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Features of Selected Homes, Owner Built for Their Own
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This study was undertaken to obtain an evaluation of housing features from home owners who have had opportunity to study them in conditions of actual use. Cooperators were limited to those persons who have built homes for occupancy of their own families within the period from 1930 to 1941. All families had children and all homes were within the \$5,000 to \$12,000 price range for dwelling only, and were located in the Willamette Valley region in Oregon.

Data obtained from the 33 cooperators were gathered on check sheets which listed certain fundamental points, but the important part of the study is based on free and unprompted listing by each cooperator of features of her home which she considered desirable and worth repeating, and those considered undesirable and worthy either of change or of omission in future dwellings.

From the findings of this study it was hoped that information could be obtained which would be of value to future builders of homes in this region.

The steps in the carrying out of the study are as follows:

1. Conferences with authorities in the field helped determine the nature and the scope of the study.
2. Readings on literature in the field helped gather knowledge of the possibilities of the housing field.
3. A check list was prepared for the gathering of data from cooperators. This was tested on selected subjects and revised.
4. Preliminary contact having been made, and permission obtained to make the interview, the 33 cooperators of the survey were visited and their evaluation of housing features in their homes recorded.

5. Compilation of data gathered from all the cooperators was made and the conclusions of the investigator were drawn therefrom.

Many of the findings of this study bear out those of other investigators in the field of housing. Some, however, have particular local significance or show variation from the nation-wide standard. Some of these are:

1. Fireplaces are popularly accepted features in the homes in this study, all having from one to four in number, and all but one having a fireplace in the living room. In their evaluations, however, homemakers showed that in many instances the fireplace received comparatively little use. This was particularly true in homes with automatic heating systems, where use of the fireplace upset the heat balance of the home.

2. In their evaluation of different areas for dining, cooperators showed marked preference for a separate dining room and for either a nook or some space in the kitchen for service of meals. In this last respect there seemed no choice so long as there was plenty of room for dining and serving.

3. Preference for at least one bedroom on the first floor, and for a bathroom also located here, was shown by cooperators in whose homes there were small children. There were also many who approved the idea of a study or a second bedroom on the first floor which could be used in case of illness or house guests.

4. Approval of a utility room for laundry on the main floor of the house was noticeable among cooperators surveyed.

5. Basement areas for heating plant, for general storage, for play space, and for other uses was indicated as being desirable in many of the homes, even when the laundry was located on the first floor.

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EVALUATION BY HOMEMAKERS OF SPECIFIC
BUILDING FEATURES OF SELECTED HOMES,
OWNER BUILT FOR THEIR OWN OCCUPANCY

by

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TABLE OF CONTENTS

| Chapter | | Page |
|---------|--|------|
| I | INTRODUCTION AND STATEMENT OF THE PROBLEM . | 1 |
| II | METHODS OF PROCEDURE. | 8 |
| | A. Consultations | 8 |
| | B. Introduction to Reading | 8 |
| | C. A Check List. | 8 |
| | D. Cooperators | 9 |
| | E. Personal Interviews | 9 |
| | F. Compiling of Data | 10 |
| III | SURVEY OF RECENT STUDIES AND FINDING IN THE FIELD OF HOUSING | 11 |
| | A. The President's Conference on Home Building and Home Ownership. | 12 |
| | B. "Design and Construction of Dwelling Unit for the Lower Income Family" | 13 |
| | C. "Study of Home Management in Rela- tion to Child Development" | 13 |
| | D. "Basic Principles of Healthful Housing" | 14 |
| | E. "Housing for the Family". | 14 |
| | F. The Niagara-Hudson Survey | 15 |
| IV | ACCOUNTS OF THIRTY-THREE CASE STUDIES | 17 |
| | Composition of the Household | 17 |
| | Source of House Plans. | 19 |
| | Facilities Affecting Heating | 22 |
| | Heating. | 25 |
| | Fireplaces | 27 |
| | Woodlifts. | 29 |
| | Dining Facilities. | 30 |
| | Laundry Facilities | 33 |
| | Uses Made of Basement Space. | 37 |
| | Number and Distribution of Rooms | 39 |
| | Likes and Dislikes or Desires Expressed by Cooperators. | 41 |
| | Satisfaction Derived from Relationship between Size and Number of Rooms. | 41 |
| | Storage Facilities | 43 |
| | Ease of Cleaning and Maintenance | 46 |

| Chapter | | Page |
|---------|--|------|
| | Factors Involving Health, Comfort and Safety | 48 |
| | Resources for Play and Recreation | 49 |
| | Bathroom, Lavatory, and Shower Facilities | 51 |
| | Sleeping Area | 52 |
| | Relation of Areas to Each Other | 53 |
| | The Kitchen Area | 56 |
| V | EVALUATION OF FINDINGS OF CASE STUDIES . . . | 60 |
| | Source of House Plans | 60 |
| | Uses of the Basement | 62 |
| | Laundry Facilities | 64 |
| | Dining Facilities | 66 |
| | Heating Facilities | 67 |
| | Kitchen | 69 |
| | Relationship Between Rooms and the Satis- faction Derived from the Home | 72 |
| | Sleeping Area | 74 |
| | Play and Recreation Area | 76 |
| | Bathroom Facilities | 79 |
| | Maintenance and Ease of Cleaning | 83 |
| | Safety | 85 |
| | Storage Facilities Other than in the Kitchen | 90 |
| | Built-in Storage Spaces and Suggested Locations | 93 |
| VI | SUMMARY AND CONCLUSIONS | 98 |
| | Recommendations for Further Study | 110 |
| | REFERENCES | 111 |
| | APPENDIX A - CHECK LIST USED IN SURVEY . . . | 114 |
| | APPENDIX B - CASE STUDY 8 | 117 |
| | APPENDIX C - CASE STUDY 11 | 123 |
| | APPENDIX D - COMPOSITION OF HOUSEHOLD | 129 |
| | APPENDIX E - DISTRIBUTION OF FIREPLACES AND THEIR LOCATION IN THE HOUSES SURVEYED . . | 131 |
| | APPENDIX F - DISTRIBUTION AND NUMBER OF ROOMS IN HOMES SURVEYED | 133 |

| | |
|---|-----|
| APPENDIX G - COOPERATORS' EVALUATIONS OF RELATION BETWEEN SIZE AND NUMBER OF ROOMS AND SATISFACTION DERIVED FROM THE HOME . . | 135 |
| APPENDIX H - COOPERATORS' EVALUATION OF STORAGE SPACE OTHER THAN IN THE KITCHEN . . | 137 |
| APPENDIX I - COOPERATORS' EVALUATION OF FACILITIES AFFECTING MAINTENANCE AND EASE OF CLEANING | 140 |
| APPENDIX J - COOPERATORS' EVALUATION OF FEATURES AFFECTING HEALTH, COMFORT, AND SAFETY IN THE HOME | 142 |
| APPENDIX K - COOPERATORS' EVALUATION OF SATISFACTION DERIVED FROM AVAILABLE RESOURCES FOR PLAY AND RECREATION. | 144 |
| APPENDIX L - COOPERATORS' EVALUATION OF BATHROOM, LAVATORY, AND SHOWER FACILITIES | 146 |
| APPENDIX M - COOPERATORS' EVALUATION OF AREAS FOR SLEEPING | 148 |
| APPENDIX N - COOPERATORS' EVALUATION OF HOMES WITH REFERENCE TO RELATION OF AREAS TO EACH OTHER. | 150 |
| APPENDIX O - COOPERATORS' EVALUATION OF THE KITCHEN AREA | 153 |

LIST OF TABLES

| Table | Page |
|--|------|
| I Median Income Levels of Selected Groups with Corresponding Projection of Home Values According to Accepted Standards | 6 |
| II Source of House Plans and Reaction of Present Tenants to These Plans | 22a |
| III Occurrence of Heat-Retaining Features in Construction of Homes | 23 |
| IV Types of Fuel Used in Heating Plants of Homes Surveyed | 26 |
| V Location of Facilities for Meal Service . . . | 34 |
| VI Relationship Between Location of Laundry Facilities and the Satisfaction of Co- operator Using These. | 38 |

EVALUATION BY HOMEMAKERS OF SPECIFIC
BUILDING FEATURES OF SELECTED HOMES,
OWNER BUILT FOR THEIR OWN OCCUPANCY

CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

It has long been an acknowledged fact that the housing facilities of any family have a most important influence and bearing on all phases of the life and development of each and every member of that group. Physical welfare, financial status, social development, standards of family life, and even to some extent intellectual attainment, are directly influenced by the dwelling. Since the family is said by sociologists to be the basic and stabilizing unit in human progress, those things which aid its improvement and development are deemed worthy of attention.

Though few would deny that shelter is one of the fundamental needs of human existence, the fact still remains that the field of housing is one in which change is slow and where the voice of tradition speaks louder than that of the functional demands of modern living.

Within the period of the last fifteen or twenty years, comparatively great strides have been made in modernization

of ideals and standards for the American home and also in the household equipment and furnishings used. This emphasis has brought greater comfort and pleasure to all members of the family and particularly to the homemaker in whose hands lies the responsibility for the physical upkeep and standards of living within the particular dwelling.

Much time and attention have been given to the aims and purposes involved in the choice and selection of a home by outstanding leaders in the field of design. Statements of some of their opinions are revealing.

The aim of the house should be to reduce to the minimum the burdensome features of living, and to enable the family to have an economical and relaxing home life.

Geddes (7:128)

The essentials of good housing involve the house itself, the relation of the house to its neighbors and to the whole community. As to the house itself, the essentials are few and simple: first, a building that will provide shelter from the weather. Then, adequate light for every room; sunlight for as many rooms as possible; adequate ventilation for every room; adequate and convenient supply of pure water; adequate and convenient toilet facilities; such a number of rooms and such an arrangement of rooms that privacy is possible. Adequate heating facilities and an adequate supply of hot water are considered essentials by some people.

President's Conference on Home
Building and Ownership (17:E:10)

Recent changes introduced into housing practices have been many and varied. As there has not been agreement among those in charge of the technical phases of building, neither has there been marked uniformity in the tastes and opinions of those in whose interests the work was being done, particularly the homemakers. Also the criticism is rather frequently heard that those who do the planning and the construction have no practical knowledge of the work which is to be carried on in the areas they are creating and shaping.

In view of the present situation the writer feels it is important to determine the evaluation placed by owners on some of the features which, through rather common acceptance, have come to be considered characteristic of modern housing.

Mechanical devices and other products of industry that are designed for housing comfort have been developed so rapidly and traditions in housing practices still are so strong the home owner has difficulty in evaluating the various ways of spending his money before he has the experience of living with the new feature. This situation is probably responsible for the statement made by several cooperators of this survey to the effect that one really

should build two houses--one for experience and one for occupancy.

The general purpose of this study is to determine the relative value placed upon certain housing features by selected home owners who have had the opportunity to study them under conditions of actual use.

The housing features considered were those in which there was possibility of choice on the part of a builder of a house in a given price class. They include such items as heating arrangements; family meal centers; areas for family social life and recreation; bathroom facilities; kind and quantity of storage facilities; and interrelation of rooms and areas within the home.

Homes considered in this study are all located within the Willamette valley in Oregon, and all have been constructed since 1930 by their owners and for their own occupancy.

Houses included in this study all fall between the estimated values of \$4,000 and \$12,000 at the time of building, these estimates applying to dwellings only and not to the sites upon which houses are placed, to furnishings or landscaping. This range of values was chosen for the following reasons.

Although it is possible to build homes for less than the selected minimum figure (\$4,000), when this is done the choice of construction details is definitely limited. Similarly, above the upper limit of this range (\$12,000), it is possible to construct a house with such a large choice of features that an accurate evaluation is possibly less valid.

The range of housing values selected for this study checks rather closely with the values of homes which are recommended for people living on the prevailing income levels in this part of the country. According to the Carter study (2:19) done in 1940-1941, the median income obtained from two groups of married graduates of the school of home economics at Oregon State College between the years 1925 and 1939 was \$2,750. The Leehman study (3) of families of freshmen registered in the school of home economics at Oregon State College in the fall term 1940 showed the median family income to be \$2,375. A study carried out in 1936 by the United States Department of the Interior (14:138) showed that the median income of college alumni (all men and from the western states) was \$2,091 eight years after graduation, and \$1,888 for the same classification five years after graduation.

Accepting the standard of from two to two and one-half times the annual income of the family as a suitable value for the family dwelling (5:248), this suggests the low house value level for the families represented in all of the studies as \$3,776, and the upper house value level as \$6,875. This range was reached by determining the range between two times the value of the lowest median figure for each study and two and one-half times the value of the higher median figure for the corresponding group, and then in making a composite of the values assumed for all studies. This is more completely illustrated in the following table.

TABLE I

Median Income Levels of Selected Groups
with Corresponding Projection of Home Values
According to Accepted Standards

| Study | No. of Cases | Year Study was Made | Median Income Level for Group | Estimated Value of Homes at this Level | |
|-------------------------|--------------|---------------------|-------------------------------|--|---------|
| | | | | Minimum | Maximum |
| Carter | 200 | 1941 | \$2,750 | \$5,500 | \$6,875 |
| Leehman | 149 | 1941 | 2,375 | 4,750 | 5,938 |
| U. S. Dept. of Interior | | | | | |
| 5 Yr. Group | 866 | 1937 | 1,888 | 3,776 | 4,720 |
| 8 Yr. Group | 662 | 1937 | 2,091 | 4,182 | 5,228 |

Inasmuch as the investigator made no attempt to limit salary levels of families included in this study, but merely to keep the group below the level where almost any desired feature could be included, an upper value for the survey limit of \$12,000 was set arbitrarily.

The families included in this study fall within two groups: one with infants and very young children, whose care would necessarily influence not only the time schedule of the family, but the actual physical arrangement of the work and storage areas of the home; and the other group, those families with older children whose social activities, studies, and special interests or hobbies would call for some privacy and also freedom of action within the home walls or grounds.

Attempt has been made in this study to gather and interpret the information obtained by personal interviews with selected homemakers that it may prove of value to others who may be planning to build homes for their own occupancy. The method used is simply pointing out reasons why certain features have been considered of either positive or negative value.

CHAPTER II

METHOD OF PROCEDURE

A. Consultations were held with the major professor in charge of the thesis to determine the suitability of the study, its scope, and the form it should take. Trends and problems in modern housing were discussed with Wilson (18) to ascertain what features had best be considered in this study and also to determine the best methods of procedure in gathering and analyzing data.

B. Introduction to Reading consisted of scanning of periodicals and recent publications of various kinds which would have bearing on this field. From these articles it was possible (1) to discover current trends, (2) to gain information about the field of possibilities calling for consideration, (3) to obtain the opinion of architects, designers, and others in some way qualified to be considered experts in the field, and, most important of all was the opportunity (4) to gain information from recent studies bearing on some related phase of housing. More detailed information on this phase of the study is summarized and included in the body.

C. A Check List was drawn up which was to be used by the investigator in gathering and recording data

secured from the cooperators. This check list was then tested in several preliminary interviews with cooperators. Revisions were made and the check list again tested for adequacy. (See Appendix A.)

D. Cooperators were then obtained for the study to the total number of thirty-three. All were homemakers; all had children in the family, some being infants and some individuals of college age; all had built homes for their own occupancy since 1930. Attempt was made to obtain varied standards of living and patterns for family activities. Four of the group had maid service while the others did their own housework or depended on occasional help of someone paid by the hour. Two of the homemakers are employed outside the home, while the remainder count homemaking as their full-time vocation. Though no consideration was given the matter in selection, both parents were living in all cases.

E. Personal Interviews with all of the cooperators were then obtained by the investigator, preliminary contact having already been made. The findings were recorded on the revised check list and as soon as possible after this phase of the survey, full reports of each case were compiled from the check list, plus additional notes made immediately after the survey. (See Appendix B and Appendix C.)

During the interview an attempt was made to get the cooperator's own evaluation of the features being considered, and to do so in light of the following questions:

1. "Has said feature proved practical under conditions of actual use?"
2. "If you were rebuilding, under similar conditions of family makeup and financial status, would you repeat this particular feature?"
3. Reasons why certain items were either liked or disliked, or changes, either desired or accomplished, were also noted. As soon as possible after the completion of the interview, the writer recorded more complete details plus impressions of the interviewer. (See Appendix B and Appendix C.)

F. Compiling of Data was next undertaken. For this purpose two check sheets were made, one showing the facts relating to the physical makeup of the house and the family, and the other showing frequency with which certain likes or dislikes of any feature appeared in the survey and the reasons underlying these. Thus it was possible to draw certain conclusions and even to offer some generalizations and some suggestions from these data.

CHAPTER III

SURVEY OF RECENT STUDIES AND FINDINGS IN THE FIELD OF HOUSING

After consideration of recent studies and findings in the general field of housing, several things became evident. First, much work had been done with the lower income level groups in an effort to appraise and improve the housing facilities made available to them. This is particularly true of the northeastern part of the United States, and especially New York City.

Here several studies have been made which show existing conditions and practices; which make a composite of the expressed needs of the homemakers and the families they represent; and which then proceed to list recommendations based upon these findings. In many respects these studies deal with conditions not existing to any extent in the Pacific Northwest area, and for this reason their chief value lies in the list of needs expressed by the cooperators.

Other studies were found having indirect bearing on the problem of this study, on home management in relation to child development; on healthful housing practices; and similar fields.

By far the most comprehensive piece of investigation is the reports of the committees of the conference on home building and ownership, called by President Hoover in 1930. This covered most fields having any relation to housing and included not only the results of numerous surveys, but the recommendations of the experts making up the committees.

A more detailed listing of these studies follows, and composites of their findings are shown in Chapter V of this study, where they are checked against data from the local cases.

