which classifies alternatives according to their nature and type. He lists six broad ranges of consumer housing alternatives as:

1. Move or Not to Move?--Move to another dwelling, or not move and remodel, or not move and adapt?
2. If Remodeling . . . rehabilitate or add?
3. If Moving . . . to build, buy, or rent?
4. If Building or Remodeling . . . Owner or contract? Use stick-building, pre-cut, panelized or modular construction?
5. If Buying . . . Fee simple, condominium, or cooperative ownership?
6. If Buying or Renting . . . New or existing? Detached house, mobile home, townhouse, or apartment? (p. 254).

Intrafamilial constraints refer mainly to the family's failure to achieve consensus on decisions. Economic and political constraints pertinent to building incrementally are briefly treated here.

Political Constraints. Political constraints exist mainly in the form of restrictive governmental standards and controls. Local, state, and federal governments impose standards of construction and occupancy that impinge on personal choice in the interest of the health and

safety of the general public. Building codes that specify materials and construction methods may add to cost and prohibit self-help construction. Many subdivisions have covenants that specify minimum size of the structure and other standards which would prohibit incremental building in some localities. This has implications for the choice of building by stages in that families choosing this method would have to locate in an area with few regulations, or even that regulations may have to be changed to permit building by stages.

Economic Constraints. Economic constraints of a general nature may result from scarcity and cost of mortgage money and from reluctance of lending institutions to loan money for deviate or unfinished structures. Incrementally built houses might be considered unfinished during the first stages by some mortgage lenders. Oddly enough, conventional loans provide more flexibility than government-insured loans for tailoring a loan to fit the borrower's needs. Recent information indicates that, while the Federal Housing Administration and Veterans Administration assist the purchase of one out of every three developer-built homes through mortgage insurance, they perform this service for only one out of seventeen owner-built homes (Grindley, 1972, p. 5). In addition, the Federal Housing Administration and Veterans Administration will not accept unfinished houses, while, within limitations, commercial and savings and loan banks will (Stevens, 1976). Thus it appears that financing of incrementally built houses may entail more complicated loan arrangements and more sophisticated knowledge by families proposing to build incrementally.



## Recent Developments in Flexible and Low-Cost Housing

The need for housing which is flexible enough to respond to human needs is recognized by leaders in the housing field, both in the United States and abroad. In the absence of specific research on building by incremental stages, some of the ways in which individuals, families, and the housing industry are endeavoring to provide low cost and/or flexible shelter are briefly described here.

### Mobile Homes

One solution to the increasing cost of conventional single-family housing which has gained increased usage in recent years is that of mobile homes. Although in 1970 mobile homes accounted for only three percent of the nation's housing stock, since that time the proportion of mobile homes has doubled, while single-family houses and apartments have increased by only 10 percent (Angell, 1976, p. 270). One-fourth to one-third of new housing starts in recent years have been mobile homes, with over 90 percent of the homes which sell for less than \$15,000 and 80 percent of those which sell for less than \$20,000 being mobile homes (Edwards, 1972). Angell (1976) attributes the rapid growth of this type of housing to the increased formation of households by young people, and the inability of the nation's housing industry to produce housing affordable by young families and others having incomes below the national average. He also calls attention to the fact that approximately 10 percent of mobile home buyers are farmers, many of whom find other housing alternatives impractical because of cost or nonavailability.

Holder and Coulter (1977) find mobile home residents to be primarily young married couples in the beginning stage of the family life cycle, with expanding families comprising the next largest segment. They attribute the popularity of mobile homes among middle-income consumers to their availability, low cost, low maintenance requirements, and concurrent acquisition of home furnishings with purchase of shelter. Other advantages are that it is easier to arrange for financing of mobile homes than other types of structures, and the initial costs are substantially less than for similar dwellings (Angell, 1976). Generally cited disadvantages are their susceptibility to wind and fire damage, and their rapid depreciation in comparison with other types of shelter. In addition, mobile homes are excluded from many communities and residential areas by zoning ordinances (Pynoos, Schafer, and Hartman, 1973).

Despite their popular use, there is evidence that mobile homes are chosen by many only for temporary housing until the family can attain the desired conventional single-family house. Angell (1976, p. 272) reports census data which indicates that two-thirds of the nation's mobile home owners hope eventually to move to a conventional detached house, and states, "It appears, therefore, that mobile homes represent a compromise for many consumers, especially younger families who wish to minimize cost, acquire equity, and still occupy a detached dwelling."

### Modular

According to Angell (1976), modular construction represents the most substantial form of factory-built housing, comprising approximately five percent of all new housing starts in 1973. Theoretically,

with modular systems, a family can buy as much or as little enclosed space as desired, can combine the modules in various ways, and can later add or take away space to meet their changing needs and circumstances. One California-based company which manufactures modular housing describes its product as "a factory-built system that is trying very hard to be custom" (News/Marketing, 1972, p. 36). Starting with a central utility core, the buyer can design his/her own house by using multiples of four feet for wall, and figure the cost on a given cost-per-square-foot basis. Problems in marketing and transportation make modular housing a feasible alternative primarily for consumers in near proximity to a manufacturer, while manufacturers need a large market to make mass production possible. Modular housing offers the advantage of minimum on-site erection time, but the disadvantages of limited design and construction flexibility.

#### Adaptable and Extendable Houses

In a review of what is being done in flexible housing in Europe, authors Rabenek, Sheppard, and Town (1973, 1974a, 1974b) describe several approaches. One of these, termed the "popular mechanics" approach, is built on the idea of minimum space standards used with ingenious technical solutions to achieve illusions of greater space, multi-function of rooms, and freedom to alter the arrangement. Another approach refutes the idea of minimum space, and uses modifications of existing technology to allow choice in both amount and arrangement of space. An example of this is the Primary Support Structures and Housing Assembly Kits (PSSHAK). Incorporated in a project near London, only the basic structure and services for multi-family units are built

for permanence. Moveable exterior and interior walls allow tenants to plan their own layouts before moving in, and later to alter the amount and arrangement of space to meet changing needs or the different needs of another tenant. A similar experimental project, designed by George Maurios as part of his master's thesis at Harvard, has been constructed near Paris (Adaptable housing, 1975). The designer states, however, that the ability to move walls about is a small consideration; the enduring worth of the experiment is to show the basic value of a housing stock that is resilient to technical and social obsolescence.

A third approach is that of extendability. Designs and construction provisions foster add-around, add-on, and add-in extensions of a basic unit. An example of an add-on system was developed for the new town of Milton Keynes near London, a corporation which has encouragement of home-ownership as a stated goal. This system features a basic unit consisting of bathroom/kitchen and living/sleeping area, and is designed to sell at a price low enough to attract young and low-income groups. Extension is planned so that components readily available from building merchants can be used within the framework provided (Extendable houses, 1972). The add-in arrangement provides roof space for an additional floor.

Critics of the extendable house approach point out that they require full investment in land, infrastructure, and basic services, plus structural overdesign, making the first increment expensive in terms of space provided. Additional problems may arise when more space is needed. For a young couple this is likely to be at a time when there is a maximum of alternative demands on their resources, when they

are already committed to other borrowings, or when interest rates have increased and building costs have escalated (Rabenek et al., 1974a).

There is yet another approach to design practice which has emerged, called adaptability (Rabenek et al., 1974b). It is an approach that avoids devices like moveable walls and multifunctional spaces in favor of simple planning, spaciousness, and ambiguity of use. The contention is that the functionalist approach to house design is insufficient and unnecessarily constraining. This concept of an adaptable house is one in which there is a conscious avoidance of stereotype and a minimum predetermination of pattern of use. Design features, such as central lights, extremes in size and shapes of rooms, differences in built-in storage, window size and placement, etc., that would inhibit choice of use are minimized or avoided. Ambiguity of use was once familiar in the domestic architecture of most cultures.

### Owner-Built Houses

Variations of occupant involvement in building appears to be a recurring theme in producing housing responsive to human needs. Of a session on responsive housebuilding technologies at Massachusetts Institute of Technology in which he participated, Allen (1974) states

Perhaps the closest we got to an answer [to what would a responsive dwelling respond?] was to agree that where a person could design and build for himself, using a tractable technology, the question would largely take care of itself (p. x).

Participants in the conference agree that individuals can and would like to design, build, redesign, and rebuild their dwellings as they choose, and maintain that it is the only means for putting each American in a decent house. "Mass-produced housing," they say, "has proved desirable neither economically nor socially" (Allen, 1974, p. xv).

Wellesley-Miller (1974) claims that the evolutionary dwelling has a number of advantages over the static, finished building, one of which is financial. He states that most houses are built on the basis of lowest possible cost per square foot so as to keep market price competitive, but that this initial low cost is usually purchased at the price of high operating costs. One answer, he says, is to shift from lowest first cost of finished structure to lowest possible incremental costs and high terminal value; i.e., to "grow" our homes (p. 19). A start-up structure is built and moved into immediately; over time the structure is extended and new systems incorporated and older ones integrated or sold. Eventually a stable state is reached and the mature dwelling enters a long cycle of tuning, upgrading, and adaptation.

Alexander and Jacobson (1974) suggest that the building system should allow the user many different degrees of participation from total do-it-yourself to contracting out the work with only user-supervision of initial plans. They advocate reconsidering the assumption that buildings should be as cheap as possible, claiming that a building system which enables generations of users to create a very expensive building over a long period of time is needed.

Turner and Fichter (1972), Grindley (1972), and Kern (1975) are others who believe that the owner-builder method of controlling the planning and building of his home is the most efficient way to provide single-family housing. Kern (1975, p. 5) admits, however, that literally building one's own house is not practical for everyone, and that the sheer realities of the situation should be faced. For most people one or more compromises are necessary due to physical limitations and to those restrictions imposed by society.

Turner (1974), in The Responsive House, offers some specific suggestions on building incrementally, both for simplifying the structural-envelop system and for financing. He discusses four prominent obstacles to owner-building: (1) lack of government support, (2) lack of financing, (3) lack of information, and (4) lack of responsive building technologies. He states that owner-construction and financing of a habitable but unfinished house which is then incrementally expanded, though common in developing areas, is still possible, albeit more limited, in the developed nations because of stricter construction, inspection, and occupancy regulations.

Indications of growing interest in extendable houses may be inferred from recent articles in shelter magazines and periodicals. House and Home (What's selling, 1976), Better Homes and Gardens (How to, 1975), and others have featured ideas for building by stages. At least one Memphis, Tennessee builder is constructing expandable houses for cost-conscious families (Expandable homes, 1977). It may be an idea which has gone full circle and whose time has again come.

## CHAPTER III

### RESEARCH METHODOLOGY

The purpose of this study was to obtain opinions of incremental building as a family housing alternative, to ascertain whether those families favoring incremental building over other means for attaining single-family owned housing could be identified by socio-economic characteristics, and to determine whether and how perceptions of advantages and disadvantages of building incrementally would discriminate among households favoring different alternatives. The research technique employed in this study was the survey method and the study is primarily descriptive in nature. The basic procedure was the personal interview conducted by means of a structured questionnaire.

This chapter presents the research methodology and procedures used in preparing and executing the study. Sampling methods and construction of the instruments used in collecting the data are described, and methods for collection and analysis of the data are explained.

#### Population and Sample Selection

Residents of the state of Mississippi who were between the ages of 18 and 55 years and who maintained a separate household comprised the population for the study. The primary sampling unit was the household.



Households to be interviewed were selected through a variety of sampling techniques and a multi-step process. Criteria for selection of the specific area to be sampled were that it had to be as typical of a larger area as possible and fairly close to the researcher's home. The Mississippi section, Part 26, Volume 1, of the Census of Population: 1970. Characteristics of the Population was used to identify those counties in the state with characteristics closely approximating those of the state in proportion of urban and rural residents, population density, educational level, racial mix, and median income. Counties found to be atypical due to high concentration of industry, institutions, military installations, or other factors were excluded. Through this purposive sampling, five counties were identified. One was disqualified because it contained a state university, and, of the others, the two nearest in most respects to the state--Clay and Alcorn--were chosen.

