

# Planning the Willamette Valley Farmhouse for Family Needs



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A CONSIDERATION of the housing needs of the family is fundamental to economy in housebuilding. Even the cheapest house will be a better investment and a more satisfactory dwelling if every decision involved in its planning is made from the standpoint of the work of the household or the manner of living desired by the family. A house so planned does not soon become obsolete, because family needs and ways of living change slowly.

This bulletin is designed to show WHAT the modern house should be, in order to serve completely and efficiently the needs and interests of the farm household. It is intended to aid the prospective homebuilder in the planning which precedes any consideration of cost. Properly used, it should aid not only the family with capital enough to build exactly what it wants, but also the family with a limited sum at its disposal.

For the sake of precision in the recommendations included in this bulletin it was thought best to consider the needs of the families in a specific location, since climatic conditions influence family and personal needs to a pronounced degree. One desirous of planning a house in another part of the state, however, should have little difficulty in modifying the suggestions to suit his particular locality. The Willamette Valley was chosen as the subject of discussion because the section west of the Cascades constitutes a well-defined climatological region with correspondingly well-defined features in the houses planned to suit it.

## A DESIRABLE FARMHOUSE FOR THE WILLAMETTE VALLEY

The needs of the farm family in this location are well served by a house having the following features:

A first floor consisting of kitchen, bedroom, and toilet facilities, and at least two other rooms serving the purposes of a second bedroom, main living room, supplementary living room, space for serving "company meals," sewing, farm office, and children's play room.

A second floor providing three bedrooms and toilet facilities, all reached directly from a center hall.

An "auxiliary area" for washing, for large-scale food preparation and preservation, and for the storage of products preserved at home.

A first-floor hall so located as to carry as much traffic as possible.

Closed stairways between floors.

A front entrance located near the corner of the house facing the highway and the farm drive.

A back entrance near the corner facing the farm drive and farm buildings.

Entrances adequately protected against rain.

Provision for unloading passenger cars under cover.

Driveway permitting bulky or heavy articles to be brought by truck to the entrance nearest the "auxiliary area."

A lawn of the minimum size required as a setting for the house.

Closets for the storage of clothes, bedding, cleaning equipment, and unused furnishings.

# Planning the Willamette Valley Farmhouse for Family Needs

By

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## SCOPE AND PURPOSE OF THIS BULLETIN

**T**HIS bulletin is intended to aid designers by listing the functions of the house, describing the conditions under which the activities of the Willamette Valley farm home are pursued, and pointing out specific arrangements desirable for the conditions. The suggestions are intended to aid home builders in insuring completeness and suitability in arrangements for their households, and in arriving at the most desirable solutions for some of their planning problems.

It is common practice for families looking forward to remodeling or building to examine house plans shown in books, magazines, newspapers, and advertising material in order to get ideas for handling their problems before going to an architect. The proper procedure in such an examination is to evaluate the plans with respect to the present needs and the probable future needs of the family, and also with respect to the more important needs of the majority of families of the type likely to occupy the house when it passes out of the hands of the original owner. If one is planning a new house it is well to prepare a check list of the various functions that the dwelling should serve, and to make a decision for each one as to the most practical location and combination with other functions. It is necessary when examining house plans to consider not only the kind and location of rooms and other parts of the house, but also the space allotted to each function, to be sure that it is of the right size and shape. The suggestions in this bulletin may be used in preparing a check list of functions, and the drawings may be used as guides in determining dimensions and in deciding upon the arrangement of areas with respect to one another.

The selection of suggestions to be included in this publication has been made with reference to the house-planning problems of a specific group, that of the farm families living in the Willamette Valley. However, the suggestions have not been restricted to the peculiar needs of this group. Many of them will be found to apply to house-planning problems of dwellers in other sections and of those following occupations other than farming.

The Willamette Valley has been considered as a unit because of similarity in climatic conditions and farm organization. Farmers in this section usually live in houses situated on the land they till, and farms are generally small enough to be operated by one or two men with assistance from others at certain periods. The farms are capable of producing the meat, poultry, and dairy products as well as the fruits and vegetables sufficient for a well-balanced and varied diet, and the typical farm home of the section is largely self-sustaining in this respect at the present time.

The farm family must usually make the best of its housing situation, for rarely is it possible to move to another farm for the sake of a more suitable dwelling. In planning the farmhouse, therefore, it is necessary to keep in mind that it must serve the needs of the family over a long period of time, and that it will probably shelter families of varying sizes during its period of use.

## INFORMATION CONCERNING HOUSING NEEDS OF WILLAMETTE VALLEY FARM FAMILIES

A study was made to secure information regarding housing needs, habits, and preferences of Willamette Valley farm families, as a basis for decision as to suggestions to be included in this bulletin. Representative farm homemakers living in various parts of the Valley cooperated in the study by discussing their housing problems with the investigator in a series of interviews. The households chosen for the study were selected to include families of various sizes and with children of different ages, as a basis for a study of the changes that may take place in the uses made of a house from the time it is built until it ceases to serve the purpose of a dwelling.

Most of the cooperators were chosen from among those living on farms where several enterprises are conducted. In all cases at least enough eggs, poultry, and milk are produced for home use, as well as most of the fruits, vegetables, and meat consumed. In all but one instance the chief sources of family income are the farm enterprises.

Modern conveniences now used or considered desirable by cooperators include electricity to supply light, power for household machinery, and heat for ironing and part of the cooking; telephone; a warm-air furnace serving at least the living room, dressing areas, and bathrooms; and hot and cold water and drains in kitchen, bathroom, and laundry.

Most of the work of the household is performed by the homemaker.\* The usual custom is to employ help in the household only when illness or the necessity for feeding several farm employees increases the responsibility of the homemaker beyond her capacity, or when she undertakes so much outside work that she does not have time for routine housework. The men and older boys usually prepare meats for curing, attend to major repairs about the house, split wood and put it into storage, and assist with tasks requiring lifting and carrying of heavy objects.

Precision in house planning requires information as to the kind and amount of work done in the household and the methods of scheduling household tasks. Most cooperators habitually do all baking of cakes and pastries and of at least part of the bread used, and they put up a great variety of canned products. Many make kraut, pickles, and lard. Housekeepers vary in their methods of incorporating canning into the schedule. Some can small amounts at a time. Half of the homemakers reporting on this point often can at the rate of 30 or more quarts per day. Many cooperators expressed a desire for an arrangement whereby the preservation of foods could be done in some room other than the kitchen because the handling of large amounts of fruits, vegetables, or meats requires larger

\* See Station Bulletin 256, *Use of Time by Oregon Farm Homemakers*.

work spaces than those needed for the preparation of meals, or requires special arrangements of one sort or another; and because the work is often such as to be unsuited to a room in which meals are served.

All of the family washing is commonly done at home. The prevailing custom is to launder the entire accumulation of soiled clothing and linen each Monday or Tuesday morning and to launder only needed garments, such as baby clothes, at other times. The homemaker does most of the washing, with the help of children in vacation time and of the farm operator when farm work is not pressing. Washing is usually completed in three hours.

Most of the homemakers try to plan their work so as to iron in the forenoon of the day after the washing is done. The chief obstacles to this plan are work with chickens and garden, and during the rainy season, the difficulty of getting clothes dry. In many households ironing is done in the afternoon or evening during part of the year. It is usually done by the homemaker and on the average requires two hours per week. This point is of significance in deciding on the place in the house where the ironing is to be done.

Many cooperators do some washing in gasoline or solvent, including for the most part the cleaning of silk and wool dresses.

As may be expected, there is considerable variation in the amount of sewing done at home, a point of significance in deciding whether or not a separate sewing room should be planned. Many cooperators habitually do little or no sewing during the months that constitute the busy season on the farm. Some concentrate sewing into definite periods of from one to three weeks each, while others sew a little at a time, as other duties permit. Many habitually sew or mend in the evening. Mending is done on the sewing machine whenever possible. Mending requires considerable time and is often allowed to accumulate during the busy season.

In most households such work as painting, varnishing, waxing, papering, and repairing and adjusting household equipment and machinery, is done without outside assistance. Hence space is required for the storage of supplies and equipment and for a workbench. Many places have a farm shop, where the repair and adjustment of tools and equipment are done for the farm and the household. Since these shops are usually unheated and therefore damp in the winter, it is often considered desirable to allow space in the basement for part of this work.

On the farms included in the study, eggs are usually packed by the homemaker.\* Dressing of poultry for market is occasionally done by the homemaker, especially at Thanksgiving and Christmas. Work with other food products which may be prepared for market by the homemaker, such as fruits and vegetables, comes at a time of year when it is warm enough to work outside the house. Milk utensils are commonly cared for by the homemaker, except on large dairy farms selling whole milk.