A. The President's Conference on Home Building and Home Ownership was called in 1930 by President Hoover.

The purpose as expressed by him was to

. . . . undertake the organization of an adequate investigation and study on a nationwide scale of the problems presented in home ownership and home building, with a view to the development of a better understanding of the questions involved and the hope of inspiring better organization, and removal of influences which seriously limit the spread of home ownership, in both town and country.

Experts were called together to determine existing conditions and to formulate suggestions for future practices. This conference was the first of its kind to pool all available information in the country on the many phases relating to housing.

Of particular value to this writer was the report of the Committee on Homemaking, Housing and Family Life, of which the chairman was Miss Martha Van Rensselaer, Director, New York State College of Home Economics, Cornell University, Ithaca, New York

B. "Design and Construction of Dwelling Unit for the Lower Income Family," by Elizabeth Coit, A.I.A., and appearing in Octagon, the journal of the American Institute of Architects for October and November of 1941, is a study made to show a tenant's view of his housing. Interviews and observations made by the author of over eighty developments in the eastern part of the country form the basis for the author's conclusions.

C. "Study of Home Management in Relation to Child Development," by Ruth Lindquist, is based on a study undertaken in 1929 by the committee on child development and parent education of the American Home Economics Association, and by the two honor societies, Omicron Nu and Phi Upsilon Omicron. In an attempt to determine the attitudes and practices in the field of homemaking, data were gathered by questionnaire from 355 families, replies coming from 306 women and 229 men.

Of particular value to this study was Chapter III, entitled, "Needed, a House that Fits the Family." Here

are found compilations of the expressed needs of these families.

D. "Basic Principles of Healthful Housing," is a preliminary report by the committee on the hygiene of housing of the American Public Health Association, C. E. A. Winslow chairman. It appears in the American Journal of Public Health for March, 1938. Working on the premise that no housing program can be sound unless the shelter it provides is healthful, the American Public Health Association organized the above named committee, which was also to function as the organ of cooperation for the United States with the Housing Commission of the Health Organization of the League of Nations. As a beginning to this work the basic health needs effected by housing were formulated. They consist of thirty basic principles, with specific requirements and suggested methods of attainments recommended for each.

E. "Housing for the Family" is a study conducted by the committee on housing of the Women's City Club of New York in March, 1936. Gladys A. LaFetra was the committee chairman. Brought about by the belief that many housing developments are built without consulting either the tastes or the needs of the housewives, this study was undertaken in an effort to establish a sound basis for

future work. One thousand four hundred and fifty housewives were interviewed and 1,395 resulting questionnaires selected as complete enough to warrant analysis. In addition to the individual personal interviews, the investigators discussed the subject matter of the report with mothers' clubs and other groups at settlements and churches, holding in all thirty-nine such meetings. Facts reported, and certain of the conclusions, apply only to New York specifically, and only to slum dwellers. However, many conclusions and recommendations are applicable to any region of the United States and to any housing level.

The Niagara-Hudson Survey was conducted by a system of public utilities operating in upper New York State. Questionnaires prepared by the editor of The Architectural Forum were sent to 11,000 owners of homes ranging from \$5,000 to \$15,000. The likes and dislikes and the satisfied and unsatisfied needs expressed by the cooperators were summarized, along with other data on favored types of architecture for certain regions, et cetera.

After completion of this survey of recent studies in housing it became apparent that although work had been done in this locality on some details of housing, particularly among rural homes, little attention had been paid to

the evaluation of features of housing available to those on an income level permitting considerable choice. To do that thing, with the object of making such data available for the benefit of those who may be building in the future, is the purpose of this study.

CHAPTER IV

ACCOUNTS OF THIRTY-THREE CASE STUDIES

The data gathered by the survey were broken down into certain logical divisions. These were compared separately, and then in some cases were checked against each other, giving meaning to the information which has been gathered. The physical structure of the house has been considered and such information compiled as the number of rooms on each floor; the composition of the household; the facilities for doing laundry, for serving meals, and for heating the house; along with other details thought to be of value. The standards set up by other studies will later be compared with the results of this study.

Composition of the Household

The families living in the homes chosen for this survey represent a varying group. In all of them both parents are living, although this was not a factor in making the selection of cases. Ages of children vary from infants just under one year of age to those still dependent upon the family for financial aid, though they may be more than legal age. For ease of classification the

groups have been separated into three divisions according to the ages of the children.

First is the group of families with pre-school children, or those with children under six years of age. Eighteen homes, or 55 per cent of the total group fall within this classification. It is these children who need rather close supervision and for whom mothers prefer some play space on the first floor rather than a recreation room in some other part of the house.

Second are those homes with grammar-school age children. This group includes 17 homes, or 52 per cent of those surveyed. It is at this level that there begins to be real use and high value placed on the recreation centers which are away from the living quarters in the main part of the house. The boys and girls of this age have clubs, group activities, and also rather strenuous ideas of what constitutes entertainment, so a "rumpus" room devoted to their pleasure is often well named.

Third are homes with high school- and college-age sons and daughters. Those families surveyed show still greater changes in tastes and interests. Recreation rooms are still used, but there is a seeming increased demand for use of the main living rooms of the house for entertaining. Often this is coupled with the desire on the

part of the parents for a second sitting room area, either in study or bedroom, where they may retire. Six of the homes, or 18 per cent of the entire group, had children of this age who still lived at home. In some instances they attended schools away from home, but this was still their general headquarters during vacations.

Needless to say, there was some overlapping of the age groups; and nine homes, or 27 per cent, had children in two or more of the classifications. Detailed information of the ages of children and the status of other persons who might be residing in the homes surveyed may be found in Appendix D.

Other persons living in the homes surveyed include maids in four instances, boarders or roomers in four instances; and one older relative, the mother of the wife.

Source of House Plans

In an attempt to determine how and where the co-operators obtained the plans used in these homes built for their own occupancy, a check was made of sources. It was found that twelve, or 36.4 per cent, were drawn up by a registered architect to suit the tastes of the particular family now occupying the dwelling. Of these, ten cases, or 84 per cent of the sub-group, indicated that they liked their general housing situation very well and that they

would make few changes if they were to rebuild. One case, or 8 per cent, had a long list of what might be termed major changes that were desired. Here, however, it should be stated that the house was built in 1931, about the time of the couple's marriage, and since that time the size of the family has changed, and consequently the plans for living have altered greatly. Most of the desired changes can be traced to this.

The remaining case, representing 8 per cent, concerns a house built in 1938, and still well suited to the size of the present family. Here the desire for change seems traceable to the need for greater ease of cleaning and other phases of homemaking. Specific changes listed were "less light woodwork to keep clean," "fewer windows to wash," and "never again for those dusty venetian blinds." More space for eating in the kitchen area was also desired.

Three cases from the total survey group used plans which were drawn up by an architect, but were done for some other person and then were used or purchased by the present owners. Of these, only one case might be said to have listed in the check list more features that were liked than disliked. These owners said that they had sketches of a similar plan but liked this house even

better when they saw all the attractive and convenient features it offered.

Plans that were originally drawn by an architect but which were offered for sale by some planning service, magazine, or newspaper were used by five cooperators, or 15.2 per cent of the total group. In some instances the blueprints were furnished and in others the drawings were taken off to scale by the owner or the contractor. In one case a magazine plan was adapted by a local architect to the needs of the family now occupying the house. This proved quite satisfactory and there were no major changes desired. One other in this group desired few changes, but the three remaining cases reported many disliked features under conditions of use or wished for many changes.

Plans that were drawn up to suit the owners' individual needs, but which were done by a student of architecture rather than by a registered architect, were used by five cases, or 15.2 per cent of those included in the total survey. In two instances the results were very satisfactory, whereas in the remainder of this sub-group several changes were suggested as desirable.

The adoption of the plan of some ready built house that looked attractive was tried by three of the total 33 cases. Of this group of nine per cent, two listed

several changes that they now desire, whereas one had only minor changes.

Houses which were constructed by a builder or contractor, and with regard for the tastes and wishes of the clients but without any advice from an architect, were constructed by five members of the group surveyed. Of this number only one listed many important changes which were considered desirable. Two had few dislikes or wishes for change; and the remaining two had a few changes, none of them of great importance.

For more complete data on this phase of the survey see Appendix E.

Facilities Affecting Heating

In the decision concerning the use of such heat-saving devices as insulation and weather stripping, there was wide difference of choice and practice among the co-operators.

TABLE II

SOURCE OF HOUSE PLANS AND REACTION OF PRESENT TENANTS TO THESE PLANS

| Case No. | Year House Built | Source of House Plans | Relative Number of Changes Desired or Causes of Dissatisfaction |
|----------|------------------|---|---|
| 1 | 1940 | Owner's ideas; student organized and drew blueprints | Many "likes" and few "dislikes" |
| 2 | 1938* | Owner's ideas; drawn by architect and worked out at mill | Many "likes" and few "dislikes" |
| 3 | 1937 | Owner's ideas; drawn by architect | Many "likes" and few "dislikes" |
| 4 | 1937 | Drawn by architect (friend of family) to fit tastes and needs | No important dislikes |
| 5 | 1939 | Owner's ideas; plans by student | A few changes; no serious drawbacks |
| 6 | 1939 | Copy of similar house by contractor | Some structural changes desired |
| 7 | 1931 | Owner's ideas drawn by architect | Many changes desired (family has changed) |
| 8 | 1936 | Owner drew plan; architect checked and made blueprints | Few important changes desired |
| 9 | 1932 | Stock plan offered by planning service | Many more "dislikes" than "likes" (newlyweds built) |
| 10 | 1936 | Architect's plan; owner's modifications | House well liked |
| 11 | 1937 | Plans drawn by husband who studied architecture | "Dislikes" negligible |
| 12 | 1940 | Built by father-in-law who is builder | Has several serious disadvantages |
| 13 | 1940 | Copied friend's home with minor changes | Few changes desired |
| 14 | 1936** | Owner's ideas; plans by architect | Few changes desired |
| 15 | 1941 | Architect worked out owner's needs | No important changes desired |
| 16 | 1939 | Owner's ideas formulated by architect | No important changes desired |
| 17 | 1931 | Bought plan offered by newspaper | Great many changes desired |
| 18 | 1937 | Plans by family, work by contractor (husband engineer) | No important changes desired |
| 19 | 1933-34 | Drew own plans with help of builder | No important changes desired |
| 20 | 1937 | Plan seen in magazine; architect revised | Few important changes desired |
| 21 | 1937 | Owner's ideas formulated by architect | Few important changes desired |
| 22 | 1940 | Owner's ideas formulated by architect | Few important changes desired |
| 23 | 1938-39 | Liked plans in magazine; drew to scale | Would make quite a few changes |
| 24 | 1938 | Husband had studied architecture, drew plans | Would make quite a few changes |
| 25 | 1938 | Owners drew plans with help of contractor | Would make a few changes |
| 26 | 1941 | Owner's ideas formulated by architect | Few important changes desired |
| 27 | 1937 | Copy of house owners liked | Several changes desired |
| 28 | 1938 | Used cousin's plans; architect-drawn | Many "dislikes" |
| 29 | 1939 | Bought plans from planning service | Few changes desired |
| 30 | 1938 | Architect drew plans to suit owners | Several changes desired |
| 31 | 1938 | Bought lot and plans drawn up for another couple | House does not fit present family |
| 32 | 1930 | Architect drew plan for another family; owners bought | Several changes |
| 33 | 1941 | Architect formulated owner's ideas | Few important changes desired |

Note - Houses with a double date, as 1934-35, indicate that the owners lived in the house before it was completed and did much of this work themselves over a period of years indicated.

* This house was prefabricated by a method in which structural units needed to make the house were prepared at the mill from individual blueprint drawn by architect for owners; cost was higher than anticipated and mill has now discontinued plan.

** This house is a duplex, the last of a series, and intended by owners for their own occupancy. It has two stories and basement and is in effect a long, narrow house with one blank wall.

TABLE III
Occurrence of Heat-Retaining Features
in Construction of Homes

| N = 33 | | |
|---|-----------------|----------------------|
| Heat-Retaining Feature | No. of Cases | Per cent of Cases |
| Insulation: | | |
| Home fully insulated | 15 | 45.45 |
| Home partially insulated | 6 | 18.18 |
| Home has no insulation | <u>12</u> | <u>36.36</u> |
| Totals | 33 | 100.00 |
| Weather Stripping: | | |
| Home fully weather stripped | 18 | 54.54 |
| Doors only are weather stripped | 4 | 12.12 |
| Home partially weather stripped (As certain floors, areas, etc.) | 1 | 3.03 |
| None | <u>10</u> | <u>30.30</u> |
| Totals | 33 | 100.00 |

Twelve out of the thirty-three cases, or 36.4 per cent, reported no insulation whatever. Full insulation in walls and roofs was reported by 15 cases, or 45.4 per cent, whereas the remaining six cases, or 18.2 per cent of the entire group had partial insulation. Of this last group, one house had had insulation installed on the side of the prevailing winds, one had it in the roof and ceiling, two had it in the second floor bedrooms only, and the other two simply specified that the house was not fully insulated.

Materials which were used in insulating varied from sawdust through the more familiar types of materials as rock wool, wood fiber panels, and quilted sheets of insulation to a rather recently introduced combination of heavy paper and metal foil. The latter type of insulation was used in one house studied. Data on this phase are incomplete in that some of the cooperators were able to say that the house was insulated but did not know or remember the material used.

Weather stripping, on the other hand, seemed to make its absence or presence more strongly felt. Only ten, or 30 per cent of the entire group surveyed had no weather stripping of any kind and of these one said that the house really needed weather strips and that it would be an absolute necessity if it were not situated in a spot protected from winds. It might be of interest to know that this house has inside walls of wood paneling and as it was built in 1931, these are shrinking and allowing greater leakage of air.

Of the group without weather stripping, two include this as an item in the list of things they hope to do for their homes in the future and one family had added it since the completion of their house.

Eighteen cooperators, or 54.5 per cent of the remaining 23 home owners who had installed weatherstripping at the time of building indicated that their homes were completely weather stripped in all parts, including both doors and windows. Four, or 12.1 per cent, had it around doors only, while one case, or three per cent of the group, had given this attention to only certain areas of the house.

Heating

The heating systems chosen for these homes are all either of the fully automatic type, such as oil or gas furnaces which are operated by a time clock and a thermostat, and with no handling of fuel whatsoever on the part of the homeowner, or they are the semi-automatic type, such as those burning sawdust, in which a large amount of the heating substance must be loaded into an automatic feeder once or twice every twenty-four hours.

TABLE IV
TYPES OF FUEL USED IN HEATING PLANTS
OF HOMES SURVEYED

| | N = 33 | |
|--|-----------|----------------------|
| | No. Cases | Per cent of Cases |
| Oil, full automatic | 15 | 45.45 |
| Gas, full automatic (manufactured gas) | 8 | 24.24 |
| Sawdust, semi-automatic | 10 | 30.30 |
| Wood, stoked by hand | 0 | 0.00 |
| Coal, stoked by hand or semi- automatic | <u>0</u> | <u>0.00</u> |
| Totals | 33 | 100.00 |

In all the cases surveyed, there is no furnace which makes use of coal handled either automatically or by hand, nor is there even one which burns split "chunks" of wood. This is rather surprising in a region where wood is plentiful and where it has long been considered an inexpensive fuel.

This would definitely seem to indicate a trend in the direction of heating systems that are as nearly automatic in their operation as possible. Specifically, of the 33 cases surveyed, fifteen, or 45.5 per cent of them burned oil; ten, or 30.3 per cent burned sawdust; and eight, or 24.2 per cent burned gas. Gas is of a

manufactured type, natural gas not being available in this region.

Fireplaces

The warmth and pleasure afforded by an open fireplace apparently appealed strongly to all those cooperators contacted in this survey, for there was one or more found in each home considered. The total number for all locations and all cases was 56, or slightly more than one and one-half per house (1.69 per cent).

Thirty-two homes, or 97.0 per cent, had fireplaces located in the living room. The remaining one case reported that the fireplace was omitted here because the cooperator did not like the resulting dirt. This is interesting in view of the fact that this family has formerly built and occupied several homes with fireplaces.

Only one home had a fireplace in the dining room and this was unusual in that this dining room is very large and was planned for a second living room. In planning this the owners felt that the dining room would be far enough from the living room to afford reasonable privacy for two groups of persons, yet opening from it with an open arch and two steps down, provides fine space for the entertainment of large groups of people. This was one thing desired at the time this home was built.

Basement recreation rooms, or in some instances space intended for this purpose, included a fireplace in 16 homes, or 48.5 per cent of the group. Because these fireplaces seemed to be infrequently used, a detailed study of their evaluation was not made.

Three homes, or 9.1 per cent of the survey group, had bedroom fireplaces. In one instance this room was planned to rent; in another the cooperator stated that it was desirable in time of sickness; and in the third case the cooperator indicated that if she were rebuilding, this feature would be omitted.

A den or study with a fireplace was chosen by four home owners, or 12.1 per cent of the total group. Though the amount of use varied, there seemed to be general satisfaction with this arrangement.

In considering the amount of use given the fireplace in the living room, and its evaluation by the homemaker, the following facts appear. Sixteen cases, or 50 per cent of those having fireplaces, stated that they were much used. Five cases, or 16 per cent, listed moderate use; and the remaining eleven, or 34 per cent, stated that they were little used.

One very interesting fact came out in this connection and that is the direct statement or unmistakable infer-

ence drawn that one reason for the little use of the living room fireplace was the fact that when it was in operation the heat balance of the house was upset. In one instance the owners had had the thermostat moved from the living room to help correct this difficulty. Several more said that it made the rest of the house too cold because the fireplace in the living room caused the thermostat there to shut off the automatic heating system, and still others said that they had to turn off the heaters in the living room when the fireplace was in use. Seven cases, or 22 per cent, of those having fireplaces in the living room made this comment.