The number of households to be interviewed was determined by realistically assessing the time and funds available and was set at one-half of one percent of the households in each county. This number, 27 from Clay and 44 from Alcorn, was then divided proportionate to the urban and rural population of the county for quota sampling. A random sample of the rural households was done in two stages: (1) a simple random sample of numbered blocks, and (2) a random sampling of households within the block for three households from each selected block.

Individual county maps prepared by the Mississippi State Highway Department, Transportation Planning Division, were used to identify the specific households. These maps are divided into sections and show the location and identities of all structures in each section as of 1977.

Each county map was divided into approximately equal-size blocks and each block was numbered. Numbers corresponding with the block numbers were written on slips of paper and placed in a bowl; five were drawn from Clay County and eight from Alcorn County for 15 and 24 rural interviews, respectively.

Inside each block were numbered sections. For each section in the chosen block, dwellings were counted, numbered on the map, and totaled for the block. Numbers corresponding to the total were placed in a bowl and drawn, thus assigning a randomized order for interviewing to each dwelling. Dwellings drawing the first, second, and third order were marked for interviewing, with other numbers to be used in descending order if the household occupying the dwelling did not meet criteria for inclusion in the sample, were not available, or refused to cooperate.

Since each county had only one town of 2,500 or more residents, a random sampling of urban households was obtained from the latest City Directory (1977 for Corinth in Alcorn County and 1978 for West Point in Clay County). All households in the Street and Avenue Guide section of the directory were numbered consecutively, omitting businesses, offices, and industries. A table of 500,000 random digits was used to select the households to be interviewed, until the needed number of interviews from each city was obtained. Urban respondents totaled 32--12 from West Point and 20 from Corinth. Since the City Directory provided both a name and street address, the address took precedence over the name if occupants were different from those listed. Urban households selected for sampling were located by the street address with the aid of a city map. Rural households were located by reading and following the highway map to the dwellings designated through the sampling procedure.

## Description of the Instrument

The basic method for data collection was the personal interview, conducted by means of a structured questionnaire and preceded by a graphic presentation of the concept of building incrementally to elicit response. The interview schedule (Appendix A) has two parts. Part I was designed to determine respondents' opinion of building in incremental stages in comparison with deferred buying/mortgaging for a completed house or for buying a mobile home, and to determine respondents' perceptions of advantages and disadvantages of building incrementally. Part II requested information of demographic nature from the respondent.

For the graphic presentation, four poster-size illustrations with data comparing size and costs were prepared. These are shown in Appendix B. Two of the illustrations were of houses that could be built in stages--one through vertical expansion and one through horizontal expansion. One was of a completed house that, because of design, would need to be built all at one time, and one was of a mobile home. The three houses were of similar size when completed; the mobile home was a single-wide model approximately half the size of the houses. Information regarding floor space, outside dimension, minimum lot size needed, and estimated cost of each was included with an exterior perspective and floor plan drawing. For the houses that could be built in stages, this was done for each stage. The proposed plans were submitted to a panel composed of three housing professors, a former housing specialist, and a university architect, and were judged for conformity with American housing norms and appropriateness to purpose before the final selection of designs was made.

To arrive at an approximate cost for the houses, two contractor/builders in each of the two counties were shown the floor plans and elevations of the houses selected for use, and asked for a cost estimate for building. The four estimates were then averaged for a cost-per-square-foot figure from which the cost for each stage and for the whole was calculated. Cost for the mobile home was obtained from one dealer in one of the counties and one outside either county, since one of the selected counties had no mobile home sales lot at the time.

Fourteen items stating possible advantages and disadvantages were listed in Part I of the Interview Schedule and the respondent's reaction to each recorded in a five-point Likert scale. These items were based on the literature, on intuition, and on a preliminary investigation by the researcher. The questionnaire and the graphic presentation were constructed between January and July, 1979. Both were submitted to a panel of three housing professors and a former Cooperative Extension housing specialist for review. The panel was asked to rate both the illustrations and the items on the interview schedule on the following criteria:

1. Is the graphic presentation adequate?
2. Is the graphic presentation clear?
3. Is each item significantly related to the concept under investigation?
4. Is each item clear and specific?
5. Are there other items that need to be included on the graphic presentation and/or the questionnaire?

Suggestions were incorporated, revisions made, and the instrument was pilot-tested with a group of 12 clerical and food-service employees

at Oklahoma State University during graduate study there in July, 1979. A re-test was administered to the same group two weeks following the first, and results checked for reliability. As a result of the pilot test, one item was deleted, another added, and further refinements made for clarity.

#### Collection of Data

Data were collected by the researcher through personal interviews with selected subjects between September 1 and November 30, 1979. Each interview required approximately one hour. The researcher located the household, introduced herself, briefly explained the purpose of the study, and ascertained whether the household met the criteria set forth in the limitations. If not, the researcher thanked the respondent and left. If the dwelling was unoccupied, if no one was home, if the occupant did not meet criteria for inclusion or declined to be interviewed, the researcher went on to the next dwelling selected through the sampling procedure. If the household met the criteria, the cooperation of the head or co-head was requested as a respondent for the study. Only an interview with the household head, co-head, or both was acceptable for inclusion. Approximately one interview was completed for every three households selected through the sampling procedure, because of failure to meet age criteria or because no one was home. Only three householders declined to cooperate.

For each interview, the concept of pre-planned add-ons was carefully explained to be sure the respondent understood the difference between pre-planning the additions and simply adding on after the house had been finished. Five questions pertaining to prior awareness and

interest in the concept were then asked and recorded before the respondent was shown the four illustrations of single-family detached housing. Subsequent questions were based on reaction to the concept, and on demographic data of the household. Responses were recorded at the time of the interview by the researcher. Respondents were assured of anonymity prior to the interview and names of those responding were not recorded on the schedule. A coding system for the location of the household was constructed and this code written on the schedule.

A total of 71 interviews was obtained according to the plan for sample selection. Each schedule was carefully edited by the researcher immediately following the interview for complete and correct data. All interview schedules obtained were usable.

#### Analysis of Data

Data obtained from the interviews were coded as needed for the study and recorded on cards for electronic computation. Analyses were conducted through facilities of the computer center at The University of Mississippi. The Statistical Package for the Social Sciences (SPSS) computer program (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975) was used for chi square analyses, and Fortran Programming for the Behavioral Sciences (Veldman, 1967) was used for the multiple discriminant analysis.

#### Frequency Distributions

Responses to all items in the interview schedule were first analyzed by means of frequency distributions. These distributions were

obtained in terms of absolute frequency, relative frequency, and adjusted frequency for each category of a variable.

### Chi Square Analyses

The data were analyzed and interpreted to determine if there is a significant difference in selected household characteristics of respondents according to their opinion of incremental building as a means for attaining single-family owned housing. Chi square was the analytical tool used for this analysis. Chi square values for eight different contingency tables were computed to analyze the relationship of opinion with (a) family type, (b) level of income, (c) educational level, (d) race, (e) location of dwelling, (f) housing type, (g) housing tenure, and (h) expectations for moving. The .05 level of confidence was used as the basis for establishing significance.

### Multiple Discriminant Analysis

Multiple discriminant analysis was performed to determine whether perceptions of advantages and disadvantages of incremental building varied significantly among households specifying incremental building, postponing purchase/mortgaging for a completed house, or buying a mobile home as their opinion of the better way to attain owned single-family housing. Partial F-ratios for each of 14 advantages and disadvantages included in the interview schedule, as well as the overall F-ratio for differences among the three opinion groups, were computed and examined.

## CHAPTER IV

### ANALYSIS OF DATA

This study was concerned with attitudes and perceptions toward building family housing by pre-planned stages in today's socio-economic milieu. This chapter presents a description of the geographic area sampled and results from the analysis of data. The analyses include (1) a description of respondents in the sample, (2) frequency data relative to awareness and interest in incremental building, (3) an analysis of differences in selected demographic characteristics among households categorized by their opinion of the best way to attain owned single-family housing, and (4) an analysis of whether and how perceptions of advantages and disadvantages of building incrementally discriminate among households classified by attitudes.

#### Descriptive Analysis

The geographic areas from which the sample was drawn is described below, and a comparison of population characteristics of the areas with those of the state is shown in Table I. Two Mississippi counties--Clay and Alcorn--were selected through census data in a multi-stage sampling process. Both counties are located in the northern half of the state; Clay is near the center and Alcorn is on the extreme northern border. Both, like the state, are predominately rural, with only the county seats in each having a population greater than 2,500 persons.



TABLE I

SAMPLE DISTRIBUTION AND COMPARISON OF SOCIAL AND  
ECONOMIC CHARACTERISTICS OF SELECTED  
COUNTIES WITH STATE

Number in Sample	1970 Census	Households in County	Percent Urban	Percent Rural	Race: Per- cent Black	Pop. Density Per Sq. Mile	Median School Yrs.	Median Income
	State		44.5	55.5	37.2	46.9	10.7	6071
44	Alcorn Co.	8801	42.6	57.4	11.9	67.1	9.8	6601
27	Clay Co.	5318	46.3	53.7	49.5	45.5	10.5	6228

Corinth in Alcorn County has approximately 14,000 inhabitants; West Point in Clay County has approximately 9,000 inhabitants. Both towns have several small industries, both are located near the Tennessee-Tombigbee Waterway, and both are served by three railroad lines. The Black population in Alcorn County is concentrated mainly in Corinth; in Clay it is more dispersed throughout the county.

#### Description of Respondents

Responses to questions pertaining to demographic variables are summarized below, and personal characteristics of the respondents are presented in Table II. Of the persons interviewed, 63 percent were female and 39 percent were male. In those instances when both spouses participated in the interview, the interview was attributed to the spouse who verbalized most of the answers. Slightly more than three-fourths of the respondents were married; half of those remaining were single parents with minor children living at home. Over half of both males and females in the sample were between the ages of 25 and 45 years, with the mode for males being 45-54 years and for females 35-44 years. Females had slightly more formal education than males, with the difference primarily in the levels below high school graduate. Approximately 40 percent of each gender ended their formal education with high school graduation. More than 30 percent did not finish high school. Almost 20 percent, however, had some college education.

Table III depicts household characteristics of the respondents. Households were coded into family types, based on age and composition. As would be expected, the largest proportion, 64.8 percent, were nuclear families, consisting of both parents and children. Slightly

TABLE II  
DISTRIBUTION OF PERSONAL CHARACTERISTICS  
OF THE SAMPLE

Variable	Number	Percent
<u>Gender of Interview Respondent</u>		
Male	26	36.6
Female	45	63.4
<u>Marital Status</u>		
Now married	55	77.5
Single (never married)	3	4.2
Widowed	5	7.0
Separated or divorced	8	11.3
<u>Age, Male<sup>a</sup></u>		
Under 25	8	12.9
25-34	19	30.6
35-44	15	24.2
45-54	20	32.3
<u>Age, Female<sup>a</sup></u>		
Under 25	11	17.2
25-34	17	26.6
35-44	19	29.7
45-54	17	26.6
<u>Education, Male<sup>a</sup></u>		
8 years or less	12	19.4
Some high school	8	12.9
High school graduate	25	40.3
Some college	11	17.7
College grad and post grad	6	9.7
<u>Education, Female<sup>a</sup></u>		
8 years or less	9	14.1
Some high school	11	17.2
High school graduate	25	39.1
Some college	12	18.8
College grad and post grad	7	11.0

<sup>a</sup>Percentage is adjusted for nine male and seven female households having no co-head. Totals are more than total households in the survey.