A characteristic feature of the farmhouse plan is the provision of storage space for the winter's supply of food and fuel. Foods stored in or near the house commonly include home-canned fruits, vegetables, meats, and fish; pickles, relishes, kraut, lard, and other foods not sealed; cured

\* No farm for which the sale of eggs was the chief source of money income was included in the study.

meats, nuts, prunes, beans, and long-keeping fresh vegetables and fruits. Root vegetables, cabbage, and sometimes potatoes are left in the ground. Where long-keeping fruits and vegetables are purchased, they are usually procured direct from a neighboring farm, in a quantity sufficient for the season's supply. One hundred feet of shelving 12 inches wide is sufficient for the storage of foods put up in glass jars or bottles in the households of most cooperators.

Staples are seldom purchased in lots sufficiently great to require storage space outside the kitchen.\* Most cooperators purchase white flour in forty-nine-pound sacks and whole wheat flour and corn meal in ten-pound sacks. Sugar is commonly purchased in one-hundred-pound sacks.

The convenient house is one which provides not only for the work of the household but also for the mode of living desired by the family. Most cooperators prefer to serve every-day meals in the kitchen or in an alcove off the kitchen, but desire that a place be provided for serving company meals outside the kitchen. Most of them want a porch on which to eat in warm weather.

Bedrooms required to meet the standards of the majority of cooperators include a parent's room, one bedroom for each two children of the same sex and near the same age, and separate rooms for guests and for employees. On this basis, the number of bedrooms most commonly needed would be four (three for the family and one for guests or farm help). None of the households of cooperators would require fewer than three bedrooms. Many cooperators express a preference for sleeping in cool rooms, a point of significance in planning heating arrangements and dressing rooms. Children of school age and young people like to sleep on open porches during the warm weather.

Commercial facilities for the care of the person are not extensively used by farm families. In the majority of households, shaving, cutting children's hair, washing hair, and polishing shoes are usually done at home.

In winter, men prefer to be able to remove wet outer clothing and to wash, and in warm weather to take showers and change clothing, before coming into the living area of the house.

Reading, listening to radio programs, and informal social life are the major home leisure activities of the farm family for which provision should be made in planning the house or its furnishings.† The customary procedure is for homemakers to relieve the tedium of the routine tasks of sewing, mending, and ironing by listening to daytime programs, a fact to be considered in planning the location of the radio, the ironing board, and the sewing machine.

The more common forms of home social life are family reunion dinners, usually on Sundays, which are attended by entire families; women's clubs, meeting in the daytime, which are attended by women accompanied by children too young to go to school; and evening parties and neighborhood gatherings attended by men and women. Little formal calling is done, a fact of significance in planning the uses of the living room. House

\* Cooperators were chosen from among those whose homes can be reached by hard-surfaced roads.

† See Station Bulletin 256, *Use of Time by Oregon Farm Homemakers*.



guests usually consist of visiting relatives or friends, often entire families. Most of the coopeators consider that a spare bedroom is essential, although this may sometimes be used for other purposes also. As visiting relatives are often elderly persons, a downstairs location for the spare room is appreciated.

Hunting and fishing are common leisure activities of men, and the storage and care of sports equipment are a function of the farm dwelling.

The planning of the home grounds in relation to use as a leisure area for adults is of relatively minor significance. At the time of the year when the weather permits resting, loafing, or playing games outdoors little time is found for such activities. School and community playgrounds and athletic fields usually provide for baseball, football, and other games requiring considerable ground and equipment; hence the plan of the yard does not usually need to provide for such sports. Most cooperators desire that the area immediately in front of the house be seeded to grass and kept clipped. In the majority of households the homemaker is responsible for the care of the lawn and flowers and does most of the work herself.

Pet animals, such as cats and dogs, are not usually kept in the house, but almost every homemaker wants to be able to keep a bird and a few house plants. The plants usually are raised from slips.

## GENERAL CONSIDERATIONS IN PLANNING THE HOUSE

**House planning in relation to climate.** Characteristics of the Willamette Valley climate that influence housing arrangements are these: cloudy and rainy weather during a large part of the year; occasional wind-driven rains, usually from the same direction for a given section; two or three months of little or no rain; occasional low temperatures for periods of short duration; and occasional high temperatures, accompanied by low humidity, for periods of short duration.

In order to make the best of the local situation with respect to climate it is well to have these definite objectives in planning: Make the most of the winter sunshine; plan for the fullest possible enjoyment of the agreeable summer climate; keep mud and dust out of the house; minimize the inconvenience and discomfort of rain and extreme temperatures; keep all equipment and supplies under cover; protect from dampness bedding and clothing in current use; protect woolens and furs from moths; and provide safeguards to prevent falls on slippery walks or steps.

DESIRABLE ARRANGEMENTS from the standpoint of climate are:

A drive or graveled play yard for children's play at times when the sun is shining but the ground is damp.

A play center in the back yard, with shade, for use in the summer time.

Hard-surfaced walks leading from all entrances to the edge of house-yard or to the drive.

A well-drained back yard.

A porch for use as a summer dining room and to the children's playroom in winter, equipped with windows easily opened or closed.

A terrace or uncovered porch protected from winter winds but reached by the sun's rays at midday, to encourage children, elderly people and sick people to get out of doors on sunny days in winter.

An open porch or uncovered deck on the second floor, as a place to air bedding and to place beds in warm weather.

A driveway that curves so as to come close to the main entrance of the house.

An automobile porch, to permit the unloading of cars under cover.

All entrances protected from rain. The nature of the protection will depend on whether the entrance is located on the side from which wind-driven rains usually come, but there should always be a dry space before the door large enough to permit one to stand while lowering an umbrella.\*

Entrances located where possible so as not to face the direction from which wind-driven rains come.

Protection of entrances extended where possible to include steps leading to them.

Hand rails for steps not protected from rain.

Cross-ventilation in living, sleeping, and work rooms.

Basement work rooms provided with large windows and areas deep enough to admit the sun's rays for as long a period of the day as possible.

Living room located so as to make south windows possible.

Windows of bedrooms so located that in order to provide adequately for ventilation they will not need to be opened on the side from which rains come.

Provision for storage of all equipment and supplies used in the house—either under the house roof or in a building connected with the house by a covered passageway which is closed on the windward side.

A place for drying wet outerclothing.

A place that can be reached without passing through kitchen or living rooms, where men after working in the fields may take showers and change clothing.

A place for drying clothes in rainy weather.

Floor coverings like linoleum, from which mud and dust are easily removed.

#### ARRANGEMENTS TO AVOID are:

Evergreen trees planted so near the house as to cast a shadow upon the window area during the winter season.

Shrubs planted so as to hinder the entrance of the sun's rays into the basement work rooms.

Living or work porches without side walls.

\*Judging from reports of weather observers for points in the Willamette Valley, there is too much variation in wind direction and velocity to make possible any recommendation for the placing of windows, entrances, or outdoor living areas with respect to points of the compass.

A living or work room so located that all light comes through a porch.

Steps between ground level and first floor. These should be avoided where possible by grading the back yard and by using gently sloping non-slippery walks.

Over-protection of windows. Outside protection of windows is seldom necessary in this Valley. If considered desirable in a particular situation, use awnings which can easily be raised or lowered or easily reinstalled or removed for the season.

Opaque window shades. Many windows require no shades at all. Venetian blinds are desirable for windows in some situations, translucent shades in others.

**Economy in operating costs.** It is imperative that it be made possible to heat the occupied part of the house, to cook, and to heat water, with the minimum amount of wood and electricity. Variations in farm income are so great that at certain times it may be necessary to operate the house on such a limited amount of cash that the amount paid out for electricity and fuel must be reduced to the minimum. In a time of financial stress the farmer often finds it necessary to get along with little or no help, and for that reason economy in the use of fuel is necessary even where the wood comes from timber grown on the farm. Even when time and money available for operation must be reduced to the minimum, it should be possible to maintain a degree of comfort and efficiency sufficient to permit the work and the life of the household to proceed without serious interference.

The need for economy in operating costs will influence the planning of the house in three ways. In the first place, it should be possible to maintain relatively high temperatures in specific areas, such as the bath and dressing rooms and the living room, while the rest of the house has little or no heat. In the second place, it should be possible to close off unused rooms entirely, which means that no room likely to be unused by any family occupying the house at any time in its history should serve as the sole passage to a room that is likely always to be used. Finally, it should be possible to discontinue the use of electricity entirely for cooking and for heating water.

Desirable arrangements from the standpoint of economy\* are:

Downstairs arranged so that when desired all other rooms can be closed off except an area consisting of kitchen, living room or dining room, bathroom, and a bedroom.

Tight-fitting doors between rooms and halls.

Closed stairways and tight-fitting doors between floors.

Outside entrances reached through halls or vestibules, unless intended for summer use only.

Kitchen planned to include a chimney and sufficient wall space for a wood range and a wood box.

A register in kitchen if wood range is not used.

An auxiliary heater in bathroom.

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\*See also discussion of house planning in relation to climate (pages 11-12).