In rating the relative use of the living room fireplace, 16 cases, or 50 per cent, evaluated it as receiving much use; five, or 16 per cent, as of moderate use; and the remaining 11 cases, or 34 per cent, as of little use.

For more complete information on the use of fireplaces and their locations in reference to particular homes, see Appendix E.

Woodlifts

Woodlifts which carry the fuel supply for the living room fireplace seem to be entirely overlooked by the

owners of the homes included in this survey. Only one was found, and that was located in the central hall where wood had to be carried across the entire width of the living room to the fireplace. This was not objectionable to the cooperator, who said that she would prefer to have the dirt fall off the wood there, and stay in the hall, rather than fall on the living room floor.

Three persons not having the lifts indicated that they would like to have them, and in two instances co-operators said that they had wished them at the time of building but it had been impossible to fit in the lift.

Dining Facilities

During the last few years there has been much criticism and not a little comment aimed at that favored feature of a former era of American housing, namely, the breakfast nook. According to the findings of this survey, the well planned breakfast nook still has its supporters, and dissatisfaction is sure to result if there is crowding of any eating space, be it nook, counter, or table.

Of the 33 cases surveyed, only four, or 12 per cent, have neither nook nor eating facilities of some sort in the kitchen. In this group one cooperator said that she did not want one of the "makeshift eating" areas as she

feels it lowers the family standards for manners or eating habits. One other said that she wanted space in the kitchen for at least one person to eat. In this home the dining room is separate from the living room, but it is in a small area, up two steps from the living room and in complete view of it. The lack of kitchen eating space is felt most when there is help in the home. The remaining two co-operators wanted some space in the kitchen for eating; though one, on the basis of past experience, specified that it must not be a nook.

Ten cases, or 30 per cent of the total group of homes, had separate breakfast nooks, and not one of the co-operators using these expressed any dissatisfaction with them. Some expressed a great liking for the nook and said that it is much used. One of these cases had a particularly good arrangement in the placement of the nook in a bay window of what is actually a passageway connecting the kitchen with the living room, and joining at right angles by the passage leading to the dining room at the front of the house. Extra cupboard and work space was added here and the area was attractive and much used.

By far the greatest proportion of the homes surveyed have some sort of facilities in the kitchen proper where food may be served. Nineteen, or 58 per cent, have this

plan, although there is variety in the form. Two snack bars and two cupboards with fronts which drop down to make small tables were found. In no case was there dissatisfaction except with the small size of these facilities, and even here the request was for increased space rather than for change in type. Several of the co-operators who were most emphatic in their praise of this eating space in the kitchen liked the chance it gave them to carry on other activities, particularly ironing and sewing, in the kitchen.

All homes surveyed had a separate dining room, but opinions as to its placement in relation to other rooms and as to its use varied. In listing the features that they particularly liked about their homes, two gave the following things as disliked: The fact that it was necessary to use the dining room as a passageway to some other spot. Probably indicative of the same feeling were the comments of two co-operators who said they appreciated the fact that it was not necessary to use their dining rooms for cross traffic through the house. Extra wear and cleaning were factors underlying these feelings; also, the opinion voiced by one homemaker that she liked to be able to leave the table after a guest meal without either having to take time to clean it or to sit and look at its clutter all evening.

Of the entire number of homes surveyed, only six per cent, or two cases, said that if building again they would like a large living room with space and facilities for dining placed at one end.

From the findings of this survey it is evident that within this selected group by far the majority, 97 per cent in fact, prefer that the dining room area not be a part of the living room proper, or at least were satisfied with this separation where it existed.

More complete information, with specific reference to case numbers is given in Table V.

Laundry Facilities

Utility rooms or areas on the first floor were definitely favored locations for laundry facilities by those cooperators who have them. Chief reasons for this are (a) the saving of time and of steps in going to and from this area, and (b) the value of close connection with other work centers where child play, cooking, or other activities might be going on at the same time, and where the supervision of the homemaker would be of benefit.

Of the 33 cases surveyed, seven, or 21 per cent, had the laundry facilities located within the house walls of the first floor area. Of these all but one was a separate enclosure, but this one occupied space at the end of the

TABLE V
LOCATION OF FACILITIES FOR MEAL SERVICE

N = 33

| Case No. | Space for Eating is Provided in | | | | Evaluation or Comment on Plan Made by Homemaker |
|----------|---------------------------------|---------------|------------------|--------------|---|
| | Dining Room | Separate Nook | Table in Kitchen | Outdoor Area | |
| 1 | Yes | -- | Yes | -- | Uses kitchen space for many things as sewing |
| 2 | Yes | -- | Yes | -- | Likes plan; finds space a little small |
| 3 | Yes | Yes | -- | -- | Likes bay window in connecting passageway |
| 4 | Yes | -- | Yes | Terrace | Uses terrace and its fireplace very little |
| 5 | Yes | -- | Yes | -- | Drop table in the kitchen cupboard used |
| 6 | Yes | -- | Yes | -- | Likes corner table for many jobs |
| 7 | Yes | -- | -- | Porch | Feels nook or kitchen meals lower standards |
| 8 | Yes | -- | Yes | -- | Maid eats in kitchen |
| 9 | Yes | Yes | -- | -- | Would not have dining and living room separate |
| 10 | Yes | Yes | -- | -- | Likes dining and living room separated by hall |
| 11 | Yes | Yes | -- | -- | Likes present plan; says it is "livable" |
| 12 | Yes | Yes | -- | Terrace | Arch divides dining room and hall; is runway |
| 13 | Yes | Yes | -- | Terrace | Wants door through nook to outdoor area |
| 14 | Yes | Yes | -- | -- | Likes nook joining kitchen; much used |
| 15 | Yes | -- | Yes | Terrace | Enjoys large dining room; has big dinner parties |
| 16 | Yes | -- | Yes | Terrace | Likes present plan |
| 17 | Yes | -- | -- | -- | Wants eating facilities in kitchen |
| 18 | Yes | -- | Yes | -- | Likes table under kitchen window |
| 19 | Yes | -- | -- | -- | Would like large kitchen with table; no nook |
| 20 | Yes | -- | Yes | Terrace | Likes dining room with bay window to garden |
| 21 | Yes | -- | Yes | -- | Bar in kitchen; likes this plan |
| 22 | Yes | -- | Yes | Patio | Wants nook; present table inadequate |
| 23 | Yes | Yes | -- | -- | Dislikes use of dining room for passage |
| 24 | Yes | -- | Yes | -- | Snack bar in kitchen |
| 25 | Yes | -- | Yes | Porch | Wants larger dining room; likes kitchen table |
| 26 | Yes | -- | Yes | -- | Has drop table in kitchen cupboard |
| 27 | Yes | -- | Yes | -- | Kitchen table too small for present family of six |
| 28 | Yes | -- | Yes | Terrace | Prefers large living room with dining space |
| 29 | Yes | Yes | -- | -- | Likes dining room across hall from living room |
| 30 | Yes | -- | Yes | -- | Wants more kitchen eating space |
| 31 | Yes | Yes | -- | Terrace | Likes nook with table with convenience outlet |
| 32 | Yes | -- | -- | Terrace | Wants space for at least one to eat in kitchen |
| 33 | Yes | -- | Yes | Terrace | Likes plan. Planned especially for terrace |
| | 33 | 10 | 19 | 13 | Total number of cases |
| | 100.0 | 30.30 | 57.57 | 39.39 | Per cent represented by number of cases |

kitchen. Here were also located the mangle, the ironing space, the sewing machine, and the mending equipment. It was particularly well liked by the cooperator for its convenience. At present it is undivided from the kitchen proper, but at some later date a screen may be used.

Among the owners of these seven first floor laundries six, or 84 per cent, listed them among the features of their houses that they particularly liked. The only cooperator with a dissenting opinion, representing 16 per cent, was in favor of the idea, but disliked the size of her room, as it was so tiny there was no room for a washing machine beside the tray. She was definite in her statement that "it was no house for a baby," and she had had to send out all of the diapers when her own baby was small. Incidentally, these home owners bought a lovely waterfront lot and the house plans which its former owners had had drawn up to fit the site and their own needs.

One case in this study, representing three per cent, had the laundry trays and other facilities located in the garage. This was done to make good drainage possible, as the house is located on a lake shore, but the cooperator is far from pleased with the setup. She says the location is inconvenient and that in the winter, even though the

plumbing has never frozen, the work space is entirely too cold for comfort.

The remaining 25 cases, which are 76 per cent of the entire number of cooperators, have laundries located in the basement. Of these, three, or 12 per cent of this group, have maids and it is logical to suppose that the place where the laundry is done is of less concern to the homemaker than if she were doing it herself. Of these three, one expressed her liking for the nicely finished special room for all laundry purposes, and the other two made no comments and expressed neither satisfaction or dissatisfaction with the existing arrangements.

Five, or 20 per cent of the group with basement laundries, indicated that if they were rebuilding, or if it were possible to make the change, they would prefer the laundry facilities on the main floor of the house; and they listed "less time spent" and "no ups and downs" as the chief reasons for this preference.

Of the remaining 17, or 68 per cent, with basement laundries, only one made any comment and that was to the effect that she liked her plan of having play material for the youngest child near her laundry center so she could "keep an eye on her." Of the others, no special comment

was made, though two made the simple statement that they liked their laundry.

More complete data relative to laundry facilities is given in Table VI.

Uses Made of Basement Space

Full or partial basements were chosen by far the greatest majority of the home owners considered for this survey. Only two cases, or 6.0 per cent, had no excavation of any kind. Of these, one was a pre-fabricated house and the other a small one of very modern design, situated on a lake shore so that excavations might present serious problems.

The remaining 31 cases were divided in the amount and use of basement space. One had a very small excavation for the furnace only. It is so tiny that wood for the fireplace is kept in the garage. Five had partial basements, which were so built either for reasons of economy, or, as in one instance, because of the difficulty of excavating the very rocky ground. The remaining 25 homes had full basements.

All those homes having either full or partial basements placed their heating plants in the basements, there being 30 of these, plus the small furnace excavation previously mentioned.

TABLE VI

Relationship Between Location of Laundry Facilities
and Satisfaction of Cooperator Using These

| Case No. | Location of Laundry Space | Expressed Satisfaction | | Comments of Owner |
|-------------------|---------------------------|------------------------|-------|-------------------|
| | | Yes | No | |
| 1 | Basement | Yes | -- | Likes arrangement |
| 2 | Utility room* | Yes | -- | Likes arrangement |
| 3 | Basement | Yes | -- | Maid does work |
| 4 | Basement | --- | -- | None |
| 5 | Basement | --- | -- | None |
| 6 | Basement | --- | -- | None |
| 7 | Basement | --- | No | Prefers 1st floor |
| 8 | Basement | --- | -- | Maid does work |
| 9 | Basement | --- | -- | None |
| 10 | Basement | --- | -- | None |
| 11 | Basement | --- | -- | None |
| 12 | Basement | --- | -- | None |
| 13 | Basement | --- | -- | None |
| 14 | Basement | --- | -- | None |
| 15 | Basement | --- | -- | None |
| 16 | Basement | --- | -- | None |
| 17 | Basement | --- | No | Prefers 1st floor |
| 18 | Basement | --- | -- | None |
| 19 | Basement | --- | -- | None |
| 20 | Utility room* | Yes | -- | Very good |
| 21 | Utility room* | Yes | -- | Very good |
| 22 | Basement | --- | -- | None |
| 23 | Utility room* | Yes | -- | Very good |
| 24 | Basement | --- | No | Prefers 1st floor |
| 25 | Garage** | --- | -- | Much disliked |
| 26 | Basement | Yes | -- | None |
| 27 | Basement | Yes | -- | None |
| 28 | Basement | --- | No | Prefers 1st floor |
| 29 | Basement | --- | No | Prefers 1st floor |
| 30 | Basement | --- | -- | Maid does work |
| 31 | Utility room* | --- | No | Bad; too small |
| 32 | Kitchen | Yes | -- | Good; saves steps |
| 33 | Utility space*** | Yes | -- | Good; convenient |
| No. of Cases | | 10 | 6 | |
| Per cent of Cases | | 30.30 | 18.18 | |

*In each instance this utility room was on the first floor.

***This space is a part of the kitchen; here are also the mangle, sewing machine, and iron.

**This house was on lake shore and the location was chosen to give adequate drainage without adding to the area of the house.

Twenty-five of the thirty basements, or 66 per cent, were also used for laundry facilities.

Recreation rooms, or space in which these may be installed in the future, are found in 21 cases, or in 70 per cent.

Work shops of some kind are found in seven homes, or 23 per cent.

One home had a maid's bedroom (with no adjacent bath or lavatory on the same floor) as a place for sewing. Another made use of the space in front of a very deep basement window which was built with a sloping floor in the light well which admitted a large amount of light. This plan was well liked.

In brief, basement areas were popular with the home owners surveyed and were used without exception for the heating facilities and, in most instances, for the laundries. Recreation space and work shops were other popular uses of this area.

Number and Distribution of Rooms

Since the number of rooms and their distribution is one of the most important factors in the satisfaction of the occupying family with the home in which it dwells, some composite knowledge of this seemed essential for the survey.

All homes considered in the survey had living rooms, and all also had some sort of separate dining room, in addition to which there were in many instances other facilities provided for eating, either in the kitchen or in a separate nook. (See Appendix H.)

Besides the recreation rooms, there were 12 of the total group, or 36 per cent, that had some sort of den or study. Without exception these were located on the first floor and in some instances they were intended for use either as a bedroom or as a study, as the work habits and the state of health of the family might dictate.

Nearly all of the homes, 31 of the total, or 94 per cent, to be exact, had either a lavatory, a bath, or a bath with shower on the ground floor. In some instances these were the only such facilities offered in the house, while again they were not.

Only 22, or 67 per cent, of the cases surveyed had one or more bedrooms on the ground floor.

For a more complete picture of the number and placing of rooms for each house surveyed, turn to Appendix F.

Likes and Dislikes or Desires Expressed by Cooperators

The last portion of each case study consisted of an evaluation by the cooperator of the various features included in the house in which she lives. This information was gathered with few or no promptings on the part of the interviewer, and consequently the results follow no set pattern or form. This was done deliberately in an effort to get the cooperator's unbiased evaluation, without even such influence or guidance as might be exerted by a check list. This fact should be kept in mind in consideration of the following data.

For purposes of reference to comprehensive tables in the Appendix, comments have been grouped according to fields of housing to which they relate, and for each the case number assigned to the cooperator making the comment has been designated. From this is readily seen the nature of the comment and the number of cooperators to whom it seemed of importance.

Satisfaction Derived from Relationship Between Size and Number of Rooms

In considering the cooperators' evaluations of the relationship between the size and number of rooms in the home and the satisfaction which is derived from them, certain things stood out. Nine cases of the entire group

surveyed, or 27 per cent, expressed the liking for a large living room both for greater enjoyment of family life and for ease of entertaining.

Large rooms, which give a feeling of spaciousness and of no crowding throughout the house, were listed as pleasing by five cooperators, or 15 per cent of the survey group.

Large dining rooms to facilitate entertaining were listed by two of the cooperators, and represent 6 per cent of the cases.

Dislikes mentioned by the cooperators in regard to the size of rooms included two cases, or 6 per cent, in which the desire was for larger dining rooms. There was one unfavorable comment for each of the following conditions: living room too small; poor proportions of the living room, namely, too narrow (width 12 feet 6 inches); study too small; entrance hall too tiny; and a living room which was large but which would be crowded when the family acquires a long desired grand piano.

So far as satisfaction as to number and kind of rooms provided in the house, two cooperators, or 6 per cent, praised the privacy afforded by a study. One case listed liking for a separate guest room and large amount of extra space upstairs as an aid in entertaining and in

routine family life; and another liked free space in front of a north window in the upper hall as a sewing center.

Dislikes or desires for change in this respect were expressed by only two cooperators, each representing 3 per cent of the total group. One wanted a room outside of the house, possibly in or over the garage, for a high-school age son. The other wanted a study, and had omitted it from the original plan of the house only because of the extra building cost it entailed.

For more complete information on this phase of the survey see Appendix G.

Storage Facilities

In evaluating storage space other than that in the kitchen in regard to the amount available, two cooperators, or 6 per cent, praised the good use made of all available space under the eaves of the second story. There was one comment each, with individual value of 3 per cent, in favor of plenty of large closets throughout the house; large bedroom closets; and an extra closet for general storage of miscellaneous material in the front hall in addition to the coat closet.

As criticisms in this same field, two cooperators, or 6 per cent, expressed the need for more cupboards. One

cooperator indicated the need for more room devoted to general storage and suggested a complete, instead of a partially excavated, basement as a remedy for the situation.

Under the heading of storage for special purposes, in three cases, or 9 per cent of the studies, large front hall closets were listed as good. Two cooperators, or 6 per cent of the survey group, had and heartily endorsed two coat closets in the front hall, one for family wraps and one for the use of guests.

Various other special storage features or facilities were listed by other cooperators and, occurring each in a single instance, they included the following things: built-in desk, counter, and storage shelves in the study; closets with double doors in each of the bedrooms; cupboard space in the living room for games and card tables near the place they will be used; large and easily accessible closets in the bedrooms; a fruit storage closet on the first floor; a large closet with shelves on all three sides for storage of bedding; and decorative shelves in the ends of the living room for storage of books and knickknacks.