TABLE III  
 DISTRIBUTION OF HOUSEHOLD CHARACTERISTICS  
 OF THE SAMPLE

Variable	Number	Percent
<u>Race</u>		
White	56	78.9
Black	15	21.1
<u>Family Type</u>		
Single person, under 35	4	5.6
Childless couple, wife under 35	5	7.0
Nuclear, oldest child under 6	9	12.7
Nuclear, children mixed ages	37	52.1
Couple or single, over 35, no children at home	8	11.3
Single parent, minor children	8	11.3
<u>Children and Older Adults in Household</u>		
One child	25	46.3 <sup>a</sup>
2-3 children	23	42.6 <sup>a</sup>
4 or more children	6	11.1 <sup>a</sup>
Older adult	5	7.0
<u>Location of Household Residence</u>		
Town over 10,000 population	20	28.2
Town 2,500-10,000 population	12	16.9
Suburban	3	4.2
Town under 2,500	1	1.4
Rural, open country or farm	35	49.3
<u>Housing Type of Household Residence</u>		
Single-family, conventional house	54	76.1
Townhouse or Duplex	4	5.6
Mobile home	8	11.3
Apartment, 3 or more units	5	7.0
<u>Income Level (Annual)</u>		
Less than \$5,000	6	8.5
\$5,000-\$8,000	8	11.3
\$8,001-\$12,000	12	16.9
\$12,001-\$16,000	14	19.7
\$16,001-\$20,000	15	21.1
\$20,001-\$25,000	7	9.9
\$25,001-\$30,000	5	7.0
Over \$30,000	4	5.6

TABLE III (Continued)

Variable	Number	Percent
<u>Employment of Female</u>		
Not employed outside the home	25	45.5 <sup>b</sup>
Employed full time	27	49.1 <sup>b</sup>
Employed part time	3	5.4 <sup>b</sup>
<u>Housing Tenure</u>		
Own or buying	51	71.8
Rent	20	28.2
<u>Residence in Community</u>		
More than 15 years	36	50.7
11-15 years	11	15.5
6-10 years	9	12.7
2-5 years	9	12.7
Less than two years	6	8.5
<u>Expectations for Mobility</u>		
Expect to stay	57	80.3
Expect to move or uncertain	14	19.7

<sup>a</sup>Frequencies adjusted for the 54 households with children.

<sup>b</sup>Percentage adjusted for 55 households having both male and female heads.

over 11 percent were single-parent families. Almost half of the households with children had only one child, 42.6 percent had either two or three children, while 11 percent had four or more. Only seven percent of the respondents had members other than the nuclear family living in the household.

Blacks were the only non-white racial group in the sample. Black households made up 21.1 percent of the households interviewed. This was somewhat less than the state average of 37.2 percent. Although

quota sampling was done for rural-urban population, the decision to group those households residing within two miles of the city limits with the urban population changed the ratio slightly, so that respondents were almost evenly divided between rural and urban residence.

Approximately three-fourths of the respondents lived in conventional single-family detached houses. No data were collected on size or condition of the structure. Mobile homes were the second most prevalent housing type, comprising 11.3 percent of respondents' housing. Seven percent lived in apartments, though when combined with duplexes and townhouses, the multi-family residents totaled 12.6 percent. The majority of the households, 71.8 percent, owned their residence. More than half had lived in the community 15 years or longer, and two-thirds had lived there for more than 10 years. Approximately 80 percent said they do not expect to move from the community.

Income level of the households appeared to be fairly normally distributed in a range from less than \$5,000 to over \$40,000 annually. Approximately half of the households in the sample had incomes between \$12,001 and \$25,000, with more in the lower than in the upper levels. The mode was the \$16,001 to \$20,000 level, but the median was the \$12,001 to \$16,000 level. Almost 20 percent had incomes of \$8,000 or less, and 16.9 had incomes between \$8,001 and \$12,000. Only 12.6 percent of the sample had incomes above \$25,000.

Of the families having both male and female heads, 49 percent of the females worked outside the home 30 or more hours per week and 45.5 percent were full time homemakers. Forty-two percent of the households in the sample were two-income families, reflecting the national trend. Data regarding occupations of both male and female respondents were

collected but no statistical analyses were computed due to the small numbers in the several classifications. Occupational categories and definitions of the United States Department of Labor (1977) were used to classify occupations. Males were fairly well distributed in all classifications, with the largest number employed in the machine trades. The majority of females in the study were employed in benchwork in garment, metal products, and electrical equipment manufacturing plants. Even though more than half of the households were rural, only four were employed in agriculture.

#### Prior Awareness and Interest of Respondents in Incremental Building

Following a brief explanation of the concept of building in pre-planned stages, respondents were asked if they had ever heard of or thought about this method of building before. Of the total, 36.6 percent said they had heard of or thought about it; 63.4 percent said they had not. Two respondents had built for themselves using a variation of building in pre-planned stages, and 16.9 percent knew of others who had built by stages. Eighty-three percent of the respondents indicated that they would like to know more about planning and building by pre-planned stages. Of those indicating interest, approximately one-fifth (18.3 percent) were very interested, while almost half (43.3 percent) said they were only mildly curious. The remainder were somewhat interested or had no opinion.

The respondents were then shown the drawings and space/cost comparisons of a mobile home and three conventional houses, two of which were designed to be built in incremental stages. In response to the

question of their opinion of the better of three alternatives in attaining owned single-family housing, 49 percent indicated that their opinion of the better way is to wait, if necessary, and borrow the money to buy or build a completely finished house. Twenty-nine respondents, or almost 41 percent, indicated building by increments as their opinion of the better way, while 10 percent chose the mobile home as the better alternative.

In response to a question at the end of the interview asking if the respondent would build for him/herself at any future time by pre-planned stages, 9, or 12.7 percent replied that they very probably will. Sixteen respondents, or 22.5 percent, said they possibly will, and 64.8 percent replied no, it is not likely that they themselves would build by stages.

#### Association of Household Characteristics

##### With Choice

Selected demographic characteristics which were analyzed for difference among households favoring incremental building, deferring purchase/mortgaging for a completed house, or buying a mobile home were: (1) family type, (2) income level, (3) educational level, (4) race, (5) location of current residence, (6) housing type of current residence, (7) housing tenure, and (8) expectations for moving. Results of chi square analyses are presented in Table IV and are discussed below.

##### Family Type

Chi square analysis for significance indicated that opinion of



TABLE IV  
 PERCENTAGE OF RESPONDENTS FOR EACH ITEM AND  
 CHI SQUARE VALUES FOR ATTITUDE AND  
 HOUSEHOLD CHARACTERISTICS

Characteristics	Percentage of N (N=71)	$\chi^2$	df	p
<u>Family Type</u>				N.S. <sup>a</sup>
Single person, under 35	5.6			
Childless couple, wife under 35	7.0			
Nuclear, oldest child under 6	12.7			
Nuclear, children mixed ages	52.1			
Couple or single, over 35, no children at home	11.3			
Single-parent, minor children	11.3			
Total	100.0	9.026	10	0.5296
<u>Level of Income</u>				N.S.
Under \$8,000	19.8			
\$8,001-\$12,000	16.9			
\$12,001-\$16,000	19.7			
\$16,001-\$20,000	21.1			
\$20,001-\$25,000	9.9			
Over \$25,000	12.6			
Total	100.0	14.283	10	0.1605
<u>Educational Level</u>				N.S.
Eight years or less	14.1			
Some high school	15.5			
High school graduate	39.4			
Some college	22.5			
College grad or post grad	8.5			
Total	100.0	10.403	10	0.2378
<u>Race</u>				N.S.
White	78.9			
Non-white	21.1			
Total	100.0	0.2628	2	0.8769
<u>Location of Current Residence</u>				N.S.
Urban	49.3			
Rural	50.7			
Total	100.0	1.610	2	0.4469

TABLE IV (Continued)

Characteristics	Percentage of N (N=71)	$\chi^2$	df	p
<u>Housing Type of Current Residence</u>				
Single family, conventional	76.1			Highly Signif.
Single-family, mobile home	11.3			
Multi-family	12.6			
Total	100.0	20.516	4	0.0004
<u>Housing Tenure</u>				
Own or buying	71.8			N.S.
Rent	28.2			
Total	100.0	0.4172	2	0.8117
<u>Expectation of Mobility</u>				
Expect to stay	80.3			N.S.
Expect to move	19.7			
Total	100.0	0.5105	2	0.7747

<sup>a</sup>N.S. indicates not significant at .05 level of confidence.

incremental building is not a function of family type. Therefore, hypothesis 1a of no significant difference in terms of family type was accepted (see Table IV). Within the contingency table, the greatest difference in cells was with the family types (3) nuclear, oldest child under six, and (6) single parents with minor children. Considerably more respondents in both these family types indicated the choice of borrowing money to buy or build a completely finished house over the choices of building by stages or buying a mobile home.

### Level of Income

Nine categories for the data collected on income were collapsed into six for analysis due to small numbers at the higher income levels. Differences in income levels among households categorized by opinion favoring building by stages, deferring purchase/mortgaging for a completed house, or buying a mobile home were not significant at the .05 level of confidence. This variable, however, was more significant than any other characteristic excepting housing type, having a chi square value of 14.28327 and a level of significance of 0.16 (see Table IV). Differences among cells revealed the most pronounced variability by respondents in the \$16,001 to \$20,000 level. At this level and the \$20,001 to \$25,000 level the choice of building by stages surpassed all other choices. The ratio for building incrementally was two to one over both other options at the \$16,001 to \$20,000 income level. No respondents in these two levels selected the mobile home choice, though one respondent in the over \$25,000 level did.

### Educational Level

The educational level of the household was interpreted as the last year of formal education of either the male or female head(s). Two groups--college graduate and post-graduate--from the original data were collapsed because of the small number in the sample. Difference in educational level among households categorized by choice

ownership of single-family detached housing was found not significant at the .05 level of confidence. The classification of "some college" accounted for the most variability in the contingency table. Within this level, respondents chose building by stages by a ratio of more than two to one over deferring/mortgaging, with none choosing mobile homes.

#### Race

The data indicated no significant differences among households choosing building incrementally, deferring purchase/mortgaging, or buying a mobile home as the better way to attain single-family owned housing as a function of race. The chi square value of .2628, 2 df,  $p = .8769$  was not significant (see Table IV). The ratios within the contingency table were approximately equal.

#### Location of Current Residence

Because of the small number of respondents living in towns under 2,500 population and in suburban areas, the cells were collapsed into only two classifications of rural and urban. Households whose residence was within two miles of an incorporated town or city of over 2,500 residents were classified as urban, since this area is usually under the jurisdiction of municipal government and served by municipal utilities. The single respondent residing in a town under 2,500 inhabitants was grouped with rural residents.

The chi square value of 1.6108 with 2 df was not significant, as  $p = 0.4459$  (see Table IV). An almost equal number of rural and urban respondents chose building by stages and deferring purchase/mortgaging

alternatives. Considerably fewer in each classification chose buying a mobile home, but of those who did, more than twice as many rural as urban respondents made this choice.

#### Housing Type of Current Residence

Respondents living in duplexes, townhouses, and apartment houses of three or more units were grouped into one classification of multi-family dwellings for statistical testing because of the small number in each. The other two groups were mobile homes and conventional single-family houses. Results of statistical analysis revealed highly significant differences at the .001 level of confidence (chi square - 20.51629, 4 df,  $p = .0004$ ) for this variable (see Table IV). No respondents currently living in mobile homes indicated deferring purchase/mortgaging for a completed house as their opinion of the better choice. These respondents were almost evenly divided between building by stages and buying a mobile home. Subjects currently living in multi-family dwellings were equally favorable toward deferring purchase/mortgaging and toward building by stages, but none chose buying a mobile home. Of respondents who lived in conventional single-family houses, the majority indicated deferring purchase/mortgaging as their choice, but the margin was only three to two in favor of this choice over building by stages. Only 10 percent of the respondents chose the mobile home. The null hypothesis of no significant difference among households categorized by attitude and housing type of their current residence was therefore not accepted and the alternate hypothesis of a significant difference was accepted.