**Safety provisions.** Provisions for physical safety are important in a household where the margin of time and money is narrow, because they decrease the time and attention which a busy mother is required to give to a young child and because they decrease the possibility of having to pay for medical service in case of accidents. Desirable arrangements are:

A well-defined play area in some place other than the kitchen.

A child-tight yard fence to serve until the child can be trusted out around farm animals and machinery.

Gates for flights of steps or open stairways.

Storage places out of reach of children, for matches, medicines, poisonous cleaning materials, guns, and knives.

A means of opening any door a child might lock from the inside.

A knob on the inside of the door of any closet large enough for a child to enter.

A lock for the gun closet if guns are kept loaded.

Dead wood kept trimmed out of trees which children climb.

Floors that are not slippery.

Hand holds above the bath tub.

Hand rails for all steps. These should be set at a height convenient for adults. For the safety of young children it may be desirable to install on some flights of steps temporary hand rails set below the permanent rails.

For use in case of fire, a porch, deck, or balcony opening from the second floor by means of a door or a low-silled window. This balcony should be at least large enough to hold as many persons as are likely to be sleeping upstairs at any one time.

Well-lighted cellar or basement steps; a platform at least 30 inches wide between the entrance and the first step; hand holds on both sides.

Medicines and toilet supplies kept in separate compartments.

**Care and development of children.** The welfare of the mother as well as that of the child must be considered in arrangements for the care and development of children. The chief objectives, then, are the provision of conditions that permit adequate child care and normal development at a minimum time and energy cost. The chief considerations demanding special attention in house planning are those required for early self-help, freedom in play, and independence in the storage of possessions.

Desirable arrangements are:

Four well-defined play areas for small children: (1) in the house, (2) out of the house but under cover, (3) in the sunshine but on a surfaced space, and (4) out on the ground.

Kitchen windows located so as to overlook the children's outdoor play center.

Floors that are warm and easily kept clean.

Downstairs bathroom adequately planned for the care of children.

Toilet facilities readily accessible from the back door and the kitchen.

A bed for each child.

A clothes closet for each child.

Low hooks, shelves, drawers, and racks for clothes.

Adequate and readily accessible storage for play supplies and equipment in current use.

Storage of unused or reserve toys in places not readily accessible to children.

Dining chairs suited to the child's needs as to height; foot rests provided where feet do not rest on floor.

Chairs, tables, desks, and other articles used exclusively by children suited to the heights of the users.

Stepping stools near lavatory, toilet, and high window sills.

Shelves for drinking glasses in kitchen and bathroom.

### KIND AND LOCATION OF AREAS IN THE WILLAMETTE VALLEY FARMHOUSE

In this section and in the one following, specific suggestions are offered for the planning of dwellings for the families whose housing needs are similar to those of the families cooperating in the study.\*

**Number of floors.** The two-story house may be considered standard for the whole-family farmhouse of the Willamette Valley because of the number of functions to be served. A one-story house providing adequately for each of these functions as to light, air, work, and storage space, is a house of the rambling type, which is expensive to build and to heat.

On a good many Willamette Valley farms two houses are found. In some cases father and son are in partnership, while in other cases the farmer has retired but continues to live on the home place. Ideally one of the houses will be adequately planned and equipped for the period when the housing needs of the family are at their maximum, while the other house provides for the beginning of the homemaking period when all of the children are small and for the end of the period when the children have established homes of their own. The entertainment of large groups and the feeding of crews of men may be done at the "big house." Fortunately, the housing needs of the couple with small children and those of the elderly couple are well served by the same type of plan—a one-story house with a stairway to the attic, and with all of the workrooms on the ground floor.

**Space units for the two-story house.** Following is a list of the space units suggested for the "whole-family" farmhouse.

#### SECOND FLOOR:

Two or more bedrooms, each with clothes closets, preferably one for each person occupying the room.

Bathroom.

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\*See page 8.

Hall, connecting bedrooms, bathroom, and stairway to the first floor.

Bedding closet opening into the hall.

Store room for unused furniture, trunks, and other bulky articles.

Storage for cleaning equipment used on the second floor.

One or more decks or open porches.

#### FIRST FLOOR:

Kitchen, used for work with foods and service of every-day meals, and in some cases for ironing.

Bedroom, with one or two closets.

At least two other rooms, serving purposes of second bedroom, living room, dining room, office, child's playroom, sewing room, and in some cases for ironing; closets to supply the storage space needed in connection with these functions.

Toilet facilities.

Vestibule for front entrance.

Central hall, connecting bedrooms, bath or toilet, stairways, outside entrance leading to drive or farm buildings, kitchen, and either the living room or the dining room.

Closet for cleaning equipment and supplies, opening preferably from the central hall.

Closet or open space for outer garments in frequent use.

#### FIRST FLOOR OR BASEMENT:

Area required for heating plant.

Storage of fuel for heating plant, stoves, fireplace.

Winter storage for screens, outdoor play and living equipment, and in some cases for yard and garden tools.

#### FIRST FLOOR, BASEMENT, OR ADJACENT BUILDING:

Auxiliary work areas and storage rooms for equipment, supplies, and products.

Men's wash room.

Storage space for work clothes.

#### GRADE LEVEL AND HOUSE SURROUNDINGS:

Storage for equipment used about yard and garden during the growing season.

Drying lines.

Children's play center.

**Provision for changing needs.** Flexibility in the possible uses of space units is essential because of changes in the needs and habits of the family as children come, grow up, and leave for homes of their own, and because of differences in the needs of the various families who are destined to occupy the house during its period of use.

Where money is available at the time the house is built, it is advisable to anticipate changes in needs, in the number and location of bedrooms,

the kind and amount of work space provided, and in the living areas and children's play areas included in the plan. Changes in needs with reference to sleeping and living areas may be anticipated in the provision of a bedroom on the first floor and of a room near it of such size and location as to be suitable for either a bedroom, a living room, or a workroom; by three bedrooms on the second floor, and by the provision of toilet facilities on both floors. The downstairs bedroom may be used as the parents' room and the other room as a bedroom for a small child or as a spare room, thus making it possible to postpone the finishing of the second floor, or to close it off entirely until more bedrooms are needed. Or the second floor rooms may be used as family bedrooms and the downstairs bedroom reserved for guests or for hired help. In a household requiring an arrangement of this type the other room downstairs would probably be needed as an office, sewing room, children's playroom, a bedroom, a study, or a second living room. The downstairs location is particularly desirable for a guest bedroom where the guests are likely to be the parents or other elderly relatives of the farmer or his wife, who stay for long periods, or where family bedrooms are located on the second floor.

Changes in the amount of cooking and food preservation may be anticipated by providing an auxiliary work area, located near the kitchen or in the basement, which is large enough for large-scale operations.

Changes in the amount of sewing may be anticipated by providing a large closet off living room or dining room to be used when the amount of sewing is small or when the homemaker has no help with sewing. When the time comes that this space is not satisfactory one of the bedrooms may be converted into a sewing room.

More than one living room is likely to be needed at some time in the history of the house. This may be anticipated in the provision of the multi-purpose room suggested above or a dining room of such size and location as to be suited for use as a living room.

For housing guests or farm help, a feasible method sometimes used is that of providing quarters in separate buildings. Guesthouse and bunkhouse can be made comfortable and attractive at a cost no greater than that of providing extra bedrooms in the house itself. Where there are two or more boys in the family, the idea of a bunkhouse often appeals to them and provides extra house room at low cost.

### **SUGGESTIONS FOR PLANNING SELECTED SPACE-UNITS**

In the following section suggestions are offered for handling some of the planning problems encountered in building or remodeling a farmhouse. The work of formulating aids of this sort is still under way, and it is expected that supplementary material will be published from time to time.

Drawings have been included to illustrate some of suggestions made. Dimensions used as a basis for determining the sizes of rooms and parts of rooms are given in the last section of the bulletin. Further information concerning the illustrated suggestions or others listed under "desirable arrangements" may be obtained by writing to the Division of Home Economics of the Experiment Station.

**The Kitchen.** (See Plates I, II, III, and IV-A.) More attention is usually given to the planning of the kitchen than to that of any other part of the house, and more money is spent making it convenient. Kitchen arrangements are not usually very flexible, however, and much dissatisfaction can come from a kitchen which, while meeting the major requirements for convenience in arrangements for cooking and washing dishes, makes no provision at all for a host of minor functions requiring similar conditions. It is well, therefore, to guard against its misuse by deciding at the outset which of its many historic functions are to be left in the kitchen and what is to be done with the rest.

PLATE I (page 19) shows two kitchen plans embodying some of the results of a study in which currently used standards\* for the selection and arrangement of the kitchen and its units were correlated with the information obtained from cooperators as to the work done in their kitchens, their storage needs, and their habits and preferences.† The plans represent two common architectural situations, those of a kitchen that is long and narrow, and one that is nearly square. The drawings are worthy of careful study. Every detail represents a decision as to the best way of handling a specific problem in storing articles or in providing for the activities incident to kitchen work.