Dislikes or needs expressed by the cooperators in the field of special storage fall into two groups: first, the

ones caused by faulty planning of existing closet space; and second, by the need for storage facilities where none now exist. Two of the cooperators, or 6 per cent, called for some means for storage of linens in the dining room, and two more needed a larger broom closet for convenient storage of cleaning supplies. In addition, one case, or 3 per cent, reported the absence of any broom closet whatsoever.

Among the other unfulfilled needs or dislikes listed, each of the following appeared once: The closet in the master bedroom is too short for storage of formals anywhere except on the inside of the door; a bedroom closet has a step up just inside the door, necessitating either a change of floor level or a very long reach for anyone using it; the need for cool storage spot for foods other than those needing actual refrigeration; a fruit room is desired in a home where no special food storage of large supplies of food is available; another coat closet is desired for the first floor; a built-in what-not for storage of dishes is needed in the dining room; a larger storage space for household linens and bedding; a double garage or other outdoor storage space for baby buggies, wagons, lawn mower, and other things of that nature which are used out of doors; a built-in dressing table is

desired for the bathroom; a door is preferred on a coat closet just inside the front door which now exists as open storage space, and a better arrangement of closets to make things stored in them more accessible.

For more complete details on this phase of the study see Appendix H.

Ease of Cleaning and Maintenance

The ease of cleaning and the maintenance are important features in the time management and energy conservation of any homemaker, so it is to be expected that some of the cooperators volunteered appraisals of housing features that would have some bearing here. Two cases, or 6 per cent, praised the use of wood paneling for its ease of cleaning. One other cooperator, representing 3 per cent of the total survey, liked the dark woodwork used throughout her home.

Among the features on which there was adverse comment, a single cooperator mentioned each of the following disadvantages or desires: Rough plaster on the walls of the kitchen and bath are difficult to clean. Too many windows in a room are more than necessary for light and are hard to clean. (In this case a toddler and a four-year-old are in the home.) Too much light woodwork causes cleaning problems. This last comment was also suggested

by another cooperator who said that if she were rebuilding she would have dark woodwork in the areas, such as halls and bedrooms, where there is much wear and where appearance is less important.

Floor surfaces and coverings were also evaluated for easy cleaning, and the following opinions of cooperators obtained. Three, or 9 per cent, listed linoleum as satisfactory in entries and areas other than just kitchens and bath because of its easy upkeep. It was suggested that it should not be too light nor a plain pattern which would show tracks easily. It was particularly favored in homes outside the city areas where cement walks are the rule. In this same general field one cooperator stipulated her choice of linoleum in "all the places they usually use tile for economy, quiet, and comfort."

A floor level dust trap in a central hall was listed as a convenience in one case, 3 per cent.

Among the dislikes or the features desired in this same field of interest, one cooperator, 3 per cent, regretted the use of easily marred softwood floors in a downstairs study which gets much wear. Another said that a softwood floor, completely carpeted, would be her ideal choice for the living rooms on the first floor. Ease of cleaning and prevention of noise are factors involved.

For more detailed data in this field of the survey see Appendix I.

Factors Involving Health, Comfort and Safety

Factors involving health, comfort and safety in the home were evaluated for three general phases. As to stairways and changes of floor level, one cooperator, 3 per cent, listed a doorway at the bottom of the stairs as both a safety measure and a saving of heat. Another, representing 3 per cent of the total survey group, listed wide stair treads and a handrail as valued safety measures.

Among the disliked features or the desires for change mentioned by the cooperators, steps leading from the living room to the entry and a potential source of falls were given in two cases, or 6 per cent. Others mentioned are as follows: Change in room levels are bad for families with young children; dark steps used in the dressing room offer a hazard; and the need for a railing to protect an area near the front door where there is a descent of two steps down into the living room. Another cooperator regretted the fact that the spindles protecting the stairwell were placed so far apart that muslin was needed as a covering to keep the baby from falling through. Each of these factors was mentioned only once by one cooperator.

Under the effects of placement of windows and ventilation, two cooperators, 6 per cent, stated appreciation of the many windows in their homes which give them light and air. Another favored a view window in the living room for its lighting and aesthetic value; and still a third commented upon an ornamental bay window in the dining room.

Unfavorable comment came from one cooperator, 3 per cent, because of the lack of a window for fanlight over her front door to relieve the darkness in the hall.

Other features which were counted as hazards by some of the cooperators included raised stone hearth which proved a menace to a child of toddler age. Soundproofing was desired, especially of the plumbing. There was also a need for more convenient electrical outlets. In one case a door opened across the front of the fireplace, causing inconvenience and danger.

For more data on this field of the survey see Appendix J.

Resources for Play and Recreation

In considering express evaluations of space made available for play and recreation, groups concerned were divided into age levels of children. Cooperators having infants and pre-school children in their homes listed the

following as likes: the basement as a play space; play space and toy storage available in the kitchen; an outdoor playhouse and extra wide cement area in front of the garage where the children play on tricycles, skates, or in sand piles.

Dislikes found in homes caring for children of this same age were: absence of play space on the first floor and more general play space. Another suggestions was that a Dutch-type half-door for the baby's room would keep him in one spot and let the mother supervise his play while she was at work.

Cooperators having children in both the grammar school and the high school through college groups stated that the recreation room in the basement was much used. This statement came from three cases, or about 9 per cent.

Play or recreation space for adults was mentioned by several of the coordinators. A terrace which is used as an outdoor living room found favor with four cooperators, or 12 per cent. A study room which is satisfactory as a retreat from strenuous evenings created by younger members of the families was praised by one cooperator, while in this respect another listed a porch where outdoor dining was possible.

For further data on this phase of the survey see Appendix K.

Bathroom, Lavatory, and Shower Facilities

In enumerating likes and dislikes for bathrooms and related areas, one cooperator praised her large bathroom, saying that it never became steamy or cluttered; while another liked the ease with which her small and compact room could be cleaned. Among the conveniences in this area, a storage cupboard placed on the wall above and behind the toilet was listed as good and convenient space.

Among the dislikes or desires for change in the bathroom area in regard to the size or plan of these rooms, one of the cooperators listed an upstairs bathroom that is small and cut up as to space; another stated preference for a shower stall rather than a shower placed in a tub, stating that it was "less messy"; still a third would change the tub shower bath on the first floor to a tub bath for greater ease in bathing of small children. One cooperator desired a shower bath in place of a lavatory in the master bedroom and this change has already been made.

In considering the number and location of bathrooms, four cooperators, or 12 per cent, liked the convenience of a lavatory on the first floor.

Expressive of similar ideas was that of the homemaker who expressed desire for a first floor lavatory;

another cooperator desires a bathroom on each floor on which a bedroom is located; while still a third feels the need for an additional bathroom on the second floor to serve a family of five persons.

For further data on this phase of the survey see Appendix L.

Sleeping Area

In commenting upon their own evaluations of sleeping areas, three cooperators, or 9 per cent of the cooperators included in the study, listed a liking for a downstairs study which could be used as an emergency bedroom in times of illness or extra guests. Another cooperator mentioned that one of her favored arrangements is a spare bedroom. Need was expressed by one person for a room in which a maid might sleep should help in the home be necessary.

Two cooperators, 6 per cent, stated approval of their large and spacious bedrooms. Two others, 6 per cent, indicated dislike of small bedrooms throughout their houses; and still a third regretted that one bedroom was rather small.

From the standpoint of location of bedrooms only one cooperator volunteered the fact that she appreciated the convenience of a bedroom on the first floor, but one

stated the desire for at least two bedrooms on the ground floor, one for children and one for parents; and another desired either a bedroom or a study which could be used as a bedroom in case of an emergency. In one instance a cooperator expressed disapproval of the placing of her guest room over the kitchen, stating that it was too noisy in the mornings when either she or the maid got up to start breakfast.

For further data on this field of the survey see Appendix M.

Relation of Areas to Each Other

Several different features of construction tend to control or limit the interrelation of areas within a home. Halls and passages, or rooms not intended for this use, but forced into it by location are examples. Six co-operators, 18 per cent, of the survey group stated that a well liked feature of their homes was the fact that it was not necessary to route traffic through the living room and that this added privacy had saved confusion and dirt.

Conversely, a living room which got all the traffic between other areas was considered a disadvantage by one cooperator.

A covered passage to the garage was listed as a pleasing feature in the homes of five, or 15 per cent, of the cooperators. One more indicated a desire for such an arrangement and one of the changes she would make if rebuilding.

A back hall which gives private passage between the living room and bedrooms was favored in two cases, 6 per cent. Other statements concerning well liked features included the following, each mentioned by one cooperator: An enclosed porch permits passage to kitchen area by way other than through the living room; the living room and dining room separated by an entry hall to give greater privacy before and after meals; an entrance hall giving privacy to the living room; absence of any opening between the living room and dining room is also considered an aid to meal service and is a source of privacy.

The use of a dining room as a passage way was considered a disadvantage by two cooperators, 6 per cent. Two more, 6 per cent, stated the wish for a central hall which would keep the traffic out of the living room area.

Stairways form another connecting link between rooms and areas. In this field the following likes or dislikes were stated, each by one cooperator: The house all on one level with no "ups and downs"; the possibility of getting

upstairs by means of a back stairway, unseen from the front of the house; both inside and outside stairs leading to the basement.

Among the disliked or desired features connected with stairways of homes treated in the survey, two cooperators, 6 per cent, stated the wish for a house built all on one floor. Another wanted back stairs not seen from the living room, while still a third favored the less conventional grouping of rooms for her hillside lot of kitchen, dining room, and guest suite in the basement level.

Doors and openings between rooms constitute another factor influencing room relationship. Among the well liked features listed by cooperators in this connection were door opening from the garage directly into the house; a door leading from the living room into the back yard and the facilities it provides; and an outside entrance to the basement.

Features desired or disliked relating to doors and openings are as follows: one poorly placed kitchen door blocks the oven opening of the stove; access from the kitchen to the garden area for meal service should be made available; a storm door is needed to stop the leaks around a door opening from the living room to the terrace and unprotected by a roof; a door leading from the living

room to the terrace and in the center of a series of windows is hard to curtain and could well be omitted since access to the terrace is now available through the dining room; the door leading from the kitchen into the dining room covers some shelves; an outside entrance to a basement is desired by one cooperator to save tracking of dirt through the kitchen; and still another wishes to widen an arch leading from the dining room to the living room to give more spacious feeling.

For further data on this field of the survey see Appendix N.

The Kitchen Area

The kitchen area is one of those in the home in which the housekeeper spends the greatest amount of time. Its arrangement is something which closely concerns her conservation of time and energy. The amount and arrangement of cupboards and equipment is one important consideration. Of the cooperators, five, or 15 per cent, expressed their liking for a kitchen which was compact and an easy one in which to work. Four, or 12 per cent, liked good cupboard space well arranged. Two, or 6 per cent, mentioned the convenience of a delivery box for groceries with one opening to the outside and another inside of the kitchen.

In one case a coat closet in the kitchen was valued for work and heavy duty wraps. In another, a cooler with sliding ventilated drawers below for vegetables was a source of pleasure.

Among the stated dislikes or expressed needs in kitchen cupboards and equipment, two cooperators, 6 per cent of the group, expressed the need for more cupboards in the kitchen. One stated that her delivery bin for groceries was too low as it required a combination stoop and lift that was difficult. One expressed the need for a cooler cupboard; and still another felt that the doors on the storage cupboards were extended too high, as the top shelves were inaccessible for either use or cleaning. The placing of a cupboard directly over an electric stove was declared a mistake in the opinion of one cooperator, who said that even with the help of a ventilating fan she could not keep this surface clean.

The surface finish of walls, floors, and work surfaces has much to do with the amount of time and energy spent in cleaning a kitchen. One cooperator expressed great liking for her maple-paneled kitchen walls and said they were very easy to keep clean and lighter in color than much wood paneling. Among the dislikes expressed

concerning this phase of the survey was that for walls finished in a composition board which is supposed to be practically indestructible and impervious to stains or scratches of all kinds. The basis for this dislike was apparently monotony or inability to change the color which is rather bright.

An error in construction of drainboards so that they lack enough slope to permit the water to run off caused loosening of the linoleum topping and this is a source of great displeasure to one cooperator.

In considering the lighting and ventilation of a kitchen there are several factors to be considered. Two of the cooperators, 6 per cent of the survey group, stated that they took great pleasure in the views from their kitchen window which is placed over the sink. One stated that it was a great convenience to be able to watch the children at play in the area in front of the house.

While one of the cooperators felt the need for more ventilation in the kitchen and indicated desire for a ventilating fan, another who already had one stated that it seemed to her to be of such little value that if she were rebuilding it would be one item of expense that she would cut. In one case study, the need for more light in the kitchen was expressed, and in another the cooperator

disliked the low height of the window placed above her sink (about six inches). She stated that it was impossible to keep the glass from being splashed and that she could not wipe it off as one could tile or linoleum and have it look clean.

Concerning the size of the kitchens in homes selected for the survey, two cooperators, 6 per cent, stated a liking for a large kitchen with plenty of work space; still another was very pleased with the arrangement of a laundry room and space for sewing machine and similar equipment as a part of the kitchen area proper.

Only one cooperator expressed the desire for a larger kitchen and in this case it was length in particular that was stipulated; another said that in rebuilding she would have some sort of a back entry which did not lead through the kitchen.

For further data on this phase of the survey see Appendix O.

CHAPTER V

EVALUATION OF FINDINGS OF CASE STUDIES

Summary of data from this study and comparison with the findings of other related works shows that as a whole the needs and tastes of the cooperators of all studies are very similar. There are some differences of opinion as to value, but these are usually traceable to local conditions.

Findings for each division of the study, plus bases for comparison, follow.

Source of House Plans

To date the writer has found no reference in former housing studies to expressions by the home owners on satisfaction they derive from the dwellings and some check of the sources of plans for these homes. In this study consideration has been given to whether or not the plans were drawn by a registered architect; whether they were done for the person actually building the house or for some other individual, whose needs and mode of life might be very different from those of the present occupant.

In checking through the findings of this portion of the survey, it seems rather evident that it is more important from the standpoint of satisfaction derived by

the occupying family that the house be designed to fit the needs of the particular family than that it should be done by a registered architect. There is, however, evidence to show that the greater the degree of training in this field, the greater the ability to please the family concerned. This is true only when the work is done by those who have an opportunity to meet and to know the family, their mode of life, and their interests and needs. This last point is brought out in the portion of the writer's survey dealing with house plans drawn by architects but sold to syndicate services or to clients other than the original ones for whom plans were drawn up.

At this point the writer wishes to mention the fact that she is rather strongly of the impression that there is a certain amount of hesitation on the part of some, not all, of the homemakers interviewed to express any strong dislike of a house plan for which they are admittedly and proudly the originators.

Furthermore, as the study progressed, it became evident that there were two types of sources of dissatisfaction. One is error in planning, either from the technical or functional standpoint, as in the case of doors which open over cupboards or other doors, and so forth; and also those which were a failure on the part of the individuals

responsible for the building to fit it to the family pattern of living. The second type consists of those which have come about through change in the makeup of the occupying family, either through change in age levels of children and resulting change in interests and activities, or those which have come from the addition of members in the family group. This second class is most noticeable in the older houses.

Uses of the Basement

Chief uses for the basement areas are to house the heating plant, to provide a recreation center supplementing the living room, and to provide space for workshops or special hobby centers. Laundry rooms too find frequent placement here.

There is a decided preference on the part of most cooperators for some basement space even though they may state that the laundry location they prefer is on the first floor. It is notable that few cooperators who expressed a desire for a house built on one level or at least for laundry facilities on the first floor stated any desire for less basement space or for entire elimination of this region. In fact, some of the owners of partial basements expressed the need for more storage and

suggested completion of excavation under the house as one solution.

Apparently the classification of homes included in this survey was made up of families where adequate space for recreation and storage was of greater importance than the extra additional cost of basement construction.

This is in agreement with the findings of the Wilson study (18:6) which shows that four out of five of the homemakers participating voted for a basement.

Once out of this region, however, findings of other studies do not concur. Coit (9:B:7) states that elimination or reduction of size of the basement reduces cost of building, and that this is made possible by efficiency of the new equipment. Advantages of having basements are work space away from living area, and cool storage for foods. Disadvantages are extra up and down steps and higher construction cost.

In New York state, of 11,000 families surveyed by the Niagara-Hudson System (12:88) of public utilities in 1936, 80 per cent wanted full basements and 15 per cent partial basements. These homes ranged from \$5,000 to \$15,000. The same survey showed 82 per cent of the families wanted basement laundries and 55 per cent wanted a "fruit and vegetable room." Many designers and real estate dealers

find that basement activity and extra stairs are not as objectionable to the householder as they are to the hygienist and the architect seeking economical construction.

Laundry Facilities

A trend toward the location of laundry facilities in some area on the main floor of the house was noticeable in the findings of this survey. This was particularly true in the case of those cooperators who had no maid in the family. The chief reason given for the preference was a saving of time and energy by a plan which would do away with the "up and down stairs" travel so necessary for homes having basement laundry.*

Not only convenience and proximity to other work centers seems desirable but the comfort of the homemaker at the time the work must be done is brought out by the cooperator whose laundry was placed in a garage due to drainage problems, and who dislikes it heartily because

*No specific information was obtained in this study on where soiled clothes were stored or where indoor drying of clothes was done. However, in several instances cooperators indicated that the convenience of a first floor laundry outweighed the disadvantages of carrying wet clothes to lines in the basement on rainy days.

of the chilly task it proves to be throughout the winter months. Two homes with laundries in the kitchen were favorably evaluated by cooperators. It might be stated that in both cases the laundry equipment was modern and attractive and in one instance was a type which does many laundry processes almost automatically and without handling of the clothes between steps.

Other studies tend to bear out the same tastes reported in this one.