### Housing Tenure

No significant difference was found between achieved housing tenure and preference among households for building by stages, deferring/mortgaging or buying a mobile home (chi square = .4172,  $p = .8117$  with 2 df). In terms of whether they currently rent or own their residence, the majority of both groups was fairly equally divided between the choices of deferring purchase/mortgaging and building by stages, with the former slightly greater. There was nothing in the data to indicate whether tenure norms or housing type norms would be sacrificed first (see Table IV).

### Expectations for Moving

No significant difference between mobility expectations and choice among households for building by stages, deferring/mortgaging or buying a mobile home was indicated. With 2 df and a chi square value of .5105, the hypothesis of no significant difference was accepted (see Table IV).

### Multiple Discriminant Analysis

The second objective of the study was to determine whether and how perceptions of advantages and disadvantages of building by stages would discriminate among households expressing preference for building incrementally, for deferring purchase/mortgaging for a completed house, or for buying a mobile home. Seven projected advantages and seven projected disadvantages derived from the literature and through

an intuitive approach were the independent variables. The dependent variable was the respondent's opinion of the better way, among the three specified alternatives, to attain ownership of single-family detached housing (question 22 in the interview schedule). The independent variables are shown in Table VI and in the Interview Schedule in Appendix A. Each statement was rated by the respondents using a Likert scale as follows:

- 1 Strongly Disagree
- 2 Somewhat Disagree
- 3 Undecided
- 4 Somewhat Agree
- 5 Strongly Agree

For computational purposes scores for the statements of disadvantages were reversed when coding. The discriminant functions were computed by the simultaneous method, considering the entire set of independent variables concurrently.

Before the discriminant functions were derived it was necessary to determine whether the three preference groups differed significantly on perceptions of advantages-disadvantages. This is a test of equality of group means. Data were subjected to an MDA routine which yielded a Wilks Lambda statistic of 0.460. This is equivalent to an F ratio of 1.863 with 28 and 110 df. The probability of obtaining an F this large by chance is less than .0122. The null hypothesis of no significant difference among the variable means of the three groups was therefore not accepted at the .01 level of confidence, and the discriminant function analysis continued.

To further interpret results of the MDA it is necessary to examine the discriminant functions and the relative importance of each of the independent variables in discriminating among the groups. The discriminant analysis identifies the variables where the greatest difference exists among the groups and derives a discriminant weighting coefficient for each variable. With three categorical groups there are two functions. The first function takes the best set of weighting coefficients and computes the most effective prediction equation. This function was found to account for 84.74 percent of the between-groups variability. The chi square test for significance used in the Veldman (1967) package yielded a value of 39.359, 15 df for a highly significant probability of .0009 for Function One. The discriminant equation explaining the remaining variability, Function Two, accounted for only 15.26 percent (chi square - 9.166, 13 df,  $p = 0.7606$ ). Thus, the first equation contributed significantly to the total discriminative ability of the 14 variables toward group classification, while the second one was not significant.

Group centroids, which are the average of the z scores for each group, are shown for each function in Table V. Since Function One accounted for most of the variance, the centroids for this function seemed to indicate that Group One was different from Groups Two and Three, but that Groups Two and Three were not very different from each other. This cannot be interpreted with any degree of certainty, however, as the distribution of z scores for both Groups Two and Three could be quite leptokurtic or skewed.



TABLE V  
DISCRIMINANT ANALYSIS SHOWING CENTROIDS  
FOR EACH GROUP FOR EACH FUNCTION

Group	Function 1	Function 2
1	3.4148	3.2588
2	4.5984	3.4268
3	4.4683	2.3687

#### Relative Discriminant Ability

The relative discriminating ability of the independent variables may be interpreted through univariate F tests for each variable. As can be noted from Table VI, two of the independent variables are significant discriminators beyond the .05 level of confidence, and three others are significant beyond the 0.10 level.

Variable 6, projected savings on the costs of borrowing money to build, is the most significant item in discriminating among the groups. The partial F-ratio for this variable is 7.5434,  $p = .0014$ . Variable 3, possibilities for the owner to do part of the work him/herself, ranks second in ability to discriminate. At the .01 level of confidence ( $F = 4.6715$ ), this variable contributes significantly to the difference among groups.

The third ranking variable in ability to discriminate among the three groups is Variable 1, the projected advantage of being able

TABLE VI  
 DISCRIMINANT ANALYSIS RELATING ADVANTAGE-  
 DISADVANTAGE VARIABLES TO OPINION  
 CLASSIFICATIONS

Independent Variables (Advantages and Disadvantages)	F-Ratio	Rank	p
1. Could get a larger or better house without moving.	2.8691	3	0.0620
2. The size and cost of the house could be increased as income increases.	0.8400	10	0.4395
3. Could do part of the work myself.	4.6715 <sup>a</sup>	2	0.0125
4. Could purchase sooner since I wouldn't have to save so much for a down payment as for a larger house.	2.5122	5	0.0867
5. May be easier to get a loan since loan amount would be smaller.	0.6798	11	0.5146
6. Could save on interest costs since I wouldn't have to borrow so much money to begin building.	7.5434 <sup>b</sup>	1	0.0014
7. Could avoid expenses of closing costs, moving, and refurnishing usually associated with moving from one house to another.	2.6258	4	0.0779
8. Cost of the first stage, including cost of land, would be too expensive for amount of living space provided.	0.3465	12	0.7135
9. Additions would probably be needed at a time when other family expenses would be heavy.	1.4893	8	0.2314
10. Choice of location could be limited because of zoning laws, subdivision codes, or other regulations.	0.9638	9	0.3886

TABLE VI (Continued)

Independent Variables (Advantages and Disadvantages)	F-Ratio	Rank	p
11. Neighborhood might not be a desirable place to live in future years.	0.2929	13	0.7512
12. Financing may be more difficult than for a completed house.	1.4897	7	0.2313
13. Resale before completing additions may be more difficult than for a completely finished house.	0.1701	14	0.8449
14. May have problems with construction and materials.	1.5895	6	0.2099

<sup>a</sup>Significant at .01 level.

<sup>b</sup>Significant at .001 level.

to get a larger or better house without having to move. Another variable associated with moving, Variable 7, ranks fourth. Variable 7 is the advantage of avoiding moving expenses, closing costs, and refurnishing encountered in moving from one house to another by building incrementally. Variable 1 is significant at the .06 level of confidence, having a partial F value of 2.8691; for Variable 7 the F-ratio is 2.6258,  $p = 0.0779$ . Variable 4, earlier attainment of home ownership of a conventional house by building incrementally, ranks fifth as a significant discriminator. The F-ratio of Variable 4 is 2.5122,  $p = 0.0867$ .

The five variables contributing most to differences among groups are all projected advantages; the next four in rank are projected disadvantages. The perceived disadvantage of problems with construction and materials is eighth in rank; projected difficulty in financing ranks seventh; the statement that additions would probably be needed at a time when other family expenses would also be heavy ranks eighth; and limitations on choice of location ranks ninth. Possibilities for selling before completing the additions, Variable 13, is lowest of the 14 given items in ability to discriminate among groups (see Table VI).

#### Group Means for Each Variable

An indication of the way in which advantages and disadvantages of building by incremental stages are perceived by each group may be found in the group means for each of the independent variables. These are shown in Table VII. Scores of disadvantages were reversed in coding so that a score of 5 for each item is a high positive attitude toward building in increments. Thus, for variables 8 through 14, a score above 3.0 indicates disagreement with the statement in the interview schedule.

As can be noted in Table VII, respondents in Group 2, those favoring building by increments, tended toward a more positive attitude on all items, falling under 3.0 on only two statements. These are the statements that additions would probably be needed at a time when other expenses would likely be heavy (Variable 9), and that resale before completing the additions may be difficult (Variable 13).

TABLE VII  
MEANS OF EACH GROUP FOR EACH VARIABLE

Independent Variables (Advantages)	Group 1 <sup>a</sup> (N=35)	Group 2 <sup>b</sup> (N=29)	Group 3 <sup>c</sup> (N=7)	$\bar{x}$ All Groups
1. Could get a larger or better house without moving.	4.2571	4.3793	3.4286	4.0216
2. The size and cost of the house could be increased as income increases.	4.3714	4.4828	4.0000	4.2847
3. Could do part of the work myself.	3.6286	4.5517	4.4286	4.2029
4. Could purchase sooner since I wouldn't have to save so much for a down payment as for a larger house.	4.0857	4.5862	4.5714	4.4144
5. May be easier to get a loan since loan amount would be smaller.	4.3143	4.2759	3.8571	4.1491
6. Could save on interest costs since I wouldn't have to borrow so much money to begin building.	3.6286	4.5862	4.5714	4.2620
7. Could avoid expenses of closing costs, moving, and refurnishing usually associated with moving from one house to another.	4.3714	4.7241	4.5714	4.5556
8. Cost of the first stage, including cost of land, would be too expensive for amount of living space provided.	3.8286 <sup>d</sup>	3.5862 <sup>d</sup>	3.7143 <sup>d</sup>	3.7097
9. Additions would probably be needed at a time when other family expenses would be heavy.	2.4286 <sup>d</sup>	2.9310 <sup>d</sup>	3.0000 <sup>d</sup>	2.7865

TABLE VII (Continued)

Independent Variables (Advantages)	Group 1 <sup>a</sup> (N=35)	Group 2 <sup>b</sup> (N=29)	Group 3 <sup>c</sup> (N=7)	$\bar{x}$ All Groups
10. Choice of location could be limited because of zoning laws, subdivision codes, or other regulations.	2.5714 <sup>d</sup>	3.0345 <sup>d</sup>	2.7143 <sup>d</sup>	2.7734
11. Neighborhood might not be a desirable place to live in future years.	2.9429 <sup>d</sup>	3.1034 <sup>d</sup>	2.7143 <sup>d</sup>	2.9202
12. Financing may be more difficult than for a completed house.	2.7429 <sup>d</sup>	3.3103 <sup>d</sup>	2.7143 <sup>d</sup>	2.9225
13. Resale before completing additions may be more difficult than for a completely finished house.	2.3429 <sup>d</sup>	2.1379 <sup>d</sup>	2.2857 <sup>d</sup>	2.2555
14. May have problems with construction and materials.	2.4571 <sup>d</sup>	3.0345 <sup>d</sup>	2.7143 <sup>d</sup>	2.7353

<sup>a</sup>Preference for deferring purchase/mortgaging for a completed house.

<sup>b</sup>Preference for building by increments.

<sup>c</sup>Preference for buying a mobile home.

<sup>d</sup>Indicates that scores were reversed in coding to reflect negative (low score) to positive (high score) attitude toward building in increments. Thus, means above 3.0 on these variables indicate "disagree" with the statement. Range of possible scores is 1 to 5.

Group 3, those favoring buying a mobile home, also appears fairly positive toward building incrementally even though their preference was for the mobile home alternative. This group has means above 4.0 on all advantage variables except those of getting a larger house without moving, and ease in obtaining a loan. On the disadvantage variables group means are below 3.0 on five variables, with a positive score only on cost of the first stage. Group 1, those favoring deferring purchase/mortgaging, has means under 3.0 on six of the disadvantage items, indicating that Groups 1 and 3 see more disadvantages, or feel more strongly about them, than Group 2. Note that all groups disagreed with the statement that the high cost of the first stage, in terms of the amount of living space provided, would be a disadvantage. A common response was that "you may as well pay for the land in the beginning as later."