The kitchens were planned "from the inside out." Each center was planned as a unit, then the various centers were arranged for convenience in routing kitchen work. Storage space was planned to provide for the supplies and equipment used in the average Willamette Valley farm household, judging from information received from cooperators. In determining every dimension space economy has been the objective.

The dotted lines indicate the floor areas occupied by persons engaged in activities or by movable parts of structural units. These areas have not been labeled because it is assumed that persons reading this bulletin are familiar with kitchen processes and will have no difficulty in imagining themselves engaged in kitchen activities.

Plan 1 is especially good for an ell location because cross-ventilation might be provided by windows over the work table or the sink or in both of these locations, as well as by windows at either side of the stove. The plan assumes that there is a direct connection between the hall and the living room or dining room.

In both plans, the sink and serving centers have been combined. A pass cupboard is provided in Plan 1 which makes it unnecessary to open the door between the kitchen and dining room when a meal is being served in the latter location. A pass cupboard is not shown in Plan 2, but a passway can be arranged in the wall above the bench if a serving table is located at that point in the dining room.

Space is allowed for a cooler for foods requiring temperature lower than that of the room. Wall space is also provided for a small refrigerator. Storage space at each work center is sufficient for equipment and supplies used there. Reserve equipment and supplies are assumed to be stored elsewhere. Each bin has been made large enough not only for the food to be stored, but also for the equipment customarily stored with it. The wood lift is large enough for one day's supply of fuel for the range.

Elevations of the built-in features of these kitchens are shown on Plates II, III, and IV-A. The labels I-A, I-B, etc., on Plate I correspond to those used in designating the various drawings on the succeeding plates.

\* Farmers' Bulletin 1513, *Convenient Kitchens*.

† Space does not permit adequate discussion of this study. Further information will be supplied on request.



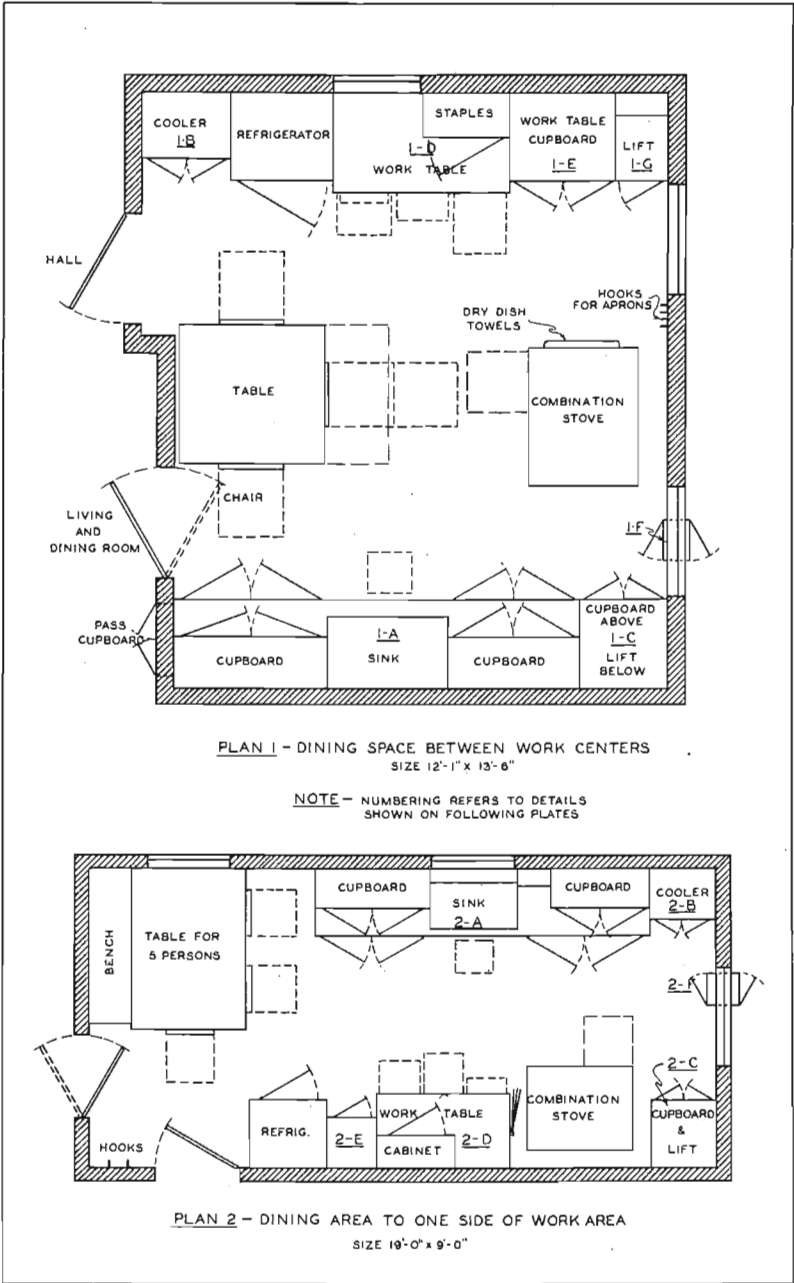


Plate I. Kitchen floor plans, including dining areas. See discussion on page 18.

The best plan for the Willamette Valley farmhouse seems to be to confine the use of the kitchen to the preparation of meals, to canning (except that done on a scale requiring more than two workers), to the service of every-day meals, and to the storage of opened packages of food materials. Under this plan an auxiliary work area and a food-storage room are provided supplementary to the kitchen itself. The reason this appears to be the most economical arrangement is that the kitchen can be smaller and more attractive if much of the "dirty work" is banished. Furthermore, the auxiliary area will not ordinarily be used much of the time, nor will it need to be closely connected with the main part of the house.

Some of the desirable arrangements for kitchens are as follows:

Kitchen dining table on the same side of the work area as the door to the dining room or the living room.

Work centers not separated by doors.

Cooler close to worktable and to sink-and-serving area.

Refrigerator close to worktable and serving area.

Stove between sink and worktable units.

Sink and worktable units opposite each other.

Sink and serving units combined so that the serving counter may also be a drain board.

Sink and serving unit adjacent to dining area of kitchen.

Serving unit on partition between kitchen and dining area so that a pass cupboard may connect the two.

Articles of equipment stored near the place where they are used.

Supplies that do not deteriorate unduly in room temperature, stored near point of use.

Cooler space large enough to provide for the storage of all supplies requiring a temperature lower than that of the room.

Wall space for a small mechanical refrigerator in addition to the cooler.

Cooler made so that it can be easily removed to permit installing a large refrigerator.

A narrow cupboard reaching from floor to ceiling and with hooks on the sides, for large articles which will hang.

Space in the utensil cupboard which is divided vertically to form slots for holding lids, pie tins, and shallow pans.

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**P** LATE II (page 21) illustrates the sink centers of the two kitchen plans shown on Plate I. Plates I and II should be studied in conjunction with Plates III and IV-A, in order to get the complete picture of the disposition made of supplies and equipment it is desirable to store near the sink.

The upper drawing is that of the area about the sink shown in kitchen Plan I. Company dishes are kept in the right-hand upper cupboard, and every-day dishes at the left. The space directly above the sink is occupied by a set of shelves only 6 inches deep.