Lindquist (10:15) lists laundry space which is well equipped and conveniently arranged is another housing help. It should provide stationary tubs, a floor drain, running hot and cold water, convenience outlets for electrical equipment, easily accessible drying space, both indoors and out, and a wall (?) ironing board.

In the findings of the President's Conference on Housing (17:A:80) dealing with the laundry situation, in an effort to get the work center for this activity out of the basement to a more convenient and pleasant location, several recommendations are made. One, particularly for rural areas, is a combination first floor work room, or even house, for the care of milk, washroom for men, laundry and kitchen work room for special processes, as can -
ning. For urban dwellings, a combination sink and laundry

tray in the kitchen, with a kitchen wall dryer, is one solution; while another is the installation of a laundry tray in the bathroom, plus the addition of a closet large enough to hold the washing machine. Though this may call for a larger bathroom, it does reduce the total area and the cost of plumbing.

According to Coit (9:A:22), the bathroom-laundry combination offers many advantages over the kitchen-bath combine. No steam and drip in kitchen--bath has less rigid time schedule than meal times require in a kitchen. Drying rack may go up over bath tub. Stationary tub or laundry tray may go in bath if desired.

Dining Facilities

Separate dining rooms plus a definite demand for some other space in which meals may be served either in or adjoining the kitchen is brought out by the findings of this study. Only a very small per cent of the cooperators stated any desire for combination of living room and dining room areas, and many of those having no available eating space in their present kitchens stated their need for it.

In reviewing the cases with nooks and with kitchen eating space, it seems reasonable to assume that since those with nooks seemed well satisfied, and since the

only dissatisfaction expressed was with the smallness of the size of the place provided for eating in the kitchen, some of the old criticism of the separate breakfast nook of some years ago was due to cramped quarters and to inconvenience. In other words, it is important to have eating space provided somewhere in or adjacent to the kitchen, but from this point the important consideration to keep in mind in planning is provision of sufficient room and comfort for the family meals, rather than adopting any certain form in preference to any other. If this is done it is quite likely to widen the range of activities carried on in the kitchen and to increase the utility of this area.

This bears out the Wilson study (18:8) which showed that 59.6 per cent of non-rural homemakers stated preference for a kitchen or nook, and a dining room or dinette.

Heating Facilities

The findings of this survey definitely indicate the trend toward automatic or semi-automatic furnaces or heating systems. It is particularly significant that in an area where wood has long been considered one of the least expensive and most readily available fuels that no co-operator is using it for the central heating plant, if hand stoking is necessary. The presence of a number of

sawdust burners which call for only occasional refueling is one form of wood used as a source of heat.

Fireplaces are found in all of the homes surveyed and in all but one of the 33 living rooms. However, adjacent lifts for the raising of fuel for these from the basement are conspicuous by their absence, and probably indicate a trend in housing construction which does not meet with popular approval since a group of the cooperators indicated the desire for such a woodlift and in some instances have been discouraged from its inclusion at the time the house was built.

The significant thing brought out in this study in relation to fireplaces is the fact that in homes with an automatic heating system fireplaces are seemingly unnecessary and often little used due to the fact that they upset the heat balance in the remainder of the house. Some cooperators say that pipes carrying heat to the living room must be turned off in order to enjoy the fireplace, while others state that in cases where the thermostat is placed in the living room the fireplace fire raises the temperature so high that automatic furnace heat is cut off and the temperature in the rest of the house drops. One cooperator had had her thermostat moved out of the living room in an effort to correct this.

These findings follow closely those of the Wilson study (18:16) which showed that of a group of 132 Wil-lamette valley and coast counties homemakers only 2.3 per cent considered a fireplace necessary when it was not the main source of heat, and where 81.8 per cent considered it desirable but not necessary, and the remaining 15.9 per cent rated it a luxury.

Kitchens

Cooperators of this survey stated preference for kitchens which were compact and efficient work rooms. They required adequate cupboard space which is well planned, and expressed appreciation of not only those pieces of equipment which are essential for easy and safe preparation and storage of food but for those which made their work easier. In this respect, cooling cupboards, ventilated bins and drawers for vegetables, and closets opening both into the kitchen and to the inside of the house for grocery deliveries were praised.

In some instances appreciation of a window over the sink was expressed. One cooperator expressed disapproval of too low placement of such a low window, saying that at its six-inch height above the top of the sink splashing was inevitable and created a continual cleaning problem.

There was no definite taste stated as to size of kitchens, though it was observed that in many of those rooms which were large the fixtures around which work centers mainly, as the sink, the stove, and the refrigerator, were closely centered. Usually in such kitchens the extra space was used for eating or other activities which included sewing, child play, and laundry.

Coit (9:A:25) states that the kitchen and related areas are those in which the greatest number of homemakers express criticism or strongly felt needs. Changes desired relate chiefly to inadequate size, poor finish, and unsuitable heights of work surfaces, rather than to lack of more or better equipment. Functions of kitchen usually include workshop, dining room, and social hall, in lower income level families.

In the President's Conference on Building and Housing (17:A:9), the committee on kitchens and other work centers concentrated on requirements of the low income group. According to their findings, uses made of the kitchen area are as follows: "Kitchen studies show 66 per cent of families use the kitchen as a dining room. The committee does not recommend the use of the kitchen as either a dining room or a living room. It recognizes the fact that in families with small children it may be

desirable to have a place where children may be fed, or perhaps the family have its morning meal. Such an arrangement should be planned so it would interfere in no way with the real function of the kitchen or the service of the food in the dining or living room, and if the kitchen is one in which any considerable cooking is done, the alcove should be so situated that it is protected from contaminating odors, excessive heat, and humidity."

According to Coit (9:A:28) the kitchen in the lowest income families, often has to serve as work center for washing, cooking, eating, dishwashing, drying linen, ironing, bathing the smallest children, homework, recreation, and even informal entertaining.

Lindquist (10:15) reports that kitchen space neither too large nor too small to provide for food preparation and dishwashing, plus storage of materials and equipment used, is important. Floors in both kitchen and dining room must be easily kept clean and linoleum type coverings are recommended for this.

In the findings and recommendations of the survey of the Women's City Club of New York (16:11) it is suggested that in the kitchens, floors be resilient and also easy to clean, inexpensive, impervious to water and long wearing. Wood covered with linoleum on felt is ideal but too

expensive for this housing level. Should not be black, and hence light absorbing.

Work surfaces in the kitchen should be resilient to minimize clatter and chipping of dishes, but also hard enough to prevent marring in process of slicing or by contact with hot cooking dishes. It should be possible to scour these surfaces.

Relationship Between Rooms and the Satisfaction Derived from the Home

The very definite liking for spacious rooms in general and large living rooms in particular is proved by findings of the groups of cooperators for this study. Eight cases, or 24 per cent, stated appreciated of their large living room, while three cooperators, 9 per cent, complained about the small size of similar areas for one reason or another. Other comments pertaining to bedrooms, studies, baths, and kitchens also showed decided preference for living and working space that was uncrammed. Guest rooms, sewing rooms, and areas where special phases of family life may be carried out are all valued.

Specific likes and dislikes in this connection appear in desire for living rooms through which no traffic is necessary, dust saving, dirt, and increasing privacy; similar tastes in regard to dining rooms; halls and pas-

sageways between different areas of the house which are protected from the view of the living room and easy accessibility to the garage either through a door opening directly into the house, or by covered connecting space.

Doors so placed that they give easy access to much used areas are desirable and those which open across cupboards, other doors, or heating fixtures are unsatisfactory.

Findings of other surveys are similar. Compactness in the arrangement of rooms is stressed in the Lindquist study (10:16). This is emphasized as a means of saving time and strength for household activities. Those living in houses built all on one floor recommend this plan highly. If this is impossible, one bedroom within reach and call of the working area for use in case of illness is recommended. Use of breakfast space other than the dining room approved as time and step saver by many. The distance from the laundry room to the kitchen is a point to be considered in the easily kept house, and there are some who recommend that a separate room on the first floor is preferable as a laundry to one in the basement. A central hall or vestibule is another convenience.

According to Coit (9:A:20), congested areas as the living room, without extra room, cause many difficulties.

Homework of children suffers, the breadwinner has insufficient rest at home, there is no place for children to play without bothering older members of the family, unless there is other playroom or workshop, and the family must often eat in this already congested space.

Sleeping Area

The likes and dislikes concerning sleeping areas as expressed by cooperators in this study suggest a general need for good light and ventilation, particularly cross-ventilation for all bedrooms. This was particularly noted in a group of houses in which the bedrooms were built in the roof slope and with no attic space above. There was also a decided preference stated for some room on the first floor such as the study which could be used as a bedroom in case of emergency. This, of course, was only found in instances where bedroom space on the first floor was not already found. One cooperator indicated that in her individual opinion two bedrooms on the first floor were desirable for any home having small children.

The maid's room or space where one might be put at a future date was expressed as a need by another cooperator.

These findings follow rather closely those of others in the field. The Lindquist study (10:13) recommends a bedroom for parents; cross-ventilation in all bedrooms if

possible (sleeping porch good); sleeping area sufficiently large, of comfortable temperature, and attractively furnished, so rooms available for study, and play, as well as sleep and storage. In homes where entertaining is frequent, a guest room which prevents need of "doubling-up" is desirable. May have double purpose as sewing room so its use is greater.

According to the findings of the President's Conference on Housing (17:C:24), separate bedrooms for the different members of the family are far from prevalent. In the 1,006 urban families, there were 911 bedrooms occupied by only one person, or an average of .9 such bedroom per family. This means that not one person per family had a room of his own. There were 1,004 bedrooms occupied by two persons, or approximately two persons per family in a double room. There were 150 bedrooms occupied by three or more persons, or about one such crowded bedroom to every seven families.

In the American Public Health Association Survey (14:360), one of the principles of healthful housing is listed as adequate privacy of the individual. It is stated that overcrowding either in the city or the home may be the source of nervous irritation. "A room of one's own" is the ideal in this respect, and a room shared with

not more than one other person is the essential minimum. Sleeping rooms of children above the age of two years should be separate from those of parents, according to psychiatric opinion, and English law provides separation of the sexes at 10 years; some American authorities recommend it two years earlier. Toilets, bathrooms, and bedrooms should be accessible from halls or living rooms without passing through other bedrooms or bathrooms. Dwellings should be so spaced, or their windows so located that direct vision into another dwelling is not possible.

The Wilson study (18:6) showed that in a group of 94 rural Oregon homemakers, classed as other than farm dwellers, 54.2 per cent expressed the desire for one bedroom on the first floor of a two-story house, while 42.5 per cent felt that two such rooms was their choice.

Play and Recreation

Space for play and recreation should be provided according to the age of different members of the family group, and its nature will vary as this changes from time to time. In general, play space on the first floor, and particularly some which is in or near the main work centers, especially the kitchen, is needed for families with small children.

Recreation centers in parts of the house away from the main living rooms or bedrooms were favored for older children, but it seemed that the recreation room in the basement is little used until the children are of an age to play happily and safely with others of their own age group and without the supervision of mothers. After this, or probably from seven or eight years up, the room finds increasing use. Some mothers with adolescent boys found it of great value as a center for these boys to enjoy themselves without any damage to more fragile furnishings.

Bedrooms as a play space did not seem to find great favor among the cooperators of this survey. This was particularly noticeable in homes with very small children where play supervision would be of greatest need. One mother suggested use of a Dutch half-door for a child's bedroom used as a playroom and another stated the wish for at least an alcove off such a bedroom where toys could be stored without cluttering the main room.

Among the adults, terraces, porches, and studies seemed more popular as recreation centers than did basement recreation rooms.

According to the President's study on Housing (17:C: 23), the 1,707 families with whom this study deals usually appraised their space accommodations in the terms of the

living room and sleeping quarters; whereas a large living room was more apt to call forth favor, many answers proved that family discord may result if there is no place but this room for a group of persons of different ages and interests to spend their leisure.

According to Field (6:55), the following statement has bearing on the relationship between a recreation center and satisfactory housing: "We need, therefore, to provide room for several children to play together, without crowding, so that they can learn to 'take turns,' to work in cooperation. Crowding children together so that they poke each other or knock each other's toys down every time they turn around, is just inviting trouble."

Play space of different types is recommended by Lindquist (10:10) and it is suggested that it be capable of meeting varied and changing needs of the family. For instance, living room and gym or recreation room suitable for one age, while two living areas better during adolescent years. A play space on main floor helpful with a young child in family. Similarly, play area out of doors is important for contentment of mother and children. This is most easily supervised if the area is visible from work area of the house.

Bathroom Facilities

Bathrooms or lavatory facilities on the main floor plus adequate bathing accommodations on every floor where there are bedrooms were desired by many of the cooperators in this survey. Storage room for linens and other supplies used there was indicated as desirable as also was a type of wall surface which was easily cleaned. No definite conclusions came out of this survey as to preference for shower over tub or vice versa, but there was some indication that a shower stall was favored over a shower in a bath tub, and the tub bath was given preference in one or two instances where small children were a bathing problem.

Other studies in the field bear out these tastes and requirements. According to the findings of the President's Conference on Building and Housing (17:C:18),

The strides in urban housing are perhaps most apparent in the matter of bathrooms. Of the 554 rural families surveyed, 77 per cent have no bath, 19 per cent have one bath, and 4 per cent have two. On the other hand, only 12 per cent of 953 urban families reported lack of a bath, while about 75 per cent have one bathroom and 13 per cent have two or more.

Once families do have bathrooms, the cry is for more. Of a group of 349 urban families which discussed satisfactions and dissatisfactions concerning bathrooms, 156, or 44 per cent, want a second. Their reasons are to avoid family misunderstandings. "All must have baths and often it causes

trouble as to who will be first, or because one uses all the hot water." "Too many for bathroom early in the morning" is a usual complaint among families with children of school age.

A downstairs lavatory was suggested often by women with small children and by rural women wanting some place other than the kitchen sink where the men might wash. Bowls with running water for individual bedrooms were also proposed to relieve congestion in the one bathroom.

According to the findings of the Lindquist study (10:15), more women agree on the importance of a lavatory or bath on the first floor, particularly if there are young children, than on any other one point in arrangement of rooms. Several regard two baths as a minimum in families of five or more. Partitions between toilet and other facilities are suggested by some for more privacy and less congestion.

According to the survey conducted by the Women's City Club of New York (16:13), the location of the toilet in a separate compartment is favored by one-third of the women as a means of increasing the privacy and the availability of the bathroom. The height of lavatories in the bathrooms is usually too low and it is suggested that they be thirty-three or thirty-four inches instead of the thirty-one inches that appears to be the usual height.

It should be remembered that this study was conducted among slum dwellers and that their housing desires differ

radically from those of cooperators in this study.

According to Coit (9:A:28), the following housing features are approved and certain trends are indicated. Showers are now increasing in desirability, probably largely because school children are shower trained. Tubs need built-in hand grips, placed well forward for easy reach; and metal, not ceramic, grips on all faucets, etc., to avoid cuts. Locks on doors should be placed high enough to be out of reach of young children. Storage space in the bathroom is needed for cleaning brushes and powders, hot water bottles, all the family towels, toothbrushes. A medicine cabinet should be locked. Toilets, separate for bathroom and lavatory, are reported good by many families.

Data compiled by Sleeper (13:69) points out the fact that more money is involved in the development of bathrooms per unit of volume or area than for any other part of the dwelling. This problem is multiplied by the trend to use several bathrooms per dwelling. Several recommendations as to the location of bathrooms are made by this author. They are as follows:

Location and extent of toilet facilities

Minimum for family, 3 or more in dwelling, is two water closets, two lavatories, one shower and one bath (these may combine).

- a. When sleeping rooms occupy two or more floors, there should be a complete bathroom on each such floor.
- b. When there are more than three bedrooms, allow one extra bedroom for every two bedrooms over three.
- c. When there are servants' rooms, provide at least one complete bedroom exclusively for servant's use.

Location for privacy

- a. Install water closet in separate compartment when possible. Best if this is entered from room or hall it serves without entering adjacent bathroom.
- b. If possible, bathroom serving two adjoining rooms entered from common hall by single entrance rather than separate door into bath from each bedroom.
- c. Bathrooms not directly at head of stairs.

Location for economy

- a. Plan plumbing on two floors over each other for minimum of piping and on same floor, back to back, for same reason. But never let cost of construc-

tion stand above convenience when in use.

Location for quietness

Isolate from adjoining rooms by closets or passageways when possible. Wrap pipes and isolate from metal which will conduct sound.

Maintenance and Ease of Cleaning

Among cooperators in this study the ease with which a house could be cleaned and the problems or lack of them presented by its maintenance were rather important factors. Definite liking was expressed by certain members of the group for wood paneling and for dark finished woodwork due to this very thing. Nor was there any criticism of either the wood paneling or the dark woodwork from any other standpoint. In some instances it was indicated that the cooperator would make use of natural or stained woods for ease of upkeep if rebuilding.

Linoleum found favor as a floor covering not only in kitchens and baths, but for entry halls and other spots where its resilience and ease of cleaning gave it special value. This was particularly noted in those homes located beyond the areas where cement sidewalks are the accepted thing.

Floor surfaces or coverings in general were preferred if they were easily cleaned and in some instances if they cut down noise.

Wall surfaces which were rough or hard to clean received criticism, and one cooperator brought out an interesting point in her stated dislike of bath and kitchen wall finishes of a composition board which was satisfactory in every respect except that it would not take paint and it was impossible to change the color scheme.

"Too many windows," but probably truly too much glass surface was the criticism of another cooperator in whose home there were two small children.