High positive scores by all groups, and the highest means for the total, were found for Variables 4 and 7, indicating that earlier attainment of home ownership and saving on moving costs, closing costs, and refurnishing are perceived as the greatest advantages of building by incremental stages. Being able to keep the size and cost of the house compatible with income, and saving on interest costs also were rated high (see Table VII). Group means for the disadvantage variables tended toward disagreement on items 11 and 12, as well as on item 8, as already noted. These were the statements that the neighborhood might change toward becoming undesirable, and that financing a house built by stages might be more difficult than for a completed house. Many respondents commented that change in neighborhood would

be no more likely for the incrementally built house than for others. The lowest means were found on Variable 13, indicating agreement by most respondents that difficulties may be encountered in selling before all additions were completed.



## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Purposes and Objectives

Because owned single-family detached housing continues to be the strong housing preference of American families, and because an increasing number are being priced out of their preferred market, this study was undertaken to investigate the feasibility of building single-family homes by incremental stages. Theoretically, this process of building would lower the initial cost, enable more families to purchase, permit adding-on over a period of time, and culminate in fulfillment of the family's housing aspirations.

The purpose of this study was to investigate attitudes and perceptions of families toward this concept. Specific objectives of the study were (1) to determine whether households favoring incremental building over other alternatives for attaining owned single-family housing can be identified by socio-economic or other characteristics, and (2) to determine whether and how perceptions of advantages and disadvantages of building incrementally discriminate among households favoring different alternatives. Seventy-one households, limited to those whose head(s) were between 18 and 55 years of age, were the primary sampling units. Data were collected by personal interview using a structured questionnaire and a graphic presentation of three alternatives for attaining owned single-family

housing: deferring purchasing/mortgaging for a completed house; building by stages; or buying a mobile home.

### Discussion of Findings

Even though the hypothesis of no significant difference in demographic characteristics among households favoring the different alternatives was accepted for all but one of the characteristics tested, considerable information regarding households favoring incremental building was gained from the findings. A significant difference in preferred alternatives was found between those who lived in conventional single-family homes and those who lived in multi-family and mobile homes. This difference was closely examined, as the majority of the respondents lived in conventional houses and most of these chose the deferring purchase/mortgaging option. None of the respondents living in mobile homes chose the mortgaging alternative and none living in multi-family dwellings chose mobile homes, so these groups were collapsed and the chi square test performed again with only two housing-type groups--those living in conventional single-family detached houses and those living in other types of housing. The difference was still significant,  $.025 < p < .01$ . A greater ratio of those households currently living in mobile homes and multi-family housing favored building by increments as a way to attain owned single-family housing than those households already living in conventional houses. This finding is doubtlessly related to the fact that most of the respondents living in conventional houses had already attained ownership of a single-family detached home, and possibly felt obliged to defend their prior choice.

Assuming that most people strive toward the cultural norm, this finding should not be surprising. Those households living in mobile homes and multi-family structures deviated from the cultural norm, if not the family norm, in structure type and/or tenure. If the deviation was involuntary, i.e., due to economic circumstances, then the concept of building by stages was probably perceived as a vehicle for attaining the norm. Though no comparable data was found for dwellers in multi-family housing, this is compatible with Angell's report (1976) that approximately two-thirds of mobile home dwellers hope eventually to move to a conventional detached house. In this study half of the mobile home respondents chose incremental building; the other half chose mobile homes.

Further examination of the contingency table revealed that the mobile home dwellers deviated more than all others in observed frequency/expected frequency in the deferring purchase/mortgaging cell. Dillman, Tremblay, and Dillman (1979) made a somewhat similar finding in a study of housing preferences. They found that mobile home dwellers deviated from the pattern of others in preferring to own a mobile home and lot over conventional single-family homes. They also found that owning a mobile home and lot was preferred to a greater extent by those ranking low in social class, particularly as measured by education. This suggests that some mobile home dwellers and possibly some of those living in multi-family housing made that choice for reasons other than economic, but that for others in these housing types and for a sizeable minority of those in single-family houses, building by stages is viewed as a viable option.

Neither educational level nor income were found in this study to be significantly different among households favoring each of the given alternatives. Both, however, approached significance, and are noteworthy because of variations within the contingency tables. There were indications in the literature that add-on construction is seen as a device for making home ownership accessible to those of limited means (Rabeneck et al., 1974). This study found the most pronounced variability in the middle income levels. For respondents with incomes between \$16,001 and \$25,000, the choice of building incrementally surpassed all other choices. Explanation and support for this finding may be found in recent reports by the news media that middle-income families, especially younger ones, have been most adversely affected by escalating housing costs. It may be that with this group aspirations for the middle-class norm in housing were strongest, and expectations for attainment were also high, but were frustrated by economic conditions that force postponement. The idea of building a portion of the aspired-to house may appeal to this group by lowering cost within their reach while facilitating progress toward their goal.

The significant variation in educational level occurred at the level of "some college." At this educational level, households favoring building by increments as the better way to attain owned single-family housing exceeded those favoring deferring purchase/mortgaging by a two to one ratio, with none choosing mobile homes. There appeared to be some relationship between this educational level and the income levels, which differed from expected frequency, though the relationship was not statistically tested.

Of the two variables which emerged as significant discriminators among households choosing different alternatives for attaining owned single-family housing, both relate directly or indirectly to economic concerns. This finding appears to support Edwards' (1972) statement that the economic factor is of the greatest influence in housing selection. In descending order, the significant discriminators were Variable 6: "Could save on interest costs"; and Variable 3: "Could do part of the work myself."

Interest rates have increased gradually for years, but with the inflationary economy, have risen at a faster rate in recent months. Some respondents commented that savings realized by borrowing a smaller amount initially might be negated by inflation and by higher rates on future loans for subsequent stages. Comments were also noted that, if costs continue to rise, building by stages may be the only way many families can hope to attain homeownership. It should be noted that data were collected in the Fall of 1979, just prior to the sharply fluctuating interest rates of the first half of 1980 when some conventional loans rose to 17 or 18 percent before starting to drop again. Interest rates at the time data were collected were around 12 to 13 percent. Many of the respondents in Group One were already homeowners, probably having obtained loans at a lower rate than currently available. Thus, past experience seen in light of subsequent events, may have affected the response of this group. This finding probably reflects both basic values of respondents and their reaction to the uncertainty of the economic outlook at the time.

The possibility for self-help labor as a significant discriminator may relate to value orientation, personal inclinations, and age

of the respondents, as well as to the economics of their circumstance. While some individuals and families may engage in do-it-yourself projects for personal satisfaction, most probably do it to save money. Grindley (1972) noted that owner-involvement and sweat-equity in individually built homes were fairly common and desirable practices, accounting for approximately 20 percent of all new single-family dwellings constructed in the United States each year.

Variables 1 and 7, "Getting a larger or better house without moving," and "Avoiding moving expenses and closing costs," approached significance with  $p = .06$  and  $.07$ , respectively. The discriminating ability of these two variables may be attributed to several reasons. Prior studies (Rossi, 1955; Foote et al., 1960; Butler et al., 1969) have indicated that housing adjustment is the primary motivating factor of short distance moves, and Morris and Winter (1978) have found a pattern for mobility early in the life cycle as the family attempts to achieve structure type, tenure, and neighborhood norms. Families in Group One, who had already attained these norms, probably viewed moving in retrospect, while many in Groups Two and Three may have viewed it from recent experience or as anticipated. All groups had means above 4.0 on Variable 7. This could indicate that the prospect of a housing process that avoids not only the expense of moving, but the energy, time, and psychic toll, may have wide appeal.

On the whole, respondents were quite positive in perceptions of advantages of building in increments, with group means falling below 4.0 in only four instances. This score indicated agreement on a scale between "somewhat" and "strongly" with all the advantage

variables. Feelings toward disadvantages appeared to be less strong since all means for disadvantage variables are above 2.0. This score indicates "somewhat agree" with the statement in the schedule, since scores were reversed in coding.

In the opinion of the researcher, the amount of interest revealed by this study for building by incremental stages was noteworthy. A high degree of interest was expressed by 15.5 percent of the sample, and an additional 32.4 percent rated themselves as fairly interested. In addition, 12.7 percent of the respondents indicated that they very probably will build for themselves in pre-planned increments, and eight (11.26 percent) of the subjects requested copies of one or both of the plans which illustrated building by stages in the graphic presentation. Several of the respondents indicated that, even though they themselves would probably not build by stages, they thought it a good idea for their young married son or daughter. Several also commented that this idea should be included in high school courses, at least to create awareness so young adults would know they have ownership alternatives other than mobile homes.

### Conclusions

The data presented in this study led to the conclusion that people who have favorable attitudes toward pre-planned incremental building tend to perceive economic benefits from building incrementally, are in a middle-income group (\$16,001 to \$25,000 annually), and have had some college education. Proportionately more people who live in multi-family housing or mobile homes favor this alternative, though in sheer numbers, the smaller proportion who live in

conventional houses and favor it may equal or exceed the smaller number living in non-conventional housing. Families who are less likely to select pre-planned incremental building tend to be living in owned conventional houses at the present time and are more likely to be single-parent families or nuclear families whose children are all under six years of age.

Since attitude toward incremental building appears to be determined primarily by perceptions of economic advantages, this would likely be the determining factor in its implementation. Perceived advantages may be cautiously extrapolated into perceived needs. General economic conditions as well as individual family circumstances will probably influence both the decision to implement and the outcome, and the need for further research in this area is indicated.

It should be emphasized that these conclusions are tentative and caution in generalizing should be observed. This study was made in a predominantly rural geographic area having relatively low population density and no large cities. It should also be recognized that the small number in the mobile home preference classification precluded a hold-out sample for validating the discriminant function. However, these findings should be useful in beginning a profile analysis of families for whom building in increments would provide a viable option, and in understanding group differences.

#### Recommendations

Based on the findings of this study, the researcher makes the following observations and recommendations:

1. Efforts to publicize and educate the populace are needed to create awareness of the concept of building by stages.



This is deemed especially appropriate to young adults. High school home economics classes, junior college, lower-level senior college students, young marrieds, and special interest groups of cooperative or university extension are suggested by this study as target populations where both need and interest exists. There are strong indicators in this study that this option could meet the special needs of young families in the middle-class housing market especially well at the present time.

2. Information of an empirical nature, based perhaps on case studies and/or other research, is needed to further develop the concept of building by pre-planned increments. Some areas for productive effort include:
  - a. Methods of financing incrementally built houses.
  - b. Design implications of life cycle stages and of emerging family types and lifestyles for building in increments.
  - c. Construction techniques and methods that would facilitate pre-planned add-ons.
  - d. Protective covenants and other regulations affecting the design and implementation of building houses by increments.
  - e. Effect of various aspects of the general economy on housing decisions.
3. Replication of this study in another area and with a larger sample is needed to validate the discriminant function analysis and to increase generalizations. Replication could further

develop the profile analysis and/or predictive technique for correctly identifying families for whom building in increments would have appeal. Other suggestions are to include moving from smaller to larger, newer housing as a fourth alternative, and to limit subjects to age 35 and under. The graphic presentation and personal interview are deemed necessary for respondents' understanding of the concept.

## REFERENCES

- Adaptable housing. Architectural Design, 1975, 45, 567-570.
- Agan, T., and Luchsinger, E. The House: Principles/Resources/Dynamics (Rev. Ed.). Philadelphia: J. B. Lippincott Co., 1965.
- Alexander, C., and Jacobson, M. Specifications for an organic and human building system. In E. Allen (Ed.), The Responsive House. Cambridge, The MIT Press, 1974.
- Angell, W. J. Housing alternatives. In C. S. Wedin and L. G. Nygren (Eds.), Housing Perspectives: Individuals and Families. Minneapolis: Burgess Publishing Co., 1976.
- Barnes, C. M. Social factors related to housing selection. Unpublished doctoral dissertation, University of Missouri, 1972.
- Beyer, G. H. Housing and Society. New York: The Macmillan Co., 1965.
- Bross, C. A. Normative housing deficits and residential adaptation. Unpublished master's thesis, Iowa State University, 1975.
- Butler, E. W., Chapin, F. S., Hemmens, G. C., Kaiser, E. J., Stegman, M. A., and Weiss, S. F. Moving Behavior and Residential Choice: A National Survey. National Cooperative Highway Research Program Report No. 81. Washington, D.C.: National Academy of Science-National Research Council, 1969.
- Churchill, G. A., Jr. Marketing Research: Methodological Foundations (2nd Ed.). Hinsdale, Ill.: The Dryden Press, 1979.
- City Directory, 1976, West Point, Mississippi. Richmond, Virginia: R. L. Polk and Co., 1976.
- Cooper, C. The house as symbol. In C. S. Wedin and L. G. Nygren (Eds.), Housing Perspectives: Individuals and Families. Minneapolis: Burgess Publishing Co., 1976.
- Dean, J. P. Housing design and family values. Land Economics, 1953, 29, 128-141.
- Dillman, D. A., Tremblay, K. R., Jr., and Dillman, J. J. Influence of housing norms and personal characteristics on stated housing preferences. Housing and Society, 1979, 6(1), 2-19.