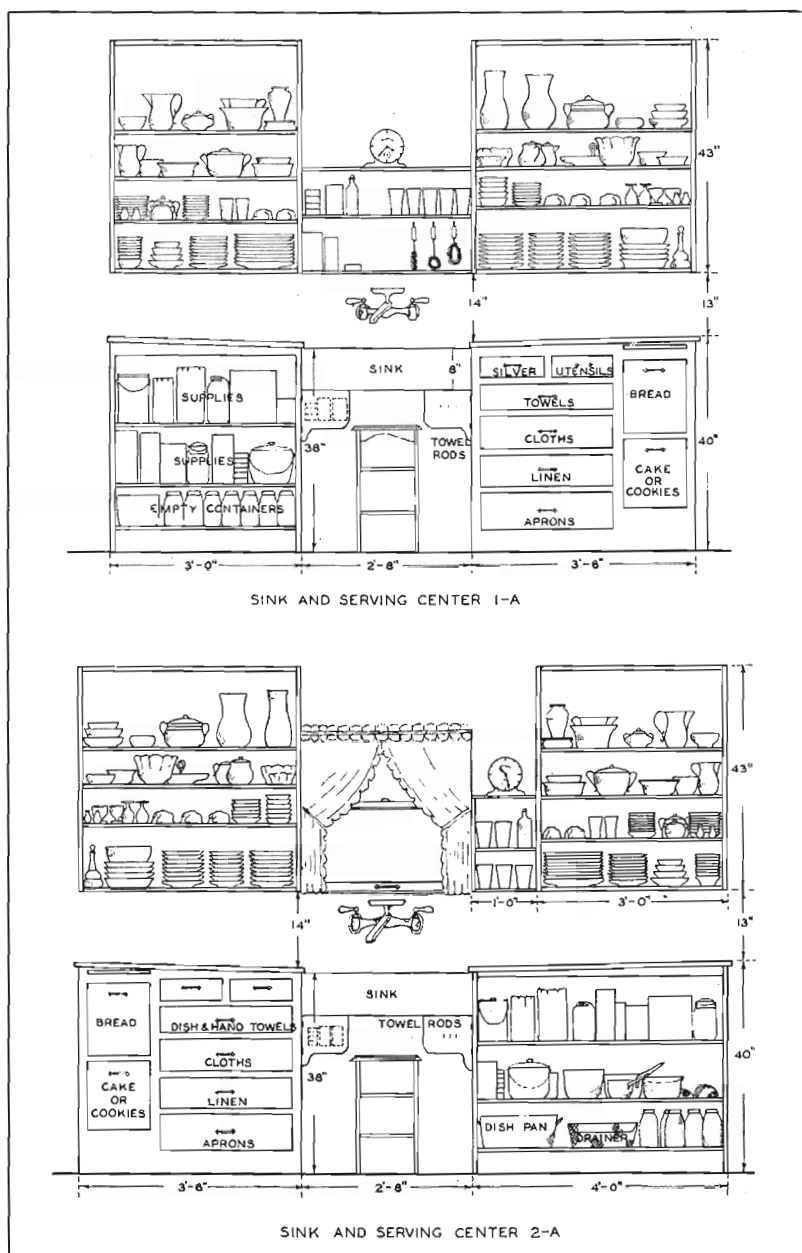


Plate II. Sink-and-serving centers of kitchens shown on Plate I. See discussion on page 20.

Drawers coated on the inside with paraffin, and sectioned to provide bin space for cereals purchased in five-pound or ten-pound lots.

Wall space large enough for a combination wood and electric or gas stove, together with space to stand at sides of the stove.

Depth of stove area sufficient to permit setting the stove away from the wall for ease in cleaning.

Where the combination stove is not used, a cabinet adjacent to the stove having its top on a level with the stove and covered with a material not harmed by hot kettles.

A place near the stove large enough to hold a day's supply of fuel; this may be a woodbox with cleanout below, or it may be a wood lift with a door which drops down to make the contents readily accessible.

Compartments in sink which permit washing and draining dishes without use of pans.

Shallow cupboard above sink for drinking glasses, cleaning powders, hand lotion, etc.

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**P**LATE III (page 23) and Plate IV-A (page 25) illustrate the mixing center and a cupboard arranged to care for the equipment and supplies used at the stove. A part of the area above the worktable should be left free for the comfort of the worker bending over the pastry board. A narrow cabinet for spices, leavening agents, and other articles in frequent use can be built at one side and above the worktable. Bins and drawers occupy the lower part. This area is not sufficient to provide for the storage of the utensils used at the mixing center.

Results of the study to date indicate that more storage space is needed for equipment and supplies in the kitchen than is possible to arrange above and below drain boards and worktable surfaces, without increasing their length beyond that needed for their respective functions. The best way to accommodate this overflow is to provide storage cupboards reaching from floor to ceiling. Where the stove is placed between sink and worktable, one of these can be a worktable-stove cupboard while the other can be a sink-stove cupboard.

Provision for the overflow from the worktable and for some of the utensils and supplies it is desirable to store near the stove is illustrated in the drawings designated as 1-E and 2-E.

Provision for the overflow from the sink area has been made in conjunction with the storage of the rest of the supplies and equipment used at the stove, including wood. This drawing is designated as 2-C.

In kitchen Plan 1 it was found convenient to arrange a cupboard only 15 inches wide to hold large utensils. This is shown by the drawing designated as 1-G.

It is a common practice among farm families to feed edible garbage to animals. Both kitchen plans appearing on Plate I show a built-in garbage container that can be reached from the outside as well as the inside. This container is designated as 1 and 2 F in Plate III.

A cooler large enough to care for all the supplies it is desirable to store at a temperature lower than that of the room will need to be 2 feet wide if it is 18 inches deep. The cooler plan is illustrated by drawings 1 and 2 B in Plate IV-A.

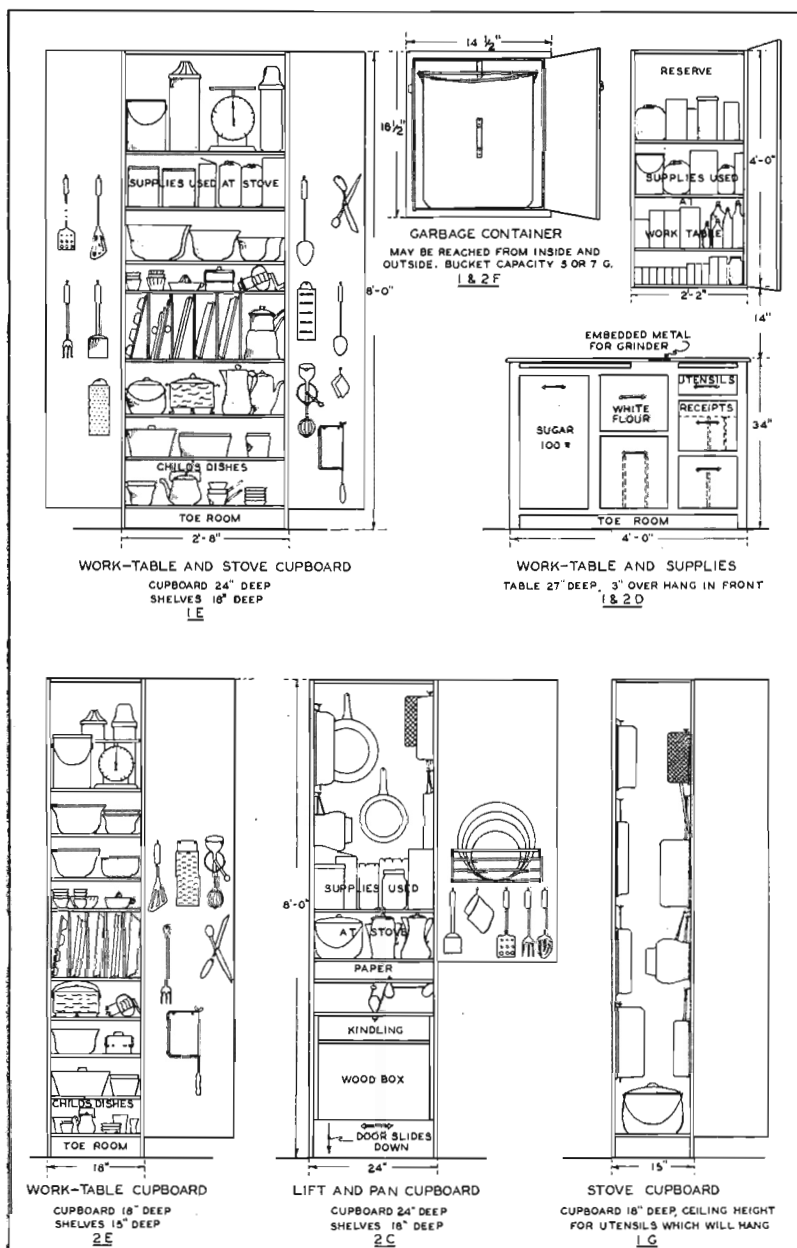


Plate III. Worktable and cupboards for kitchens shown on Plate I. See discussion on page 22.

Built-in garbage container accessible from both inside and outside the house.

Provision for a stool to be used at the sink.

Stepping stool just high enough to make the upper shelves accessible.

All storage spaces closed.\*

Roller-shades used on cupboards instead of doors.

**Auxiliary work area.** (See Plate IV-B.) The term "auxiliary work area" is used to designate an area devoted to work it is desirable to do under the house roof but outside kitchen and living rooms.

The purposes which this area will serve vary in different households, but they may include washing; ironing; preparing fruits, vegetables, meats, and fish for cooking, canning, or curing; processing canned foods; packing eggs; making soap; dressing poultry for the market; cleaning, oiling, and repairing shoes; mixing paint and caring for paint brushes; working with guns and other sports equipment; working at a carpenter's bench or metal lathe; transplanting house plants and starting bulbs and seeds; separating milk; washing milk utensils; setting incubators. Storage room will need to be provided for canned fruits, vegetables, and other preserved foods and for those produced for market, and for supplies and equipment used in doing the various kinds of work assigned to the area. It is well also to provide toilet facilities near by.

The first floor is probably the most satisfactory location for this work area, but use of the basement has the advantage, besides possible economy in building costs, of having a necessarily unattractive section of the house out of sight of the drive and of the living rooms. In situations where the new house is built near the old one, the latter may be converted into an auxiliary work area, and connected with the new house by a covered passage having a wall on the side from which storms come.

Since the operations performed in the auxiliary work area will vary from time to time it is well that arrangements be highly flexible. Only such partitions should be planned as are required for privacy or for

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**I**N PLATE IV-B (page 25) is shown an arrangement for an auxiliary work area located in the basement. Where such an area can be located under the kitchen and where the kitchen stove is provided with a chimney independent of that which includes the furnace flue, it is a comparatively simple matter to achieve a satisfactory arrangement for an auxiliary work area.