Coit (9:B:9), in discussion of flooring, lists hardwood, properly laid, as the surface most satisfactory for floor areas of hard wear, and states that this is even true in apartment houses. She quotes from a United States Bureau of Standards publication in which classification is made of 23 floor coverings according to their relative values with regard to the extent to which they will resist abuse and provide comfort. According to this study top rank is given to linoleums (three grades of battleship and one marbled). From the standpoint of abuse alone, the rank is marbled asphalt tile, pressed

fibre-boards, short strip maple, strip Douglas fir, strip white oak, asphalt tile (plain maroon), asphalt tile (plain black), yellow strip pine, inlaid linoleum gray-mottled, and rubber tile.

Safety

In the present study, cooperators listed the following factors of housing that they considered of positive value in the interests of safety, health, and comfort in the home.

Doors protecting the bottom of the stairway and wide stair treads with hand railings. From the standpoint of light, positive value was ascribed to homes with many windows, to large view windows, and to ornamental windows as bays.

Of negative value in this field, cooperators list changes in room level, particularly when there are young children in the home; steps located in an entry way were considered a hazard; as were unlighted steps in any location, or those not adequately protected by a railing.

Sufficient lighting for all areas was stressed, as was need for enough convenience outlets to insure good artificial lighting without use of a complicated maze of electric cords.

Doors which open across an open fireplace or hearths which are raised in such a way that there is danger of tripping are also considered dangerous.

According to the findings of other studies, safety in the home is a matter to which much attention should be paid.

According to the National Safety Council (11:67), there is a yearly total of more than 3,000,000 home accidents which make up 34 per cent of the sources of accidents resulting in death for the nation. These follow a definite pattern in the following order:

| | |
|----------------------------|-------|
| Porches and outside stairs | 21.0% |
| Yards | 18.9 |
| Kitchen | 17.8 |
| Halls | 11.8 |
| Living rooms | 8.4 |
| Bedrooms | 7.0 |
| Basement | 5.7 |
| Dining rooms | 3.0 |
| Elsewhere | 2.8 |
| Bathroom | 2.6 |
| Garage | 1.6 |

This same survey lists accidents as to causes due to (a) unsafe conditions; (b) unsafe practices.

Safety suggestions as outlined by the United States Housing Authority are:

For Yard

1. Short flights of steps with handrails; well lighted.
2. Retaining walls topped by high and solid walls.

3. No sharp changes in grade or level, especially in living area.
4. A protected play area, easily supervised from house, if there are small children in family.
5. Open garden pools unsafe for small children.
6. All walks with proper drainage, pitch and slope, and non-slippery.

Garage

1. Good ventilation.
2. Easily operated doors.

Porches

1. Minimum number of steps; light surface, non-slippery; suitable riser and tread ($7\frac{1}{2}$ " and 10" respectively).
2. Down lighting for steps.
3. Post hard for child to climb.
4. Second floor porches with safe rail guard.

Inside Stair

1. Have adequate illumination.
2. Have non-slippery treads.
3. Continuous handrails.

Bath

1. Flat bottom tubs with roll rims; hand holds good.
2. Non-skid floors in showers.
3. Metal used for towels and grab bars; soap dishes and fixture handles. Ceramics shatter and cause cuts.

4. Convenient handles and good mix valve on showers.
5. All switches and convenience outlets so located they cannot be used from tub or lavatory.
6. Locked and lighted compartment for poisonous drugs and chemicals.

Kitchen

1. Cooking range not close to window (curtain fires).
2. No cupboards or shelves over stoves (i.e. fall on burner while reaching).
3. Easy access to the live storage space.
4. Adequate lighting, both general and for special locations.
5. Light switches at all entrances.
6. Cutting utensils in racks, not drawers.
7. Vents for all combustion stoves.
8. Oven and broil of correct height to avoid stooping and lifting.
9. Non-slip floors.
10. Avoid projecting corners; toe recess desirable.
11. Glass panel in double swing door to dining room.

Living Room

1. No change in floor level at entrance.
2. Raised hearth.
3. Adequate storage for wood and books.
4. Adequate, flush fire screen.
5. All large glass protected by low platform or rail.

6. Adequate light day and night.
7. Floor coverings non-shed and floors non-slippery.

Basement

1. Fire-resistant ceiling.
2. Light switch at head of stairs.
3. White or light at foot of stairs.

The recent report compiled by Winslow for the American Public Health Association (14:371) states as one of its fundamental principles the protection against falls and other mechanical injuries in the home. Stairs, windows, balconies, bathtubs, and outside steps and walks are areas of danger. Steps should have handrails, wide treads, and adequate width (7 to $7\frac{1}{2}$ inches for the riser and 10 inches for the tread), and if closed at top should have 30-inch space between door and step. Porches or balconies and similar elevations should have protection at least 30 inches high, and low windows should be barred or screened. Built-in hand holds placed well in front of the bather's equipment should be placed in wall behind built-in tub. Adequate lighting of exterior courts, walks and steps is important safety factor.

So far as safety on stairs is concerned a technician's recommendation as listed by Ramsey and Sleeper (8:111) suggests the following building practices:

Stairways:

Recommended minimum width of tread with nosing =
11 inches

Recommended maximum width of tread with nosing =
15 inches

Recommended minimum height of risers = 6 inches

Recommended maximum height of risers = 7 3/4 inches

Height of handrails at landing recommended as 2' 10"
to 3' 0"

Storage Facilities Other than in the Kitchen

Cooperators in this study showed keen appreciation of the need for adequate and well-planned storage space. Plenty of large closets in all areas of the home plus specially planned storage for certain purposes was appreciated when present and the lack was keenly felt in other cases.

Bedroom closets which are generous in size and which are so constructed with either double doors or doors which are centered to permit easy reach to all parts of the closet are considered essential. Hall closets for wraps plus appreciation expressed by cooperators in whose home two closets--one for family and one for guests--are found are indicative of pleasing features here.

Closets for bedding, fruits, cool storage, cleaning supplies, etc., are the choice of those surveyed and the

need for placement of such facilities near the center of their use is also expressed.

Other authorities and studies in the field bear out these findings. According to Coit (9:A:29), storage facilities and conveniences are undoubtedly the most unanimous demand in housing today. Broom closets, wrap closets, in the hall and near the back door, cool storage closets, kitchen closets near the stove and near the work surfaces, linen closets, bedroom closets, toy closets, are demanded vociferously by a people still rather inarticulate as regards most of its housing needs. The National Safety Research Institute points out the frequency of serious falls by reason of household equipment stored on cellar stairs, or falls by people climbing on flimsy furniture because they have no closet in which to keep a step ladder, of children's falls when climbing to a high shelf for toys which ought to be kept in a low toy closet, of accidental poisoning from an unlocked medicine closet, and so forth.

Lindquist (10:14) states that adequate amount and kind of storage for all things used or needed in the home, plus accessibility of storage space to persons using, especially children, promotes order and comfort and reduces friction.

The Coit (9:A:22) study also indicates that a general utility room seems growing in popularity. In fact, there are several types. One is storage space in the cellar-less, atticless home. Another combines laundry, pantry, vestibule, and general storage. In some it combines heating unit with laundry room.

The report on the President's Conference on Housing (17:D:41) suggests that storage space of all sorts be made more usable by the additions of hooks, rods, cleats, racks, and partitions; and, in addition, labels be used for more ready accessibility. This same study states that certain principles are fundamental. Recommended practice is based upon the following:

1. Articles, in general, are stored near the place they are to be used. Preference is given to the things used most often.
2. Articles are so arranged that each may be removed or replaced without displacing another.
3. The necessity for stooping and high reaching is avoided in storage of articles used frequently.
4. Protection from conditions such as dust, sun, moisture, bacteria, and vermin is provided.
5. Waste space is avoided by planning each storage unit to fit the size, shape, and position of the article

to be stored. In other words, it is well to list or assemble the articles to be stored and literally build a storage place among them. Recommendations for so doing follow.

Built-in Storage Spaces and Suggested Locations

Primary Needs

Coat closets: Near the front entrance.

Space for table leaves: Near dining room. In larger closet or separate closet built for this purpose.

Linen Closet: Near bedroom and bathrooms; preferably in hall.

Clothes Closets: At least one in each bedroom; preferably one for each occupant.

Closet or Cabinet for Children's Toys: Play room, living room, den, or bedroom, depending upon plan of house and room most used by children for play.

Cleaning Closet for second floor: Preferably in hall
(Note: Cleaning closet on first floor is included in report of Kitchen and Other Work Centers).

Bathroom Closet: Over bowl in bathroom; preferably in furred out wall.

Storage Closet: (one or more) Wherever most convenient. (For unused baby carriage, two trunks, dress form, etc.)

In studying housing it is impossible to cite any examples of what might be termed a "typical American home," for the standards vary not only with the individual family occupying the dwelling, but with the community and even the region of the United States. However, there is a noticeable trend toward acceptance of certain standards as ideal, or as conducive of comfort and convenience in those homes where they occur. This list includes many of the features evaluated by cooperators of this study and mentioned by other investigators.

According to the Lindquist study (10:16), features insuring a convenient and livable dwelling include good floors; hot and cold water from basement to bedroom levels; sink in the kitchen; chutes for soiled clothing, and for waste paper and garbage; wall hung radiators; plentiful electric outlets and electricity. A tile floor in vestibule and bath and tile or cement for the porch are desirable.

A heat regulator on the first floor (some listed one also on second); soft water for household purposes; a good furnace; weather stripping are added conveniences and com-

forts. A fireplace is recommended primarily for the part it can serve in promoting home life. A heated garage is another comfort listed.

The color and finish of the woodwork adds to or decreases the amount of time required for its care but there is no agreement on the most satisfactory type. The exposure of the rooms affects the cheerfulness.

The expressed needs of Lindquist's cooperators are listed as follows:

- 20 per cent list inadequate or poorly arranged bedroom space
- 10 per cent list lack of privacy
- 21 per cent list inadequate play space or size of room for child play
- 23 per cent list amount of cleaning to maintain standard out of proportion
- 16 per cent list lack of storage cause of friction and disorder
- 15 per cent list need of rearrangement to free time and energy
- 12 per cent list difficult heating problem complication to management.

The Presidential Conference on housing (17:C:8) lists the following distinct functions which the home and its furnishings should perform:

First, the house must serve as a work center for carrying on the various tasks of household production.

Second, the house must be a health center for those within it. To this end it must be so built as to have sunlight, air, proper sanitation, and with a view to other structural details which affect health and safety.

Third, the house must be the center of family activity--as a group and as individuals. In this role the functions of the house are:

1. To provide a background of peace and security so that the members of the family may relax from the strain of life outside.

2. To provide for privacy--the refuge where one can be alone and indulge one's own desire, whether it is to rest, to read, or to follow an avocation or hobby.

3. To provide an environment where the members of the family may secure the benefits and enjoyments of one another's companionship--in other words, where their affectional needs as human beings may be satisfied.

4. To provide for social contacts and opportunity for all members of the family, both parents and children, to entertain friends.

According to Field (6:18), "zoning is a functional attribute of good housing. That is to say, whenever people build houses primarily for use and comfort you will find them zoned; that is why farmers use their large and

comfortable kitchens as sitting-rooms. This is their activity center which is fun to live in and work in and play in. That is why these same farmers acquire 'parlors' as quickly as possible--so that they will have a quiet room that is pleasant, permanently prepared for the entertainment of guests, a place where youngsters can practice the decorum they may need in later years, a place for the housewife to keep things she considers valuable where they will not interfere with the normal needs of her husband and children."

CHAPTER VI

SUMMARY AND CONCLUSIONS

This study was undertaken to obtain an evaluation of housing features from home owners who have had opportunity to study them in conditions of actual use. Cooperators were limited to those persons who had built homes for occupancy of their own families within the period from 1930 to 1941. All families had children, but these varied in age from infants to college students. All homes considered in the study were within the \$5,000 to \$12,000 price range for dwelling only, and all were in the Willamette valley region in Oregon.

Data obtained from the 33 cooperators were gathered on check sheets which listed certain fundamental points, but the important part of the study is based on listings by each cooperator of features in her home which she considered desirable and worth repeating, and those considered undesirable, and worthy of either change or omission in future dwellings. These listings were free and unprompted.

Composition of the families of the cooperators showed that 18 homes, or 55 per cent of the group, had children less than six years of age; 17 homes, or 52 per cent, had

children of grammar school age; and six, or 18 per cent, had those of high school or college age. Nine homes, or 27 per cent, had some overlapping of age groups. Other persons living in the homes include maids in four cases, boarders or roomers in four, and an older relative, a grandmother, in one.

Arrangement of rooms for the convenience of the homemaker is one thing closely related to the ages of children and the general makeup of the family. In the free evaluation points considered important by the cooperators made themselves evident.

Either bathroom or lavatory facilities on the first floor existed in 31 cases, or 94 per cent of the total survey group. In the free evaluation, four of the cooperators listed this as one of the features they liked. One suggested that with small children in the family she found evening baths simpler if the bathing facilities on the first floor included a tub rather than a shower. One cooperator expressed the desire for a bath of some sort on every floor with a bedroom. Still another expressed the need for a second bathroom on the second floor where bedrooms for five persons are located.

One or more bedrooms on the first floor were found in 22 cases, or 67 per cent of the total group. One

cooperator listed this arrangement among the liked features in her free evaluation, while another said that in a family with small children she felt the need for at least two bedrooms on the first floor until such time as the children were able to sleep upstairs alone.

Concerning the size of sleeping rooms in general, two cooperators listed large bedrooms among the liked features in their free evaluation. Two more listed as dislikes the fact that their bedrooms were all small, while still another said she disliked the fact that one of her bedrooms was small. One other expressed appreciation for a guest room plus plenty of space for sewing and other activities on the second floor.

Studies or dens were found in 12 of the homes surveyed, or 36 per cent. In the free evaluation two cooperators praised the privacy these afford, while one more expressed the need for such a room based on the same reason. Three cooperators liked the study as an auxiliary bedroom in case of illness or house guests, while another expressed the need for such a room on this same basis.

Other comments occurring in the free evaluation and relating to room size or arrangement are as follows:

9 cases, 27 per cent, expressed liking for a large living room.

2 cases, 6 per cent, disliked living rooms too small or narrow.

1 case, 3 per cent, disliked living room too small for grand piano.

5 cases, 15 per cent, expressed liking for large rooms in general.

6 cases, 18 per cent, liked hall routing traffic around living room.

1 case, 3 per cent, disliked front door opening into living room.

2 cases, 6 per cent, disliked traffic routed through dining room.

2 cases, 7 per cent of the 31 cooperators, having two-story houses, desired that rooms be placed all on one level.

From the findings of this portion of the survey it is evident that there is a general liking for large rooms, particularly living rooms, and a general feeling that living rooms or other areas of special use should not be used as passageways. Bedrooms on the first floor are valued, as are bath or lavatory facilities. Studies, which afford privacy in the nature of a second living room or which give an auxiliary bedroom for emergencies, are also favored.

All homes surveyed had dining rooms separate from the living room and only one cooperator expressed the desire that change be made to include dining and living room area. In ten homes, 30 per cent of the group, separate breakfast nooks were found and there was no dissatisfaction expressed in regard to these. In 19 cases, or 58 per cent of the group, some facilities were provided for service of meals in the kitchen. The only criticisms occurring here were due to lack of space and more room was the only wish of cooperators in this matter. Of the four cases having neither nook nor kitchen table, only one cooperator did not express a wish for kitchen dining facilities, and her opinion is based on desire to keep up family dining standards.

In the free evaluation, two cooperators expressed liking for their large dining rooms, while two more wished that theirs might be larger.

In view of these findings it appears that separate dining rooms are preferred by the majority of these cooperators, that some facilities for serving meals in the kitchen are definitely their wish. Also, there seems little or no grounds for choice of a nook over table space in the kitchen or vice versa, but rather a definite need for ample seating room and convenience in serving in

whichever type is chosen.

View of the cooperators in regard to kitchens showed plainly in their free evaluations.

5 cases, 15 per cent, liked a compact kitchen.

2 cases, 6 per cent, liked a large kitchen.

1 case, 3 per cent, disliked too short a kitchen, resulting in too little work space.

4 cases, 12 per cent, liked generous cupboards.

2 cases, 6 per cent, disliked insufficient cupboards.

1 case, 3 per cent, disliked cupboards extending too high.

1 case, 3 per cent, disliked cleaning problem resulting from cupboard placed over stove.

1 case liked waxed wood paneling as easily cleaned.

1 case disliked cleaning problem created by window too low over sink (6 inches). Said splashing was unavoidable.

1 case disliked use of composition board in kitchen. Proved efficient for use, but its permanent color created monotony.

2 liked a delivery port for groceries.

1 liked a delivery port, but disliked its too low placement.

I liked a cooler with ventilated drawers.

I expressed the desire for a cooler.

In the general findings of the survey there is evidence that kitchens are work centers for food preparation but that many homemakers wish to carry on other activities there too. For this reason there is some preference shown for generous kitchens. In these, and in those of smaller size, compactness of essential equipment and ample, well planned storage space are essential. Activities other than those relating to food preparation favored by co-operators in this study include washing, ironing, dining, sewing, and child play.

Space for play and recreation seems to be variable with the composition of the family, especially with reference to age. In families with pre-school children, the expressed need is for play space on the first floor, close enough to the mother's work center to be easily supervised. With children of grammar school age the recreation room located in the basement or away from the main living room gains in value, and with the high school and college age groups this value still holds. However, on this last level, there seems to be a growing need for use of some of the living area on the main floor and this calls up the need for a second living room for the use of the

parents, such as a study or a large upstairs room in which no one need be sleeping.

Of the homes included in this survey, 20, or 66 per cent had recreation rooms or space intended for them, in the basement; while one had such area over the garage. Many such recreation rooms were multi-purpose, being also used for drying, and work rooms.