- Dubos, R. Our buildings shape us. In C. S. Wedin and L. G. Nygren (Eds.), Housing Perspectives: Individuals and Families. Minneapolis: Burgess Publishing Co., 1976.
- Duvall, E. M. Family Development (3rd Ed.). New York: J. B. Lippincott Co., 1967.
- Edwards, C. M. Mobile homes are housing's best buy. Reprint from Mobile-Modular Dealer Magazine, March 20, 1972.
- Expandable home conscious of cost. Supplement to The Commercial Appeal (Memphis, Tenn.), May 22, 1977, p. 18-H.
- Extendable houses. Architectural Design, 1972, 42, 371.
- Foote, N., Abu-Lughod, J., Foley, M. M., and Winnick, L. Housing Choices and Housing Constraints. New York: McGraw-Hill, 1960.
- Gladhart, P. M. Family housing adjustment and the theory of mobility: a temporal analysis of family residential histories. Unpublished doctoral dissertation, Cornell University, 1973.
- Glazer, N. The effects of poor housing. In J. Pynoos, R. Schafer, and C. W. Hartman (Eds.), Housing Urban America. Chicago: Aldine Publishing Co., 1973.
- Grindley, W. C. Owner-builders: survivors with a future. In J. F. Turner and R. Fichter (Eds.), Freedom to Build. New York: The Macmillan Co., 1972.
- Hill, R., Foote, N., Aldous, J., Carlson, R., and MacDonald, R. Family Development in Three Generations. Cambridge: Schenkman Publishing Co., Inc., 1970.
- Holder, S. L., and Coulter, K. J. The importance of mobile home characteristics to the buyer and the seller. Housing Educators Journal, 1977, 4(2), 21-29.
- House prices: they're outasight. Reader's Digest, 1978, 112(669), 135-138.
- How to get the house you want. Better Homes and Gardens, 1975, 51(4), 68-73.
- Johnson's 1977 City Directory for Corinth, Mississippi. Loveland, Colorado: Johnson Publishing Co., 1977.
- Kern, Ken. The Owner-Built Home. New York: Charles Scribner's Sons, 1975.
- Main, J. A man's home is his capital. In C. S. Wedin and L. G. Nygren (Eds.), Housing Perspectives: Individuals and Families. Minneapolis: Burgess Publishing Co., 1976.

- Mattill, J. Housing: cost is more the problem. In C. S. Wedin and L. G. Nygren (Eds.), Housing Perspectives: Individuals and Families. Minneapolis: Burgess Publishing Co., 1976.
- McCray, J. W., and Day, S. S. Housing values, aspirations, and satisfactions as indicators of housing needs. Home Economics Research Journal, 1977, 5, 244-254.
- Michelson, W. Man and His Urban Environment. Reading, Mass.: Addison-Wesley, 1970.
- Michelson, W. Most people don't want what the architect wants. Transaction, 1968, 5(8), 37-43.
- Montgomery, J. E., and Kivlin, J. E. Place of residence as a factor in housing desires and expectations. Rural Sociology, 1962, 27, 483-491.
- Montgomery, J. E., and McCabe, G. S. Housing aspirations of southern appalachian families. Home Economics Research Journal, 1973, 2, 2-11.
- Morris, E., and Winter, M. A theory of family housing adjustment. Journal of Marriage and the Family, 1975, 37(1), 79-88.
- Morris, E. W., and Winter, M. Housing, Family, and Society. New York: John Wiley and Sons, 1978.
- News/Marketing. House and Home, 1972, 42(4), p. 36.
- Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., and Bent, D. H. Statistical Package for the Social Sciences. New York: McGraw Hill, 1975.
- Pynoos, J., Schafer, R., and Hartman, C. W. (Eds.). Housing Urban America. Chicago: Aldine Publishing Co., 1973.
- Rabeneck, A., Sheppard, D., and Town, P. Housing flexibility? Architectural Design, 1973, 43, 699-701.
- Rabeneck, A., Sheppard, D., and Town, P. Housing flexibility/adaptability. Architectural Design, 1974a, 49, 76-91.
- Rabeneck, A., Sheppard, D., and Town, P. The structuring of space in family housing: an alternative to present design practice. Progressive Architecture, 1974b, 55 (11), 100-107.
- Rossi, P. H. Why Families Move: A Study in the Social Psychology of Urban Residential Mobility. Glencoe, Ill.: The Free Press, 1955.
- Stevens, T. Personal interview at Stillwater Savings and Loan Bank, Stillwater, OK., November 26, 1976.

- Stewart, K. K. The discrepancy between desired and actual housing and the decision to move into a specific subsidized housing project. Unpublished doctoral dissertation, Cornell University, 1973.
- Stoeckeler, H. S., and Hasegarva, M. A technique for identifying values as behavioral potentials in making consumer housing decisions. Home Economics Research Journal, 1974, 2, 268-280.
- Sudman, S. Applied Sampling. New York: Academic Press, 1976.
- Taylor, M. User needs or exploiter needs? Architectural Design, 1973, 43, 728-732.
- Turner, I. D. Obstacles to owner-building: a quest for responsive house-building technologies. In E. Allen (Ed.), The Responsive House. Cambridge: The MIT Press, 1974.
- Turner, J. F., and Fichter, R. (Eds.). Freedom to Build. New York: The Macmillan Co., 1972.
- Uhl, K. P., and Schoner, B. Marketing Research: Information Systems and Decision Making. New York: John Wiley, 1969.
- U.S. Bureau of Census. Census of Population: 1970. Characteristics of the Population, 1, Part 26, Mississippi. Washington: U.S. Government Printing Office, 1973.
- U.S. Bureau of Census. Construction Reports. New and One-Family Houses Sold and For Sale (C-25 Series). Washington: U.S. Government Printing Office, 1980.
- U.S. Bureau of Census. Construction Reports. Residential Alterations and Repairs (C-50 Series). Washington: U.S. Government Printing Office, 1975.
- U.S. Bureau of Census. Current Population Reports. Money Income in the U.S. (Series P-60, No. 101). Washington: U.S. Government Printing Office, 1980.
- U.S. Department of Labor, Employment and Training Administration. Dictionary of Occupational Titles (4th Ed.). Washington: U.S. Employment Service, 1977.
- Veldman, D. Fortran Programming for the Behavioral Sciences. New York: Holt, Rinehart, and Winston, Inc., 1967.
- Webster's New Collegiate Dictionary. Springfield, Mass.: Merriam, 1953.
- Wellesley-Miller, S. Work notes on the need for a new building technology. In E. Allen (Ed.), The Responsive House. Cambridge: The MIT Press, 1974.
- What's selling best in single family? House and Home, 1976, 49(2), 74-79.

## APPENDIXES

APPENDIX A

STRUCTURED INTERVIEW SCHEDULE: INCRE-  
MENTAL BUILDING



## INCREMENTAL BUILDING: INTERVIEW SCHEDULE PART I

## FOR THE INTERVIEWER:

Introduce self and tell purpose of call. Determine if the household meets criteria according to limitations set forth for the study. If NO, go on to next sampling unit. If YES, find out if the person is the Head of Household or Spouse. INTERVIEW ONLY HEAD OR SPOUSE. Make no substitutions. If YES, proceed with interview. If NO, determine if either is available. If YES, proceed with either. If NO, go on to next sampling unit.

Explain that \_\_\_\_\_ County has been selected for a survey on housing because it has characteristics that are very similar to the state as a whole. Households to be interviewed were drawn at random from a map of county residents (or list of city residences). Emphasize that the information gained through the survey will help in developing educational programs about housing, possibly in developing a different approach to building houses. Explain that the responses they give will not be identified with them individually, but will be combined with responses of other families. Tell that it will take approximately 30 to 45 minutes of their time and ask for their cooperation.

IF RESPONDENT IS NOT WILLING, GO TO NEXT SAMPLING UNIT. IF CO-OPERATIVE, explain that the survey is primarily concerned with ways in which people go about buying and/or building houses, and that you would like to give a brief explanation as background for the questions.

## BACKGROUND BRIEFING:

Most people today build or move into homes that are complete and static; that is, whether the dwelling is large or small, it is planned and constructed to have a definite amount and arrangement of enclosed space (or rooms). As a rule the outside is covered with brick or boards and the house is considered finished. To change it later, or to add on, usually involves a great deal of tearing out and rebuilding, and the result may or may not be satisfactory in arrangement and appearance.

There is another way of building a house in which only a part of the house is built at one time. Provisions are made at the beginning for additional space to be added later, perhaps in two or more stages.



\_\_\_ 5. How would you describe your interest?

- \_\_\_ a. Mildly curious
- \_\_\_ b. Fairly interested
- \_\_\_ c. Very interested

#### GRAPHIC PRESENTATION

INTERVIEWER: I would like to show you some drawings of single-family dwellings and ask a few questions regarding your reaction to them.

One drawing is of a mobile home, one is of a complete house, and two are of houses that can be built in pre-planned add-on stages. Current prices were obtained from local builders and dealers and used to calculate the approximate cost of each. This cost is shown with each drawing, together with the size of the house (outside dimensions and square feet of living space), arrangement of space, and minimum lot size.

Please look carefully at each of these drawings, keeping in mind that they are examples only and could vary in style, room arrangement, etc. to suit your personal preferences.

#### SHOW DRAWINGS LABELED WITH SPECIFICATIONS AND CODE

(Explain each and give respondent time to examine.)

\_\_\_ 6. As you have been looking at these examples, you probably have been thinking of some things that would be good about building in pre-planned add-on stages and some things that would not be good. Would you tell me what advantages and disadvantages you see in this idea?

- \_\_\_ a. \_\_\_\_\_
- \_\_\_ b. \_\_\_\_\_
- \_\_\_ c. \_\_\_\_\_

A. I have listed some possible advantages and disadvantages of building in pre-planned add-on stages. GIVE RESPONDENT A COPY. As I read each statement, please tell me whether you agree or disagree with it, and how strongly you agree or disagree. Assign a value of 1 to those with which you "strongly disagree," 2 to those with which you "somewhat disagree," 3 to those with which you are "uncertain or undecided," 4 to those with which you "somewhat agree," and 5 to those with which you "strongly agree."