The table illustrated in this drawing is movable and may be placed so as to form a work surface continuous with that of the drain board. It is desirable that this table be provided with folding legs, so that it can be put out of the way when not in use, or easily carried upstairs.

The wood-storage area shown in this plan would need to be increased if it is considered desirable to store a year's supply of wood at a time.

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\* The homemakers interviewed in this study were practically unanimous in their preference for closed cupboards. The chief reason seems to be a desire for as attractive a kitchen as possible without spending time in keeping shelves straightened or utensil shining, and without spending money for sets of uniform containers for supplies.

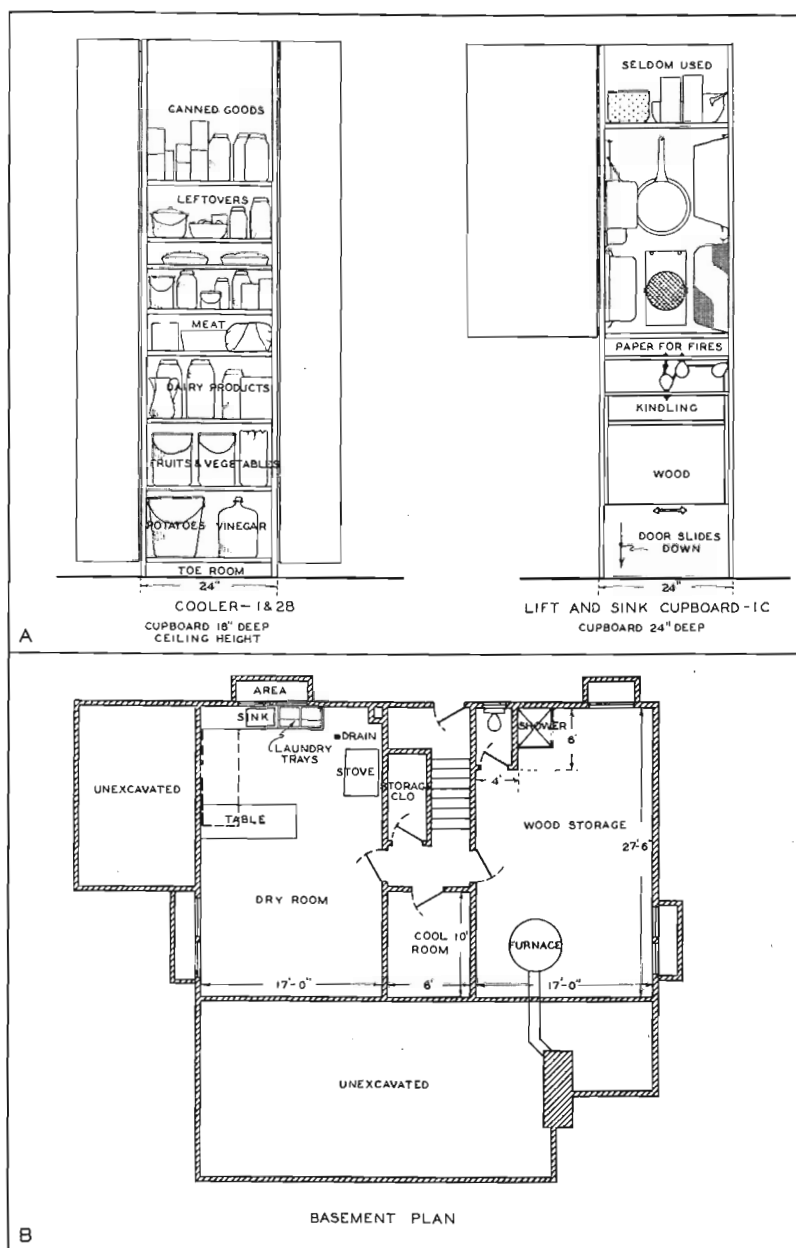


Plate IV. A. Cooler and sink-stove cupboard for kitchens shown on Plate I. See discussion on page 22.

B. Basement plan, showing auxiliary work area and toilet facilities. See discussion on page 24.

desirable differences in temperature; and the area should be so planned that each part of it is suited to the greatest possible number of uses.

Desirable features of the auxiliary work area are as follows:

An insulated and ventilated room for canned products and other preserved foods.

Flue for use of stove when desired.

Windows sufficient for light required for work in daytime.

Floor impervious to water and easily cleaned.

Entrances conveniently located with reference to kitchen and farm buildings.

Drive planned to make it possible to bring heavy articles to entrance of auxiliary area in wheelbarrow or truck.

Room allowed for use of a table as large as 3 feet by 8 feet near sink and stove.

A cabinet provided with some means of forcing the circulation of warmed air, for use during the rainy season in drying the wash.

Basement walls waterproofed and kept whitewashed.

Stairs that are easy to climb.

An outside as well as an inside stairway if both are needed for ready access to kitchen and farm buildings.

Chutes and lifts provided where possible, to eliminate carrying equipment and supplies. It is sometimes possible to arrange a lift opening on the outside of the house on a level with a truck bed, for convenience in handling egg cases, hog carcasses, etc.

A stairway that is broad and straight and is entered from the end, where equipment and supplies must be carried to the basement rather than transported by means of a lift.

**Dining areas.** It is desirable that arrangements for the location of dining areas be made flexible because preferences of farm families in this regard vary from time to time. Elderly people and homemakers whose children are small commonly prefer the kitchen as the place for serving family meals. Where there are children old enough to set the table and wash the dishes, a dining area outside the kitchen may be preferred.

The outside location is always desired for company meals. This area may be a separate dining room or it may be combined with the living room. It is a more usable area if separate.

A porch where meals may be served in warm weather is popular. Crews of men may be served here.

The requirement of flexibility makes it necessary to plan for the storage of dishes, silver, and linen with reference to the various locations of the dining table. A good plan is to store all articles in the kitchen except the silver and linen used only in connection with company meals. The kitchens illustrated in Plate I have been planned with this idea in mind.

A buffet is a desirable article of furniture for use in serving company meals. Drawers below provide adequately for the silver and linen not used every day.



Desirable arrangements for serving meals are:

If the company meal is served in the living room, an area so situated as to make it possible to screen the table while it is being prepared for a meal.

Where every-day meals are served in the dining room, distance between dining table and serving area of kitchen as short as possible.

The table used for every-day meals so placed that it does not require moving, in setting it for a meal.

The kitchen dining table so placed that it can be reached from the living room without crossing the work area of the kitchen.

A special low table for the child of less than three years of age.

Where benches are used, light-weight movable single benches with handholds are preferable to fixed benches seating more than one person.

**Sleeping and dressing areas.** (*See Plate V.*) The problem of heat conservation is important in connection with provisions for sleeping and dressing. The rooms are not used a great deal during the day except as places in which to dress, and most farm dwellers prefer sleeping in cool rooms. Hence in most cases only enough heat needs to be furnished to keep beds dried out and to make the rooms comfortable for use while dressing.

It would seem, therefore, that an economical arrangement for a second-floor room would be to plan a clothes closet large enough for use as a dressing room and equipped with an electric heater. If this were done, the bedroom would need to be only large enough for beds and a small table.

Desirable arrangements are:

Space in each bedroom large enough for two beds each 40 inches wide.

Decks or open porches, as places where older boys and girls may sleep out in summer.

Space at both sides of the bed, and passage at the foot.

A double closet, or preferably two single closets, for each bedroom.

A full-vision mirror with nothing in front of it.

Rod space sufficient to care for dresses, coats, dress shirts, and heavy sweaters.

Hooks, rod, and shelf capable of being set at three heights, for use by children at various ages.

Ventilation of windowless closets accomplished by means of ventilators in door.

Clothes of children not old enough to dress themselves, kept on first floor.

**Toilet facilities.** (*See Plate VI.*) The suggestions included in this section are offered with the idea that they represent acceptable compromises between ideal arrangements from the standpoint of personal convenience on the one hand, and, on the other hand, practical limitations of first cost, water scarcity, cost of heating water and house space, and time and energy required for cleaning.

PLAN 1. For the situation permitting no duplicate installation:

A bathroom on the first floor, located near the back entrance; toilet in a separate compartment; bathroom equipped for care of small children and for use as a dressing room; fixtures including tub and shower and lavatory with separate section for care of teeth; storage provided for toilet supplies and equipment, towels, and articles used in the care of small children; mirrors located for convenience in shaving and for use by children.

PLAN 2. For the situation permitting two installations:

A bathroom on the first floor planned as outlined above.

A bathroom on the second floor opening from the central hall and large enough to permit the installation of a tub and dressing table, but not equipped for the care of small children.