Only two cases in the entire survey, 6 per cent, had no form of basement. Of the remaining, there were 25 full basements, five partial basements, and one excavation for a furnace only. Uses made of this space other than for the recreation rooms included 30 heating plants, 25 laundries, seven work shops and one maid's room.

There is every indication in this survey that in this region basement excavations find such wide and complete use that they are desired in even those instances where fully automatic heating systems and first floor laundry rooms exist.

Of the 25 laundries located in the basements of the houses surveyed, cooperators expressed the following free comments.

3 have maids to do the laundry.

5 prefer a first floor location.

14 ignored laundry room completely.

3 stated it was satisfactory.

Of the seven survey cases, 21 per cent, having first floor laundries, none expressed dislike, 84 per cent listed it as liked in their free comments, and the only criticism expressed was for inadequate space. From this it is evident that the trend is strong for first floor laundry facilities in homes where the homemaker does her own washing.

Survey of heating plants in homes of cooperators showed a definite liking for those requiring the least possible amount of attention, 70 per cent being fully automatic and the remainder a semi-automatic type in which sawdust is used. This last is a local trend gaining popularity from the availability and economy of this type of fuel.

Fireplaces were found in homes of all cooperators, their number varying from one to four. Only one home had no fireplace in the living room, and here omission was on grounds of neatness. Of the remaining 32 living room fireplaces, 11, or 34 per cent, were rated as little used. Five more, or 16 per cent, had moderate use, while only 16, or 50 per cent, were classed as much used. One very important point which came out in this survey was the fact

that in a home with automatic heat, implying thermostatic control, the fireplace is not only unnecessary for warmth during most of the year, but its use upsets the heat balance of the home during the time the furnace is operating. This is particularly true in cases where the thermostat is in the room with the fireplace. In some instances cooperators had taken steps to offset this by moving the location of the thermostat to a hall or dining room or turning off the heat leading to the living room during the time the fireplace is in use.

Woodlifts, especially in the living room, seem desired by some homemakers on the grounds of convenience and cleanliness.

In considering the source of plans for homes in this study it appeared that the greatest degree of owner satisfaction resulted from those drawn up with the specific family in mind. This seemed to hold whether the designer was a registered architect, student, or builder and contractor. Moreover, changes in composition of the family seemed responsible for the greatest number of desired changes in the older homes, making it seem desirable that provision for such adjustments be made in homes for families where such changes may reasonably occur.

Changes in floor level, either between rooms or within a room were frequently listed as safety hazards, especially in homes with young children. This is particularly true when they are in a dark entry, and in the opinion of many of the cooperators, dark halls or stairways, usually those without a direct window to the out of doors, are also listed as unsafe.

For ease of cleaning, two cooperators mentioned a liking for waxed natural wood paneling in their free evaluations, while another mentioned dark woodwork for the same reason; and still another stated that she preferred less light woodwork than she had. In this case there were two small children in the home and the same cooperator also listed a dislike of so much expanse of glass window in her living room. Three cases, or 9 per cent, expressed liking for linoleum as floor covering in halls and other areas besides kitchen and bath where dirt is tracked in. In some instances these homes were not located on paved sidewalks.

In considering storage facilities, several interesting points came out in the free evaluations of the cooperators.

2 cases, 6 per cent, needed more cupboards for general storage.

2 cases, 6 per cent, liked their generous storage facilities.

1 case, 3 per cent, disliked a closet too short for formals.

1 case, 3 per cent, liked large bedroom closet.

1 case, 3 per cent, liked bedroom closet with double doors.

1 case, 3 per cent, liked bedroom closet with easy access to all shelves and storage areas.

3 cases, 9 per cent, liked large front hall closet.

2 cases, 6 per cent, liked two hall closets, one for family and one for guests.

1 case, 3 per cent, disliked open closet in front entry.

1 case, 3 per cent, liked a large, walk-in bedding closet.

1 case, 3 per cent, liked a cupboard in the living room for games and tables.

2 cases, 6 per cent, needed more storage for linens in dining room.

2 cases, 6 per cent, needed larger cleaning and broom closets.

1 case, 3 per cent, disliked lack of any cleaning closet.

1 case, 3 per cent, disliked lack of fruit room.

1 case, 3 per cent, liked large fruit room on the first floor.

From these evaluations of storage facilities it seems that these cooperators feel the need for storage space that is adequate in amount and that is well planned for use.

Recommendations for Further Study

1. A study of the laundry operations and present laundry facilities, with evaluation by the homemakers. This evaluation should include reasons for present practices and for desires to change.

2. A study of families having homes with no basement excavation, comparing their practices of household management with those of similar families living in homes with basements.

3. A study of the use given play and recreation areas in various locations as basement, first floor, out of doors, and so forth.

4. A relative evaluation by homemakers of specific housing features as the basis of choice in planning homes which would be limited in cost.

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APPENDIX A

CHECK LIST USED IN SURVEY

CASE STUDY OF _____

Year House Built: Name of Architect _____Source of Plan: Type of Building: _____Construction Details:

Rooms on 1st floor:

| | | | | | | | |
|----|----|-------|---------|-------------|------|----|-------|
| LR | DR | Study | K (Nook | (Space in K | Hall | BR | (Bath |
| | | | | | | | (Lav |

Rooms on 2nd floor:

Bedrooms _____ Baths _____ Other Rooms _____

Basement and Other Floors _____

Rec. Room Laundry BR Other Rooms

Heating Plant - Type: Location:

No. of Fireplaces _____ Where located? Fuel for?

Amt. Use for L.R. fireplace?

Insulation? Weather stripping?

Data on Household:

Members:

| | | | |
|--------|--------|-----------------|-----------------|
| Father | Mother | Boys | Girls |
| | | (ages in years) | (ages in years) |

Other occupants: (Relation of _____)

Work Habits of Family

Occupation of Chief Wage Earner:

Tastes and interests of other members:

Plan of family entertaining:

Check Points for Observer:

Adequacy of storage space:

Areas overcrowded or underused:

Expressed Likes of Cooperator: Reasons

Expressed Dislikes of Cooperator: Reasons

APPENDIX B
CASE STUDY 8

CASE STUDY 8

(Example of case in which family of cooperator has two older children, maid, many individual interests, and lives in a rather elaborate two-story house.)

Data on House

This house was built in 1936 from plans drawn up by the owner and with blueprints merely made and checked for technical details by an architect whose name the owner did not remember. This was done for a flat fee and was apparently a minor step in the operation, in the opinion of the owner. Building was then turned over to a contractor and close supervision was given by the owner.

This house is split brick and shake construction with much use of lightly stained and waxed wood inside. The ground floor has living room, dining room, study, hall, and lavatory. The kitchen is also on this level and has no nook, but a small table at which the family eats its lunch, and the maid eats all of her meals. On the second floor are one large bedroom and three small ones, along with two baths. Attic space is reached by a ladder and serves only as insulation against heat since it is little available even for storage. In the basement there is a large well finished recreation room, a sealed

fruit room, a furnace room, and a laundry. The heating plant is air-conditioned oil and there are two fireplaces, one in the living room and one in the recreation room. Fuel is stored in the furnace room, but neither fireplace is much used, the one in the living room making the house so warm that it upsets the heat balance maintained by the furnace. This home is weather stripped, but due to the brick used on the first floor, insulation was not thought necessary.

Data on Family Occupying

This family consists of the father, mother, and two boys, one 14 and the other 12 years of age. A school girl lives in the home and acts as part-time maid, doing the cleaning and the ironing while the homemaker does the laundry and all of the food preparation. This homemaker is very active in such activities as sponsor for cub scout troops, parent-teacher association, and college alumni groups. She believes in seeing that the children get training in music and dancing, and also athletic sports such as they would get at an athletic club. During the winter months she takes the neighborhood group ice skating about once a week and skates with them herself. She does much of her own sewing and has a strong interest in handcrafts. During the last few years this has been

metal arts and besides many small pieces she has just completed a silver tea service. The family plan for entertaining is quite an extensive one as it includes the friends of the children, business clients of the husband, the relatives which comprise a rather large family group, several clubs including an evening dancing club of which they are members, and some alumni organizations. Occasionally when the social calendar seems a bit slim, this homemaker will plan a luncheon for a group of little girls who live in the neighborhood just to get better acquainted and because she likes little girls. Both formal and informal entertaining are taken as a matter of course in this home, and the average number of formal teas held during the year is probably two or three.

Expressed Likes; Reasons

1. This homemaker particularly likes the amount and arrangement of storage space in this house. She says that she has "27 shelves in her kitchen." Some of these are used as dish storage, but certainly ample cupboard room is provided.

2. She likes the garage with the door opening directly into the house for convenience and comfort in wet weather. (Door opens into the dining room.)

3. She likes the downstairs lavatory and says it saves many trips upstairs with small children in the family.

4. She likes the convenience of a den downstairs for the privacy with work where concentration is needed, or just as a retreat on those times when there seems to be "too much family."

5. She likes the cupboard located in the living room in which card tables and games may be stored near the place where they are quite sure to be used.

6. She likes the kitchen placed to the front of the house and particularly the arrangement of the sink on the front wall so she can keep an eye on the children at play and see agents and visitors as they approach the door.

7. She likes the lower height of the sink and work surfaces planned to suit her five feet two inches.

Expressed Dislikes; Reasons

1. At the time the house was built the master bedroom had no provision for tub or shower, simply a lavatory. A shower was added two years ago.

2. The thermostat controlling the heating system was moved from the living room to the dining room so that every time a fire was built in the fireplace the temperature rise in this room did not turn off the heat of the

furnace and cause other parts of the house to become uncomfortably cool. This was particularly necessary since the boys have a double-deck bunk in their room and use it as a play room.

3. A window over the front door to light the hall would be desirable as even in the summer time this west entrance hall needs artificial light.

4. Upon rebuilding, the guest room and the maid room would be interchanged so that the guest room is not over the kitchen and the sound of breakfast preparations not so likely to disturb. This is also desirable because the main bathroom would be better placed for the guest room.

This house seems well planned and organized with plenty of storage and few unused and overcrowded areas.

APPENDIX C
CASE STUDY 11

CASE STUDY 11

(Example of case in which the family of the cooperator has small children, no maid, one grandparent, and lives in house chiefly built on one floor.)

Data on House

This house was built in 1937 from plans drawn up by the husband of the family who is an engineer. An architect checked them and made the blueprints. Building was done by a construction company which had formerly done only large buildings but which undertook this house as an experiment preliminary to going into the small-house field. The owner stated that he could not have afforded as good a house with as high quality materials and as many desirable features had this not been the case. Construction was the traditional type. The house is modified colonial with cedar siding.

On the first floor are found dining room, kitchen, with breakfast nook, living room, connecting hall, two bedrooms, and one bath. On the second floor one bedroom is now being completed and there is room for one more. The plumbing stacks and heat connections are already in place for the time when a bathroom will be installed. The basement contains the laundry and play space, which is

merely this and truly not a recreation room. An outdoor terrace opening from the living room makes a summer sitting room.

A sawdust burner with air-conditioning unit heats the house while the one fireplace, located in the living room, is seldom used because it makes the house too hot. The owner feels no need for a wood lift or other storage space for the fireplace on this account. This house is insulated with rock wool and is weather stripped.

Data on Family

This family group consists of the father, mother, and two girls 7 and $2\frac{1}{2}$ years of age, and, in addition, the wife's mother who spends much of her time in this home. The father is part-owner of a construction company which he and a brother inherited from their father. The mother is interested in A.A.U.W. and at least two other college alumni groups, but spends most of her time with the children. She sews and does some needlework such as hook rugs, quilts, and needle point; and collects old glass, for the display of which glass shelves have been placed in the bay window in the dining room. She does all of her own work with the exception of ironing and heavy cleaning for which purpose a woman comes in by the day. Entertaining is very informal and seldom for very large groups

except in the instance of some of the clubs to which only light refreshments would be served.

Expressed Likes; Reasons

This homemaker says that if she were rebuilding she would change the present plan in very few respects.

1. She likes the plan in general, saying that its routing and organization are ideal for a family with small children and no maid. The hall at the back of the house dividing the sleeping area from the living rooms insulates for sound.

2. She likes the convenience of the bedroom for the children on the first floor and states it saves her many steps both in the daytime and at night. At a later date, when the girls are older, a large bedroom and the upstairs bath will be finished for their use.

3. She likes the terrace opening from the living room.

4. She likes the entrance hall rather than a door opening directly into the living room, as it saves dirt and wear and tear on the living room, and adds privacy to the living room for family entertaining. She likes an extra large cement area in front of the garage. This is much larger than is necessary for the car, but it forms an ideal winter play space where the children may roller

skate and ride tricycles and where the sand box is kept all year round.

Expressed Dislikes; Reasons

1. If possible, this homemaker would like a small playroom or even an alcove off the children's room which could be reserved for play materials. At the present time wall paper in the girls' bedroom must be done over at least once a year; storage of clothes and toys is a bit crowded; and, as this homemaker expressed it, "that room gets so thick you could hardly fall into it." That would not be the case if this small bedroom were not used for both sleeping and playing quarters for the two children. This family realizes that this difficulty will exist only two or three more years; however, now during those hours of the day when the older girl is in school, the baby does not like to play alone in the basement and the mother objects to having toys under foot in the kitchen while she is working.

Check Points for Observer

Kitchen work space is adequate and there seems to be plenty of storage and cupboard space in this house. The family is a closely knit cooperative group and gets along well in the present setup. The child's bedroom is the

only one which is overcrowded, and this will be corrected when one or both of the children will be old enough to sleep upstairs.

APPENDIX D

COMPOSITION OF HOUSEHOLD

| Case No. | Number Living in the House | | | Others Living in House |
|----------|----------------------------|---------------------------------|------------------------|------------------------|
| | Adults | Ages of Boys | Ages of Girls | |
| 1* | 4 | | 11, 9, 2 $\frac{1}{2}$ | Maid and 1 roomer |
| 2* | 2 | 7 | 4 | |
| 3 | 3 | 2 | 5 | Maid |
| 4 | 2 | 5 | | |
| 5 | 2 | 17, 22 | | |
| 6 | 2 | 14 | | |
| 7* | 2 | 1 | 7 | |
| 8 | 3 | 14, 12 | | School girl maid |
| 9 | 2 | | 3 | |
| 10* | 2 | 1 $\frac{1}{2}$ | 11 | |
| 11* | 3 | | 3 $\frac{1}{2}$, 7 | Wife's mother |
| 12* | 2 | | 7, 3 | |
| 13 | 2 | 10 | 6 | |
| 14 | 2 | | 20, 18 | |
| 15 | 2 | | 6 | |
| 16 | 2 | 5 | | |
| 17 | 2 | | 22 | |
| 18 | 2 | 22, 23 | 17 | |
| 19 | 4 | 4 | | 2 roomers |
| 20 | 2 | 23 | 22 | |
| 21 | 2 | 8 | | |
| 22 | 2 | 3 | | |
| 23 | 2 | 8 | 11 | |
| 24* | 2 | 1 | 3 | |
| 25 | 2 | | 5 | |
| 26* | 2 | 1 $\frac{1}{2}$ | 7 | |
| 27 | 3 | 8 (1 $\frac{1}{2}$ yr. boarder) | 6 | 2 boarders |
| 28 | 2 | 13 | 6 | |
| 29 | 2 | 10, 14 | | |
| 30 | 3 | 1 | 5 | 1 maid |
| 31 | 2 | 1 $\frac{1}{2}$ years | | |
| 32 | 2 | | 1 | |
| 33* | 3 | 17, 14 | 10 | 1 roomer |

* Indicates families with children in more than one age grouping when classified as pre-school (through 5 years); grammar school (6 through 14 years); and high school and college (15 years and up).

Pre-school group (through 5 years) has members in 18 homes, or 55%.
Grammar school group (6 through 14 years) has members in 17 homes, or 52%.

High school and college group (14 years and up) has members in six homes, or 18%.

Combination of two age groups is found in 9 homes, or 27%.