ADVANTAGES AND DISADVANTAGES		Strongly Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Strongly Agree
___ 7.	Could get a larger or better house without having to move.	1	2	3	4	5
___ 8.	The size and cost of house could be increased as income increases.	1	2	3	4	5
___ 9.	Could do part of work myself.	1	2	3	4	5
___ 10.	Could purchase sooner since I wouldn't have to save so much for a down payment as for a larger house.	1	2	3	4	5
___ 11.	May be easier to get a loan since loan amount would be smaller.	1	2	3	4	5
___ 12.	Could save on interest costs since I wouldn't have to borrow so much money to begin building.	1	2	3	4	5
___ 13.	Could avoid expenses of closing costs, moving, or re-furnishing associated with moving from house to house.	1	2	3	4	5
___ 14.	Cost of the first stage, including cost of land, would be too expensive for amount of living space provided.	1	2	3	4	5
___ 15.	Additions would probably be needed at a time when other family expenses would be heavy.	1	2	3	4	5
___ 16.	Choice of location could be limited because of zoning laws, subdivision codes, or other regulations.	1	2	3	4	5
___ 17.	Neighborhood might not be a desirable place to live in future years.	1	2	3	4	5
___ 18.	Financing may be more difficult than for a completed house.	1	2	3	4	5

ADVANTAGES AND DISADVANTAGES	Strongly Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Strongly Agree
___ 19. Resale before completing the additions may be more difficult than for a completely finished house.	1	2	3	4	5
___ 20. May have problems with construction and materials.	1	2	3	4	5
___ 21. Other (Specify) _____	1	2	3	4	5

\_\_\_ 22. With the situation we now have of rising costs of building and high interest rates on borrowed money, which of the following statements most nearly expresses your opinion?

- \_\_\_ a. I think it would be better to borrow the money to build a completely finished house even if it meant having to wait to buy or build.
- \_\_\_ b. I think it would be better to build small and make provisions for adding on later, risking a higher or lower building cost when the next stage is added.
- \_\_\_ c. I think it would be better to buy a mobile home and wait to buy/build until it is more needed and/or affordable.

B. Aside from financial resources, which of the houses you were shown best meets your housing needs at the present time? Please rank in order of choice. Begin with 1 for the house you think best meets your needs, 2 for the next best, 3 for third choice, and 4 for the least suitable.

\_\_\_ \_\_\_ 23. Completed house

\_\_\_ \_\_\_ 24. Mobile home

\_\_\_ \_\_\_ 25. Vertical add-on, first stage before completion

\_\_\_ \_\_\_ 26. Horizontal add-on, any stage prior to completion

C. Which of these would best fit your financial resources at the present time? Please rank in order of best fit. Begin with 1 for best fit, 2 for second best, 3 for third choice, and 4 for poorest fit.

\_\_\_ \_\_\_ 27. Completed house

\_\_\_ \_\_\_ 28. Mobile home

\_\_\_ \_\_\_ 29. Vertical add-on, first stage before completion

\_\_\_ \_\_\_ 30. Horizontal add-on any stage before completion

D. Which of these would best fit your needs 5 to 10 years from now, as you expect them to be? Please rank in order of choice. Begin with 1 for the one you think will best meet your needs, 2 for next best, 3 for third choice, and 4 for least suitable.

- 31. Completed house
- 32. Mobile home
- 33. Vertical add-on, first stage before completion
- 34. Horizontal add-on, any stage before completion

E. In your opinion, at which stage in the life of a family would the method of building in pre-planned stages be most suitable? Please rank from most suitable to least suitable, beginning with 1 for most suitable, 2 for next best . . . to 8 for least suitable.

- 35. Single person
- 36. Childless couple, wife under 35
- 37. Young couple with oldest child under 6 years of age
- 38. Mixed age family; couple with children pre-school through 20 years
- 39. Maturing family; couple with only teenage and young adult children living at home
- 40. Single-parent family, children living at home
- 41. Older couple, no children living at home
- 42. Miscellaneous family (non-related adults and others not in above categories)

#### INTERVIEW SCHEDULE PART II

INTERVIEWER: Observe and record (Inquire only if uncertain)

- 43. Housing style of household residence
  - a. Single family detached house
  - b. Townhouse
  - c. Duplex
  - d. Mobile home
  - e. Apartment (3 or more units attached)
- 44. Location of residence
  - a. Town or city over 10,000 population
  - b. Town or city 2,500 - 10,000 population
  - c. Town less than 2,500 population
  - d. Suburban within 2 miles of incorporated, population
  - e. Rural

45. Person responding to questionnaire (ascertained before interview)
- a. Male head of household
  - b. Female head of household (no husband living in household)
  - c. Female co-head of household (husband living in household)

46. Race
- a. White
  - b. Black
  - c. American Indian
  - d. Other

INTERVIEWER: In order that the information and opinions you have just given me can be used to the best advantage, I need to know more about the families who have been selected to participate in the survey. All information will be grouped with that from other families and will not be identified with you personally. Would you please answer some questions about your family and household?

47. What is your marital status?
- a. Now married
  - b. Single (never married)
  - c. Widowed
  - d. Separated or divorced

F. Which of these age groups includes you (and your spouse)?

48. Male Age
- a. Under 25
  - b. 25 - 34
  - c. 35 - 44
  - d. 45 - 54

49. Female Age
- a. Under 25
  - b. 25 - 34
  - c. 35 - 44
  - d. 45 - 54

G. Age ranges of children living at home or temporarily away (college, military service, etc.). Write in the number of children in each age group as applicable.

- 50. 5 years or under
- 51. 6 - 14 years
- 52. 15 years or older
- 53. No children living at home
- 54. No children

55. Are there members of your household other than yourself, your spouse, and children?
- a. Yes                    If yes, age and relationship \_\_\_\_\_
- b. No
- 
- H. What is the occupation of the head (and co-head) of household?
56. Male occupation
- a. Professional, technical, or managerial
- b. Clerical or sales
- c. Service
- d. Agricultural or related
- e. Processing
- f. Machine trades
- g. Benchwork
- h. Structural work
- i. Miscellaneous
- j. Unemployed
57. Female occupation
- a. Professional, technical, or managerial
- b. Clerical or sales
- c. Service
- d. Agricultural or related
- e. Processing
- f. Machine trades
- g. Benchwork
- h. Structural work
- i. Miscellaneous
- j. Unemployed
58. (Omit for female head, no husband present) Is employment of wife outside the home full-time or part-time?
- a. Not employed outside the home
- b. Full-time (30 hours or more per week)
- c. Part-time (less than 30 hours per week)
59. Are there other individuals who live in the household and contribute to family income?
- a. Yes
- b. No
60. What was your combined family income before taxes last year?  
(GIVE RESPONDENT CARD FOR RESPONDING BY INCOME CATEGORY)
- |                                    |                                    |
|------------------------------------|------------------------------------|
| <u>    </u> a. Less than \$5,000   | <u>    </u> f. \$20,001 - \$25,000 |
| <u>    </u> b. \$5,000 - \$8,000   | <u>    </u> g. \$25,001 - \$30,000 |
| <u>    </u> c. \$8,001 - \$12,000  | <u>    </u> h. \$30,001 - \$40,000 |
| <u>    </u> d. \$12,001 - \$16,000 | <u>    </u> i. Over \$40,000       |
| <u>    </u> e. \$16,001 - \$20,000 |                                    |



J. What is the highest formal education attained by you (and your spouse)?

\_\_\_ 61. Male education

- \_\_\_ a. Eight years or less
- \_\_\_ b. Some high school
- \_\_\_ c. High school graduate
- \_\_\_ d. Some college
- \_\_\_ e. College graduate
- \_\_\_ f. Post-graduate or professional

\_\_\_ 62. Female education

- \_\_\_ a. Eight years or less
- \_\_\_ b. Some high school
- \_\_\_ c. High school graduate
- \_\_\_ d. Some college
- \_\_\_ e. College graduate
- \_\_\_ f. Post-graduate or professional

\_\_\_ 63. Do you own or rent your present residence?

- \_\_\_ a. Own or am buying
- \_\_\_ b. Rent
- \_\_\_ c. Other arrangement

\_\_\_ 64. How long have you lived in this community?

- \_\_\_ a. More than 15 years
- \_\_\_ b. 11 - 15 years
- \_\_\_ c. 6 - 10 years
- \_\_\_ d. 2 - 5 years
- \_\_\_ e. Less than two years

\_\_\_ 65. Do you expect to be living in this community five years from now?

- \_\_\_ a. Yes
- \_\_\_ b. No
- \_\_\_ c. Don't know or uncertain

\_\_\_ 66. Do you think that you, yourself, will build a house by pre-planned stages at any time in the future?

- \_\_\_ a. Yes, very probably
- \_\_\_ b. Possibly, but not very likely
- \_\_\_ c. No, probably not

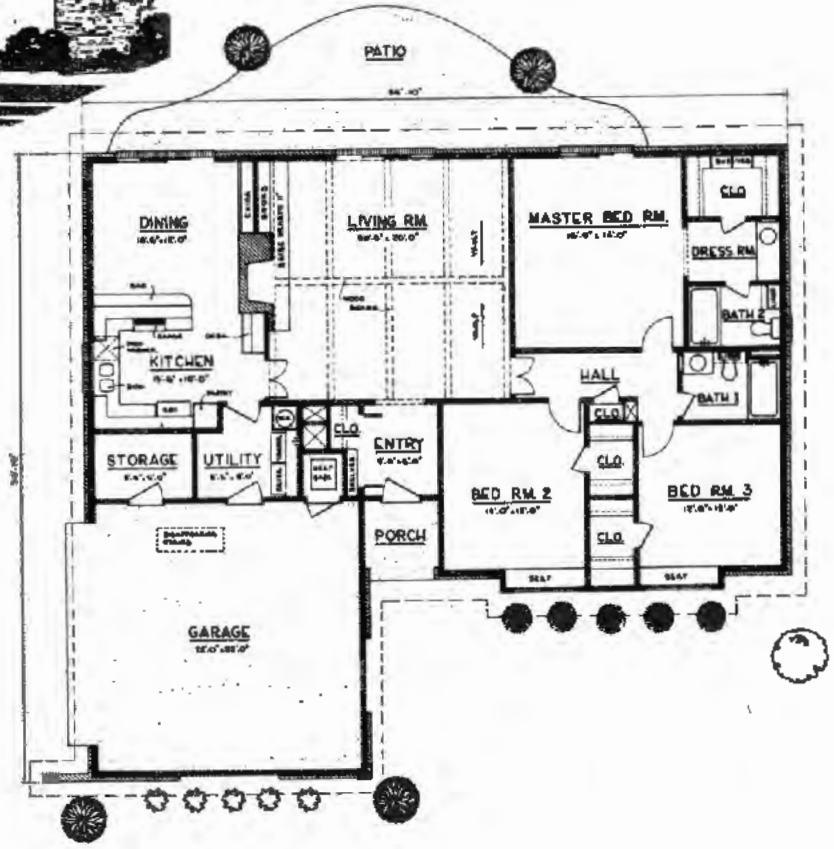
THANK YOU FOR YOUR COOPERATION

APPENDIX B  
GRAPHIC PRESENTATIONS USED IN  
THE INTERVIEW

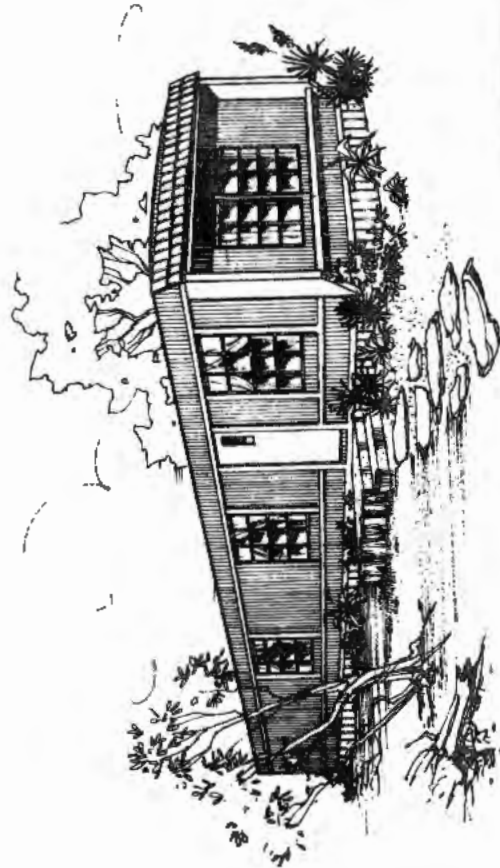


## COMPLETE HOUSE Choice A

LIVING AREA	1671 SQUARE FEET
GARAGE	484 SQUARE FEET
STORAGE	65 SQUARE FEET
DIMENSIONS	50'10" x 56'10"
APPROXIMATE COST	\$50,000.00
MINIMUM LOT	100 x 100

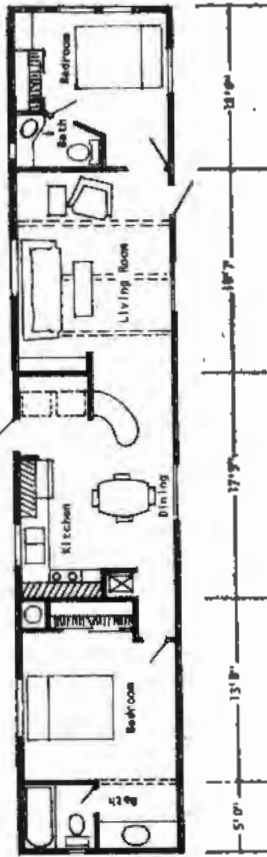


# MOBILE HOME Choice B



Model 6579MBF - 742 Sq. Ft.