PLAN 3. For the situation permitting three installations:

Bathrooms on the first and second floors planned as outlined

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**S**OME of the ways of arranging dressing centers and clothes closets in relation to each other and to the location of beds are shown in Plate V (page 29). The bedroom arrangements assume that the room is to be occupied by two persons and that separate closets and drawer space are to be provided for the occupants. Closet space is located on the outer wall of the room.

In the arrangement shown at the top of the page, the two persons use the same mirror, which is located between two chests of drawers with windows above them. Each closet provides three feet of rod space and five wardrobe hooks in a convenient location, as well as shelf space and a rack for shoes. The chests of drawers are small, but modern wardrobes do not require much drawer space.

The other floor plans shown on the page represent variations of this idea of individual closets and drawers and a common mirror. In the sketch shown at the lower right-hand corner of the page the space occupied by the drawers, mirror, and windows has been widened and a seat included with spacious drawers below.

In the center of the plate are illustrated three other closet arrangements. The drawing on the left is that of a closet large enough to serve as a dressing-room for one person. The drawers are built into the wall between the dresser and the adjoining bedroom, and the top drawer is made so that it can be pulled either into the dressing room or into the bedroom as desired. The mirror is on the inside of the door, in position for use from the dressing room side when the door is closed, and from the bedroom side when the door is open. This arrangement permits one to dress either in the closet or in the bedroom.

The center sketch marked "Long Closet" suggests the arrangement of a long, narrow closet. Rod space is provided at the back, and hooks and shelves are installed along the sides. Rod space for short articles, such as children's garments, blouses, skirts, and shirts, is provided by means of a long hook at the side of the closet.

The illustration to the right shows a double closet. This has a rod on either side of the door. Hooks are placed immediately inside of the door, permitting use of this area for garments either on hooks or on hangers. Shelves are placed above the rod on either side, and shoe racks below it.

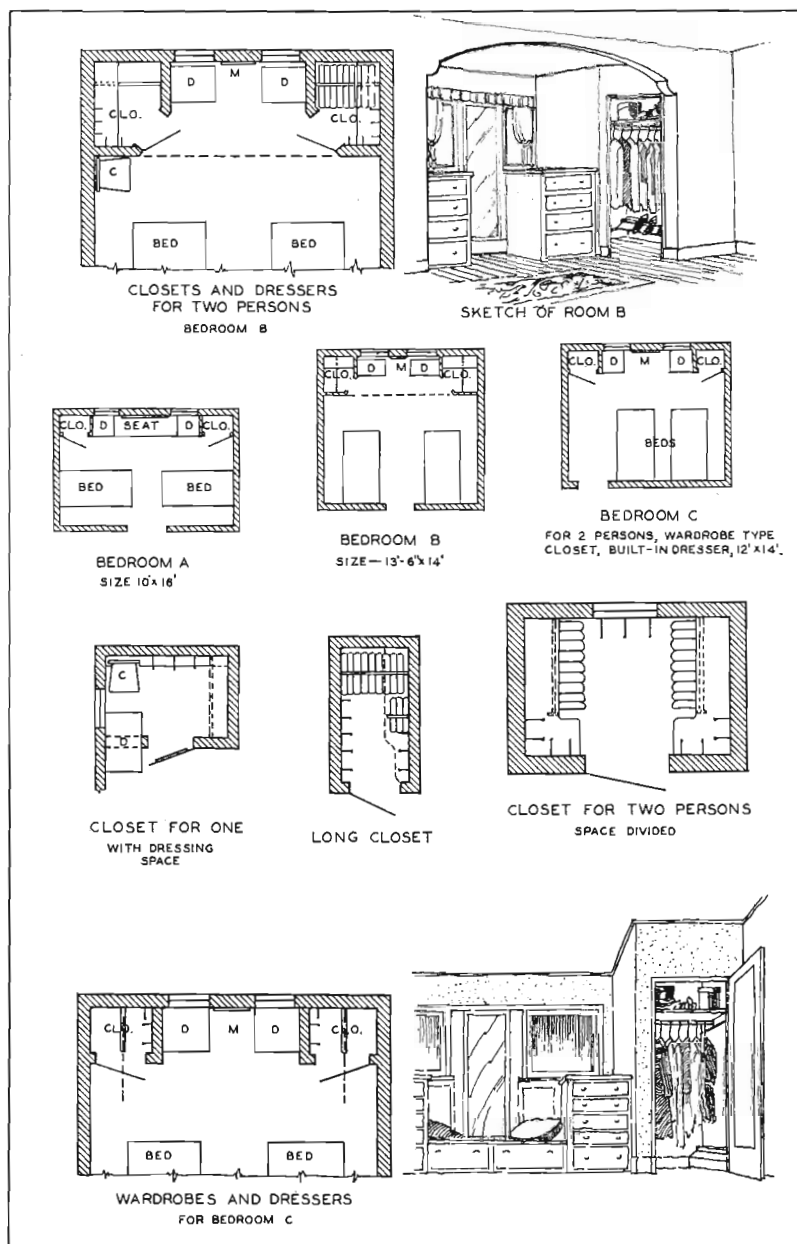


Plate V. Clothes closets and dressing centers. See discussion on page 28.

above except that the toilet on the first floor need not be in a separate compartment. Toilet and shower in the basement.

Desirable arrangements are:

A table surface at least 14 inches by 18 inches near the lavatory.

Drawers or shelves for toilet articles and shaving equipment.

Storage in or near the bathroom for towels and supplies of soap and paper.

A built-in cabinet which provides a foot rest and a place for storage of shoe-cleaning equipment; this may be a section of the main cabinet, or it may be fitted in between studs.

A ventilated cabinet containing rods for towels in use and a place for wet brushes and cloths.

A cabinet top at least 18 inches by 36 inches for use in the care of an infant, or a wall surface permitting the use of a table for this purpose.

A place near the bathroom for the storage of supplies and equipment used in cleaning the bathroom.

A dental fixture; this may be purchased as a separate fixture or as a part of the lavatory.

A place for a mirror in front of a window or between two windows, with no obstruction in front of it.

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**T**wo plans for bathrooms, together with ideas for built-in features, are presented in Plate VI (page 31). In Plan 1 the toilet is placed in a separate compartment, containing no other fixtures. The bathroom proper is equipped with a tub and a lavatory. The mirror is located between two windows and adjacent to the lavatory.

This bathroom is equipped with a chest of drawers 18 by 24 inches. A drop-leaf at one side makes it possible to extend the top of the chest to 36 inches. This cabinet provides for the storage of toilet articles and baby clothes. It is portable, for convenience in moving it to another portion of the house when desired.

Towels and washcloths are kept on shelves in a cabinet just inside the door, the lower part of which can be used for the storage of soiled clothes. This bathroom plan assumes that cleaning equipment is stored in a closet in the adjacent hall.

Plan 2 shows a bathroom that includes the toilet. Storage room is provided by a built-in section at the side. Part of this is intended for the storage of towels and soiled clothes, as illustrated in the drawing 1-B. The rest is a dressing table with an open center section and drawers at either side. A mirror may be placed above this table if desired, but if only one mirror can be installed it should be placed between the two windows as indicated in the plan.

The two drawings in the lower left-hand part of the plate illustrate wall cabinets. That on the left is intended for medicines, while that on the right is convenient for toilet articles not kept in the drawers. These cabinets are 14 inches wide, for convenience in installing between studs. The lower shelf of the medicine cabinet is closed by means of a door hinged at the bottom, as a convenient place for keeping small tubes, boxes of salve, rolls of bandage, and other small articles.