APPENDIX E

DISTRIBUTION OF FIREPLACES AND THEIR LOCATION
IN THE HOUSES SURVEYED

| Case No. | No. of Fire-Places | Location of Fireplaces | | | | | Owner's Comment on Living Room Fireplace |
|--------------|--------------------|------------------------|-------------|-----------------|----------|-------|--|
| | | Living Room | Dining Room | Recreation Room | Bed-room | Study | |
| 1 | 2 | x | | x | | | Much used |
| 2 | 1 | x | | | | | Much used |
| 3 | 2 | x | | x | | | Moderately used |
| 4 | 1 | x | | | | | Moderately used |
| 5 | 1 | x | | | | | Much used about 5 nights a week; left in back hall |
| 6 | 2 | x | | x | | | Little used; overheats room |
| 7 | 1 | x | | | | | Much used |
| 8 | 2 | x | | x | | | Little used; overheats room; thermostat moved |
| 9 | 1 | x | | | | | Little used; wished for woodlift |
| 10 | 2 | x | | x | | | Little used; overheats room |
| 11 | 1 | x | | | | | Little used; overheats room |
| 12 | 2 | x | | x | | | Little used |
| 13 | 2 | x | | x | | | Little used |
| 14 | 1 | | | x | | | No fireplace here; dislikes dirt |
| 15 | 1 | x | | | | | Much used |
| 16 | 1 | x | | | | | Much used |
| 17 | 2 | x | | x | | | Little used; family gone all day |
| 18 | 4 | x | | x | x | x | Little used; would omit one in bedroom |
| 19 | 3 | x | | x | x | | Much used |
| 20 | 2 | x | | | | x | Much used |
| 21 | 4 | x | x | | x | x | Much used |
| 22 | 2 | x | | x | | | Much used; wished for woodlift |
| 23 | 1 | x | | | | | Much used; every evening |
| 24 | 1 | x | | | | | Moderately used; about once a week |
| 25 | 1 | x | | | | | Moderately used; on Sunday evenings |
| 26 | 2 | x | | x | | | Moderately used; must turn off furnace |
| 27 | 1 | x | | | | | Little used; says it is luxury, "living room waste basket" |
| 28 | 2 | x | | x | | | Much used |
| 29 | 2 | x | | x | | | Much used in evenings to supplent furnace |
| 30 | 1 | x | | | | | Little used; not needed with furnace |
| 31 | 1 | x | | | | | Much used |
| 32 | 2 | x | | | | x | Much used |
| 33 | 2 | x | | | | | Much used; wished for woodlift |
| 56 | | 32 | 1 | 16 | 3 | 4 | Total number of times feature occurs |
| Not relevant | | 96.96 | 3.03 | 48.48 | 9.09 | 12.12 | Percentage of Homes in which feature occurs |

APPENDIX F

DISTRIBUTION AND NUMBER OF ROOMS
IN HOMES SURVEYED

| Case No. | First Floor Area | Second Floor Area | Other Areas |
|----------|---------------------------------|----------------------|----------------------------|
| 1 | LR-DR-K-S-1BR-B-H | 4BR-1 Bath-H | |
| 2 | LR-DR-S-H-K-3BR-B-Lav | None | Util.R. and Screened Porch |
| 3 | LR-DR-Nook-K-H-Lav | 3BR-1B-1Sh.B | Terrace |
| 4 | LR-DR-S-K-H-1BR-B | 2 BR | |
| 5 | LR-DR-K-H-1BR-B | 2 BR | |
| 6 | LR-DR-K-1BR-B-H | 2 BR | |
| 7 | LR-DR-K-1BR-B-H | 2 BR | Porch, terrace |
| 8 | LR-DR-S-Lav-K-H | 4BR-1B-1Sh.B. | |
| 9 | LR-DR-K-Nook-H-1BR-B | 2BR-Lav | |
| 10 | LR-DR-S-K-Nook-H-Lav | 2BR-1B | |
| 11 | LR-DR-K-Nook-H-2BR-B | 1BR (room for B-1BR) | Terrace |
| 12 | LR-DR-K-Nook-H-2BR-B | 1BR (room for 1BR) | Terrace |
| 13 | LR-DR-K-Nook-S-H-B-1BR | 2BR-B | |
| 14 | LR-DR-Nook-K-H-Lav | 3BR-B-Sewing Room | |
| 15 | LR-DR-K-Lav-H | 4BR-1B | Terrace |
| 16 | LR-DR-K-S-H | 3BR-1B-H | Terrace |
| 17 | LR-DR-S-K-H-Lav | 2BR-B (room for 1BR) | Porch |
| 18 | LR-DR-S-K-H-Lav | 4BR-B | |
| 19 | LR-DR-K-H-1BR-B | 3BR-B-H | |
| 20 | LR-DR-S-K-H-Lav.Util.R. | 3BR-1Dr.R-2B | Attic play room |
| 21 | LR-DR-K-H-Lav-1BR-Util.R. | 4BR-2B | |
| 22 | LR-DR-K-H-1BR-B | B-2BR | Terrace |
| 23 | LR-DR-Nook-K-H-2BR-B Laundry | 2BR-1B space | |
| 24 | LR-DR-K | 2BR-1BR | |
| 25 | LR-DR-K-H-1BR-Lav-Sh. | 2BR-B | Terrace;laundry in garage |
| 26 | LR-DR-K-H-2BR-B | Room for 3BR-1B | |
| 27 | LR-DR-K-H-1BR-Lav-Sh. | 2BR-1B | |
| 28 | LR-DR-K-H-1BR-ShB | 2BR-B | Terrace |
| 29 | LR-DR-K-Nook-1BR-B | 2BR (lav not done) | |
| 30 | LR-DR-K-H-1BR-ShB | 2BR-B | |
| 31 | LR-DR-K-2BR-1B-Util.R. | None | Terrace |
| 32 | LR-DR-Nook-K-S-2BR-B | BR-ShB | Terrace |
| 33 | LR-DR-S-Lav-H-K* | 4BR-2B | Terrace |

*Laundry space is in one end of this kitchen.

| | | |
|------|------------------|--------------------------------|
| KEY: | LR - Living Room | BR - Bedroom |
| | DR - Dining Room | B - Bath |
| | K - Kitchen | ShB - Shower bath and Lavatory |
| | S - Study or Den | Lav - Lavatory |
| | H - Hall | Util.R. - Utility Room |

APPENDIX G

COOPERATORS' EVALUATIONS OF RELATION
BETWEEN SIZE AND NUMBER OF ROOMS
AND SATISFACTION DERIVED FROM HOME

(Numbers Refer to Specific Cases)

Comments Relating to Size of Rooms

Likes

1. Large living room liked for family life and for entertaining (Nos. 6, 15, 19, 21, 23, 25, 30, 31)
2. Large dining room aids in entertaining (Nos. 15, 21)
3. Size of rooms is spacious; there is no crowding (Nos. 10, 13, 16, 29, 33)
4. Low ceilings (7'4") throughout house except in living room helps in heating (No. 5)
5. High ceiling in living room improves ventilation (No. 6)

Desires and Dislikes

1. Would like larger dining room (Nos. 25, 32)
2. Living room crowded; hall has waste space (No. 12)
3. Study too small (No. 13)
4. Living room has no place for grand piano (No. 23)
5. Would like larger entry hall (No. 23)
6. Living room too narrow (12'6") (No. 9)

Satisfaction as to Number and Kind of Rooms
Provided in House

1. Study gives privacy (Nos. 20, 8)
2. Upper hall space used for sewing; has good light (No. 18)
3. Likes guest room and double space in master's bedroom; facilitates cleaning (No. 15)

1. Room outside house desired for son (No. 5)
2. Wanted study; could not afford it (No. 15)

APPENDIX H

COOPERATORS' EVALUATION OF STORAGE SPACE
OTHER THAN IN THE KITCHEN

(Numbers Refer to Specific Cases)

Amount of Storage

| <u>Likes</u> | <u>Desires and Dislikes</u> |
|--|--|
| 1. Eaves space used for storage (Nos. 1,20) | 1. More cupboards needed (Nos. 31,31) |
| 2. Large bedroom closets liked (No. 2) | 2. More general storage space needed, particularly in basement (now has partial basement) (No. 33) |
| 3. Extra closet in hall for general storage (No. 18) | |
| 4. Plenty of large closets in all parts (No. 1) | |

Storage for Special Purposes

| | |
|---|--|
| 1. Large hall closet in front hall (Nos. 4,23, 25) | 1. Closet in master bedroom too short for formals to hang (No. 1) |
| 2. Front hall has both guest and family coat closet (No. 15,33) | 2. Closet in one bedroom has a step up or a long reach; inconvenient (No. 1) |
| 3. Double closets in bedrooms (No. 8) | 3. Cool storage for foods other than refrigerator is inadequate (No. 2) |
| 4. Cupboard in living room for games and card tables near place they are used (No. 8) | 4. No fruit room (No. 17) |
| 5. Built-in desk, counter, and storage shelves in study (No. 5) | 5. Another coat closet needed on first floor (No. 10) |
| 6. Large, accessible closets in bedrooms (No. 18) | 6. Built-in what-not in dining room (No. 15) |
| 7. Fruit storage closet on the first floor (No. 20) | 7. Need larger broom closet (Nos. 16,28) |
| 8. Decorative shelves at end of living room (No. 23) | 8. No broom or cleaning supply closet (No. 24) |
| 9. Bedroom closets with center door give accessible storage (No. 24) | 9. Storage for linens needed in dining room (Nos. 17,31) |

10. Large bedding closet
(No. 33)

10. Need larger linen
closet (No. 18)

11. Double garage with
half used to store
outdoor things--
wagon, buggy, etc.
(No. 19)

12. Closets poorly ar-
ranged; part in-
accessible (No. 20)

13. Want built-in dressing
table in bath
(No. 28)

14. Want linen cupboard in
bath (No. 28)

Facilities Affecting Storage

1. No door on coat closet
in entry (No. 17)

APPENDIX I

COOPERATORS' EVALUATION OF FACILITIES
AFFECTING MAINTENANCE AND EASE OF CLEANING

(Numbers Refer to Specific Cases)

Ease of Cleaning Wall Surfaces and Woodwork
(includes glass panes)

Likes

1. Wood paneling easily cleaned (Nos. 5,19,21)
2. Dark woodwork throughout (No. 4)

Desires and Dislikes

1. No more rough plaster in kitchen or bath; too hard to clean (No. 25)
2. Too many windows; hard to clean (No. 30)
3. Too much light woodwork (No. 30)
4. Would have darker woodwork in halls and upstairs (No. 33)

Ease of Cleaning Floor Surfaces and Coverings

1. Linoleum floor coverings (Nos. 24,25,33)
2. Linoleum instead of tile; quiet, inexpensive, and less breakage (No. 21)
3. Dust trap in hall convenient (No. 5)

1. Floor in study should have been hardwood as now shows mars (No.1)
2. Husband would put in softwood floors and carpets for quiet and economy (No. 17)

APPENDIX J

COOPERATORS' EVALUATION OF FEATURES
AFFECTING HEALTH, COMFORT, AND SAFETY IN THE HOME

(Numbers Refer to Specific Cases)

Stairways and Changes of Floor Level

Likes

1. Door at bottom of stairway (No. 4)
2. Wide stairs with hand-rail (No. 27)

Desires and Dislikes

1. Change in room levels bad for young child (No. 4)
2. Steps from living room to entry cause falls (Nos. 9,28)
3. Steps in dressing room of master bedroom too dark (No. 20)
4. Rail should protect two steps down living room near front door (No. 21)
5. Spindles in railing of stair wall so far apart baby could fall through (No. 3)

Light and Ventilation

1. Many windows give light and air (Nos. 12,20)
2. Large view window in living room (Nos. 26, 27)
3. Bay window in dining room ornamental (No. 20)

1. Hall needs window over door; dark (No. 8)

Other Features

1. Raised stone hearth hazard for young child (No. 4)
2. Want more soundproofing, especially of plumbing (No. 17)
3. Need more convenience outlets (No. 17)
4. A room door opens across front of fireplace (No. 32)

APPENDIX K

COOPERATORS' EVALUATION OF SATISFACTION
DERIVED FROM AVAILABLE RESOURCES
FOR PLAY AND RECREATION

(Numbers Refer to Specific Cases)

For Infants and Pre-school Age Group

| <u>Likes</u> | <u>Dislikes or Desires</u> |
|--|--|
| 1. Basement play space good (No. 1) | 1. Need play space on first floor; at pres- ent children's bed- room overtaxed (No. 11) |
| 2. Play space and toy stor- age liked in kitchen (No. 1) | 2. Would like Dutch type half-door for baby's room; would help supervise his play (No. 26) |
| 3. Outdoor play house (No. 4) | 3. More play room needed (No. 30) |
| 4. Extra wide cement area in front of garage for play (No. 11) | |

For Children of Grammar School Age (6 through 14 Years)

1. Groups meet in recreation
room (Nos. 1,8)

For Children of High School and College Age

1. Basement recreation room
much used (No. 6)

For Adults

1. Terrace much used as out-
door living room
(Nos. 12,15,22,31)
2. Study good for times when
there is "too much
family" (No. 8)
3. Porch for outdoor dining
(No. 7)

APPENDIX L

COOPERATORS' EVALUATION OF BATHROOM,
LAVATORY, AND SHOWER FACILITIES

(Numbers Refer to Specific Cases)

Size and Planning of Bathroom

| <u>Likes</u> | <u>Desires or Dislikes</u> |
|---|---|
| 1. Storage cupboard over toilet good use of space (No. 5) | 1. Upstairs bath small and cut up (No. 1) |
| 2. Large bathroom liked; never steamy or cluttered (No. 15) | 2. Lavatory in master bedroom changed to shower bath (No. 8) * |
| 3. Small and compact bathroom liked (No. 33) | 3. Prefers shower stall as less messy than shower in tub (No. 22) |
| | 4. Prefers tub bath to shower on first floor; easier to bathe children (No. 28) |

Number and Location of Bathrooms

| | |
|--|---|
| 1. Like the convenience of a lavatory on the first floor (Nos. 15, 21, 4, 8) | 1. Another bath needed on second floor between boys' rooms (No. 18) |
| | 2. Wants bath on each floor having a bedroom (No. 9) |
| | 3. Wants lavatory on first floor (No. 24) |

*Change has already been made.

APPENDIX M

COOPERATORS' EVALUATION OF AREAS FOR SLEEPING

(Numbers Refer to Specific Cases)

Amount of Space Provided

Likes

1. Study makes emergency bedroom (Nos. 15,32,10)
2. Likes spare bedroom (No. 15)

Desires and Dislikes

1. Feel need of room for a maid (No. 13)

Ventilation

1. Cross ventilation in all bedrooms (No. 15)

1. Cross ventilation needed in bedroom (Nos. 24,27)

Location of Rooms

1. Bedroom on first floor convenient (No. 11)

1. Guest room over kitchen; too noisy (No. 8)
2. Wants at least two bedrooms on first floor (No. 7)
3. Wants either bedroom or study on first floor (No. 24)

Size of Rooms

1. Likes large bedrooms (Nos. 17,32)

1. Need larger bedroom (Nos. 7,31)
2. One bedroom rather small (No. 14)

APPENDIX N

COOPERATORS' EVALUATION OF HOMES
WITH REFERENCE TO RELATION OF AREAS
TO EACH OTHER

(Numbers Refer to Specific Cases)

Halls and Passages

Likes

1. No traffic is routed through the living room; gives privacy and saves dirt (Nos. 1,11, 16,21,29,32)
2. Covered passage to garage (Nos. 18,22,24,30,31)
3. Back hall gives private passage between living room and bedroom (Nos. 9,13)
4. Living room and dining room separated by hall (No. 10)
5. Enclosed porch permits passage from kitchen to bedroom area not through living room (No. 2)
6. Back hall with phone (No. 21)
7. Likes entrance hall privacy (No. 26)
8. No opening living room to dining room gives privacy (No. 30)

Desires and Dislikes

1. Dining room is runway; traffic heavy to all parts of house (Nos. 23,12)
2. Would like central hall to keep traffic out of living room area (Nos. 22,21)
3. Covered way to garage (No. 17)
4. Would like entrance hall (No. 24)
5. Does not like back entrance hall (No. 28)
6. Living room gets all traffic between other areas (No. 31)

Stairways

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Possible to get upstairs by back stairway (No. 20) 2. House all on one level; "no ups and downs" (No. 20) 3. Both inside and outside stairs to basement (No. 33) | <ol style="list-style-type: none"> 1. Would prefer house all on one floor (Nos. 17,28) 2. Would put kitchen, dining room, and guest bedroom and bath in basement level (No. 21) 3. Wants back stairs not seen from living room (No. 28) |
|---|--|

Doors and OpeningsLikes

1. Door from garage opens into house (No. 8)
2. Doors lead from living room to large back yard (No. 17)
3. Outside entrance to basement (Nos. 22,27)

Desires and Dislikes

1. Kitchen door misplaced; blocks oven (No. 12)
2. Desire access from kitchen to garden (No. 13)
3. Storm door needed to stop leaks around door between living room to terrace (No. 15)
4. Two doors in hall conflict (No. 16)
5. Doors to terrace not needed and hard to curtain (No. 16)
6. Door from kitchen to dining room covers some shelves (No. 20)
7. Outside entrance to basement needed (No. 25)
8. Wishes to widen arch from dining room to living room (No. 27)

APPENDIX O

COOPERATORS' EVALUATION OF THE KITCHEN AREA

(Numbers Refer to Specific Cases)

Amount and Arrangement of Cupboards and Equipment

| <u>Likes</u> | <u>Desires and Dislikes</u> |
|--|--|
| 1. Kitchen compact and easy to work in (Nos. 6,10, 14,16,30) | 1. More cupboards needed in kitchen (Nos. 9, 17) |
| 2. Good cupboards in kitchen (Nos. 6,27,15,28) | 2. Prefers not to stoop and lift from grocery delivery bin (No. 5) |
| 3. Grocery delivery closet (Nos. 15,31) | 3. Dislikes cupboard over stove; hard to keep clean (No. 18) |
| 4. Coat closet in kitchen (No. 18) | 4. Storage cupboard doors too high; inaccessible (No. 23) |
| 5. Cooler and sliding ventilator vegetable drawers (No. 18) | 5. Wants a cooler (No. 32) |

Finish of Walls, Floors and Work Surfaces

| | |
|--|--|
| 1. Paneled in maple and easy to clean (No. 28) | 1. Not enough slope to drains; water blistered linoleum cover (No. 6) |
| | 2. Composition finish of walls here and in bath cannot be changed; monotonous (No. 14) |

Light and Ventilation

| | |
|---|--|
| 1. Sink in front of window for view (Nos. 8,32) | 1. Window over sink too low (6"); splashed (No. 6) |
| 2. Big view window in kitchen (No. 25) | 2. Fan does not seem helpful (No. 25) |
| | 3. Need more light in kitchen (No. 26) |
| | 4. Need more ventilation, i.e., fan (No. 31) |

Size and Orientation of Kitchen and Connecting AreasLikes

1. Large kitchen with plenty of work space (Nos. 1, 32)
2. Laundry room off kitchen good (Nos. 21, 33)

Desires and Dislikes

1. Wishes back door did not lead directly into kitchen (No. 5)
2. Longer kitchen needed (No. 17)