Plan A3-575

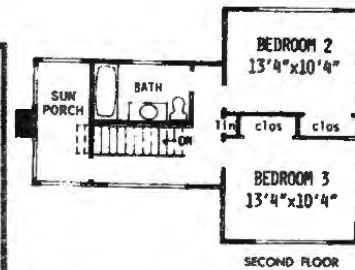


LIVING AREA	856 SQUARE FEET
DIMENSIONS	14' x 64'
MINIMUM LOT SIZE	60' x 100'
APPROXIMATE COST	\$10,500.00
( UNFURNISHED )	

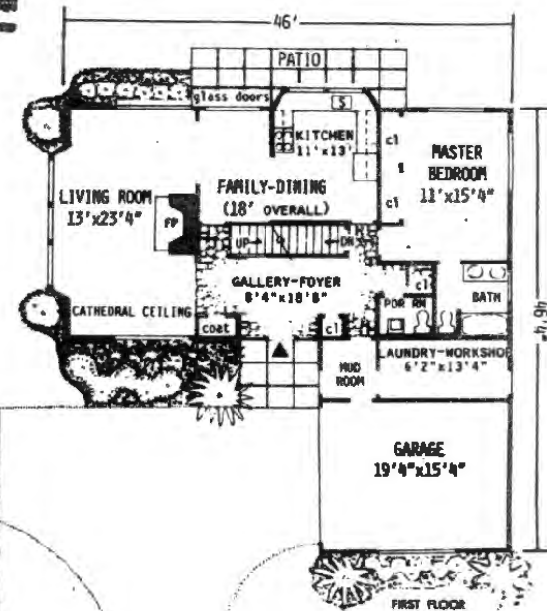


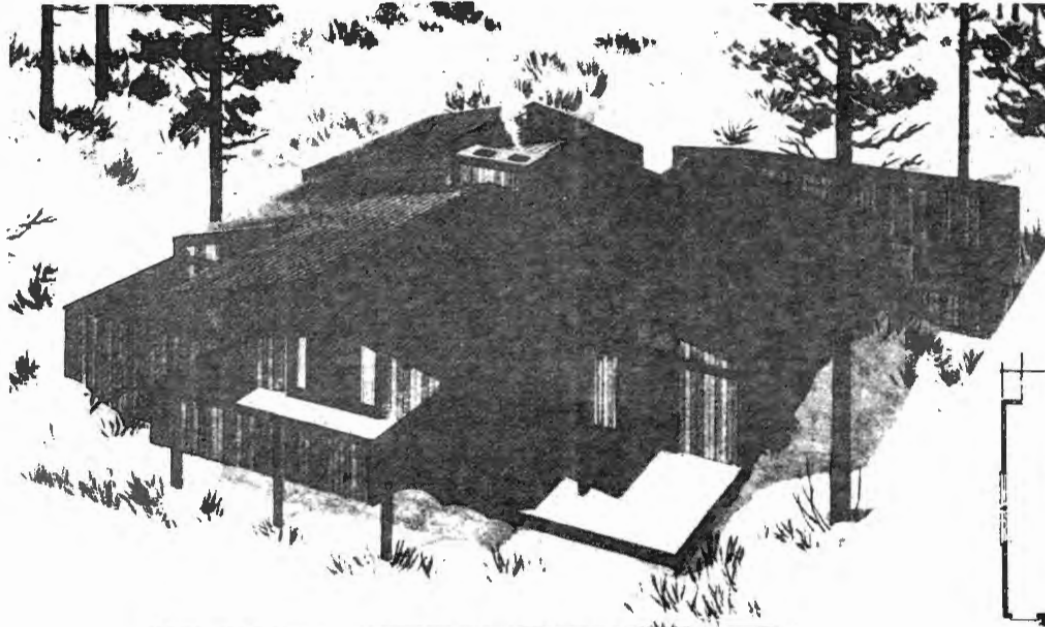
## STAGE BUILT HOUSE Vertical Addition Choice C

LIVING AREA, FIRST FLOOR	1090 SQUARE FEET
GARAGE, LAUNDRY, MUD	429 SQUARE FEET
DIMENSIONS	46' x 46' <sup>4</sup>
APPROXIMATE COST (FIRST FLOOR)	\$33,685.00
PLUS EXTERIOR (SECOND FLOOR)	\$7,150.00
TOTAL COST, FIRST STAGE	\$40,835.00
MINIMUM LOT SIZE	100' x 100'



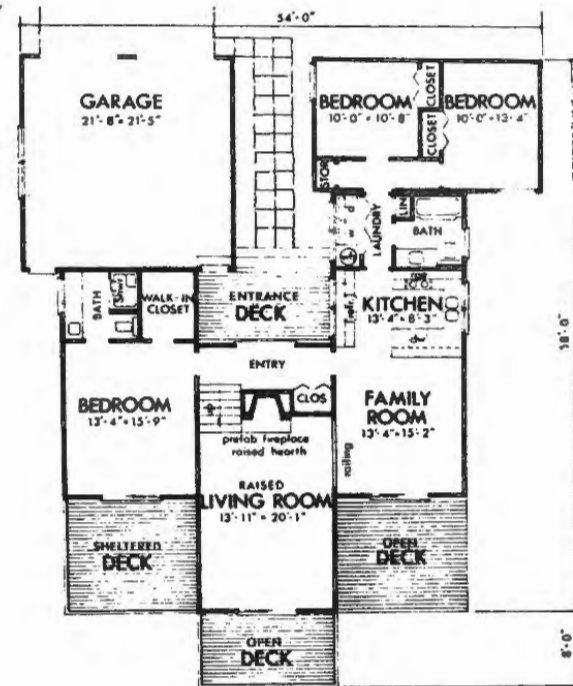
SECOND FLOOR, LIVING SPACE	550 sq. FT.
APPROX. COST, FINISHING	\$6,600.00
INITIAL COST, BUILDING	\$40,835.00
TOTAL COST, FINISHED	\$47,435.00
TOTAL LIVING SPACE	1640 sq. FT.





## STAGE BUILT HOUSE Horizontal Addition Choice D

GARAGE ADDITION	495	SQUARE FEET
TOTAL LIVING SPACE	1520	SQUARE FEET
TOTAL DECK	568	SQUARE FEET
DIMENSIONS	54x66'	
APPROX. ADDITIONAL COST	\$7,425.00	
TOTAL COST, FINISHED	\$48,833.00	
MINIMUM LOT SIZE	100x125'	



## Stage built, Horizontal, cont'd Choice D



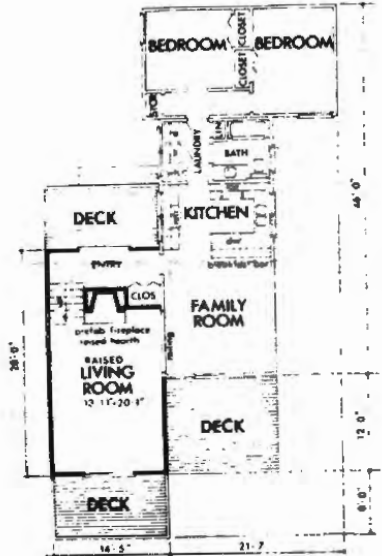
FIRST STAGE

LIVING	448 sq. FT.
DECK	168 sq. FT.
DIMENSIONS	14 x 44
MINIMUM LOT	100 x 125
APPROX. INITIAL COST	\$12,208.00



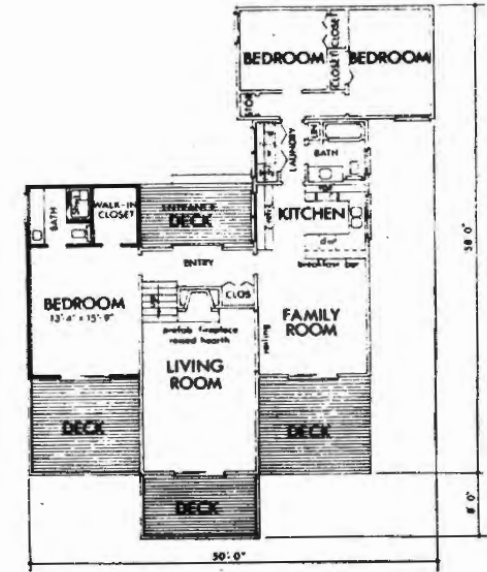
SECOND STAGE

BEDROOM ADDITION	336 sq. FT.
TOTAL LIVING	784 sq. FT.
DECK	168 sq. FT.
DIMENSIONS	24 x 58
APPROX. ADDED COST	\$8,400.00
TOTAL COST	\$20,608.00



THIRD STAGE

LIVING ADDITION	406 sq. FT.
DECK ADDITION	232 sq. FT.
TOTAL LIVING	1190 sq. FT.
APPROXIMATE ADDITIONAL COST	\$11,542.00
TOTAL COST	\$32,110.00



FOURTH STAGE

BEDROOM ADDITION	330 sq. FT.
DECK ADDITION	168 sq. FT.
TOTAL LIVING SPACE	1520 sq. FT.
APPROXIMATE ADDITIONAL COST	\$8,250.00
TOTAL COST	\$40,360.00

VITA<sup>2</sup>

Betty Malone Fulwood

Candidate for the Degree of

Doctor of Education

**Thesis:** ATTITUDES AND PERCEPTIONS TOWARD INCREMENTAL BUILDING AS  
A FAMILY HOUSING ALTERNATIVE

**Major Field:** Home Economics Education

**Biographical:**

**Personal Data:** Born in Guntown, Mississippi, the oldest child of Hurley R. and Mattie McMillan Malone. Widow of John Robert Fulwood, Corinth, Mississippi, and mother of two daughters, Leigh Fulwood Wicker and Jean Renee Fulwood.

**Education:** Graduated from Guntown Consolidated High School in 1948; received the Associate of Arts degree from Northeast Mississippi Junior College in 1950; received the Bachelor of Science in Home Economics degree from Mississippi State College for Women in 1952; received the Master of Arts degree in General Home Economics from The University of Mississippi in 1973; enrolled in doctoral program at Oklahoma State University in 1975; completed requirements for the Doctor of Education degree at Oklahoma State University, December, 1980.

**Professional Experience:** Extension Home Economist: Alcorn and Benton Counties, Mississippi, 1952-55, 1956-63; Vocational Home Economics Teacher; Farmington High School, Corinth, Mississippi, 1955-56; Design and Drapery business, Corinth, Mississippi, 1968-72; Instructor, The University of Mississippi, 1973-77; Assistant Professor, The University of Mississippi, 1977-80.

**Professional Organizations:** American Home Economics Association, Mississippi Home Economics Association, American Association of Housing Educators, Mississippi Consumers Association, Kappa Omicron Phi, Phi Upsilon Omicron.