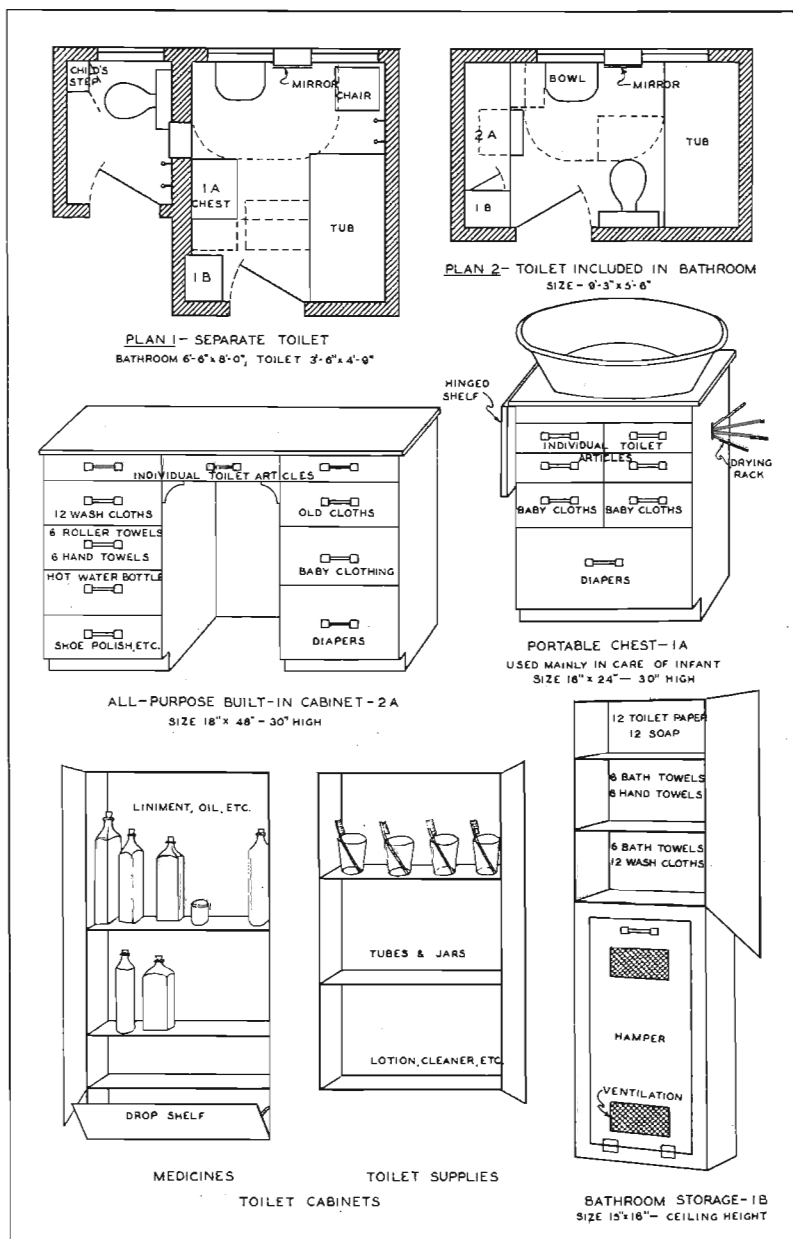


Plate VI. Plans for bathrooms equipped for the care of young children; bathroom cabinets. See discussion on page 30.

Recess in wall for installation of electric heater when desired.

A shelf near the lavatory large enough for drinking glasses for all persons using the bathroom.

Hand-holds at back and left end of tub. It should be possible to reach a hand-hold from a sitting position in the tub and also from a position outside the tub.

A bathroom stool with a revolving seat.

Outlet for use of electric hair clipper.

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**P**LATE VII (page 33) shows the arrangement made for sewing, mending, and ironing in a home where there are no daughters and where garments utilizing long yard-lengths are not customarily made.

Two arrangements are illustrated. One of them is that of a room 6 feet by 6 feet 6 inches, opening from the living room or dining room. The other is an alcove large enough to provide for the storage of sewing equipment and supplies, which may be closed when desired.

The detail of the storage cabinet is shown in the upper left-hand corner of the plate. The lower part of it is a chest of drawers that may be used as suggested or converted to other uses. The first and second drawers are divided in the manner shown in the drawings at the right of the cabinet. Above the cabinet are open shelves for boxes, magazines, and other articles which do not require storage space in a drawer.

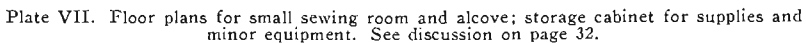
A cutting table of sufficient length is provided by boards hinged at the end, which form a continuous work surface with the top of the cabinet. Two sections rather than one are provided for ease in handling, and also for convenience when a wide cutting table is not needed.

In Plan 1-A the sewing machine is in a position where it can be left open continuously, except when cutting is being done which requires the use of both of the hinged sections. The pressing board may be placed in the wall immediately back of the corner in which the sewing machine stands. The chair used at the machine will probably need to be taken out of the room entirely when the board is used for ironing or pressing, and both sections of the cutting table will need to be folded back against the wall. A possible location for the ironing board is on the door. In that case the board can be in position for use without disturbing the chair at the sewing machine.

Minor utilities adding to the completeness of the room are a hook behind the door, for partly finished garments on hangers; a rod at the end of the cabinet, for wet pressing cloths; a stool for use at the cutting table; a waste-paper basket.

When the garment is first started, it is likely that the sewing machine will be closed and pushed back out of the way; the ironing board will be folded up into the wall or on the door, and both of the hinged sections will be let down to make a cutting surface continuous with the cabinet top that is 38 inches wide and 6 feet 6 inches long. After the garment has been cut out, the right-hand section can be folded back against the wall, leaving the left-hand section available as a worktable for use in pinning, basting, and cutting small pieces.

The sewing alcove shown in Plan 2-A would be used in much the same manner. A good light for the machine would require a window in the end of the alcove.



**Sewing, mending, and ironing.** (*See* Plate VII.) These activities form a group which may be considered as a unit because of the manner in which they are fitted into the household schedule and because of similarity in desirable working conditions. They are likely to be carried on in the afternoon or evening; they require a warm, clean, and light place; they can be done anywhere in the house (assuming the use of electricity for ironing); and sewing usually requires the use of the ironing board.

In most houses it is desirable that provision for ironing and pressing be made in two or three places; in or near the kitchen, for use while attending to cooking; near the place where sewing is done, and in a place convenient for pressing garments between cleanings. In most cases the best place for sewing is on the first floor, in a warm, light, and readily accessible place. The great variation in the kind and amount of sewing done in families makes it desirable that arrangements for the care of this function be highly flexible. Since sewing and ironing are not carried on continuously or at stated periods in the schedule, they may be done in a room which has at least one other major use.

Plans for locating sewing and ironing:

- PLAN 1. Sewing done in living room or dining room. A closet or alcove in connection which contains storage cabinet; work surface for basting, pinning, and cutting small pieces; place to store machine when not in use; dress form; folding clothes rack; portable cutting table.
- PLAN 2. Minimum-size sewing room, with machine in position for use at all times (*see* Plate VII). Ironing done outside room.
- PLAN 3. Suitable for use in a home where guests are infrequent. Combination sewing room and spare bedroom; two closets—one for sewing (as for Plan 1), the other for a roll-away bed.
- PLAN 4. Suitable for a family which includes boys and girls of high school age or older. Valet room in which all sewing, pressing, and ironing are done.

The simplest way of providing light at the machine is to attach an electric light to it. The position of the machine with reference to the window is then of minor importance. However, many persons prefer to locate the machine in a position where light from the window is adequate for stitching.

Desirable arrangements for sewing, mending, and ironing are:

Room readily converted to other uses.

Storage room in one place for all supplies and minor equipment used in sewing. This may be a chest of drawers with open shelves above it for boxes, baskets, trays, etc.

Machine stored when not in use in a place where it is possible to get at it readily for emergency mending.

Work surface, available at all times, which is convenient for basting, pinning, and cutting small pieces, preferably located in a place where work can be left undisturbed between periods of sewing.

Work surface for use in laying out commercial patterns on lengths of goods. Use of such a surface would be infrequent, hence it can be a folding table or one used for other purposes.



Ironing board located near sewing area and in a position where it is in readiness for use while sewing is in progress.

A mirror conveniently located and of such dimensions and location as to provide full vision for the person who is being fitted.

Sewing machine provided with an attached electric light.

Machine placed so that light from the window will come from back and left side of worker.

Portable containers for equipment and supplies used in hand sewing and darning.

**Arrangements for care of farm business.** Arrangements which are needed for the care of the business of Willamette Valley farms vary widely with differences in the size and the character of farm enterprises.

Satisfactory arrangements fall into three groups:

PLAN 1. No provision for interviews.

Writing done at dining table or library table.

Storage provided by means of portable cabinets or wall closets.

PLAN 2. Office desk provided for use of farm operator.

Desk located in living room or dining room.

Supplementary storage provided in portable cabinet or wall closet.

PLAN 3. Separate office room, including office desk and built-in cabinets for supplies and for the use of employees. It may be desirable to make this room somewhat larger than that required for office purposes alone, in order that it may be possible to use it as a "man's room" or second living room.

The office room, or the office area of the living room or dining room, should be located so as to be readily accessible from the farm drive and farm buildings. It should be possible to enter it without crossing any of the living area of the house.

If an office room is provided, it should have an entrance which is readily accessible from the kitchen, for the convenience of the home-maker who is expected to answer the telephone and take care of part of the farm business. In certain locations two entrances are necessary.

**The telephone.** Although the wall type is in general use in farm-houses at the present time, it is likely that it will be supplanted eventually by the desk type. Arrangements for the telephone should be made with this possibility in mind.

The telephone should be located away from the center of family life but near the kitchen, and in a place convenient for a person coming in from outside. The bell box should be placed where the bell can be heard from all parts of the house. (Extra wiring may be needed.) Suggested locations are in an alcove off the back hall; in the wall between the back hall and the kitchen and accessible from both sides; or in the wall of the office at the point most accessible from the kitchen. A good size for the alcove is 28 inches wide and 18 inches deep.

Convenience in the use of a telephone installed at standing height is enhanced by the provision of a writing shelf with light above it, and by a platform or low stool for the use of the shorter persons in the family. If the telephone is installed at sitting height, a desk or shelf should be provided in connection. A good size for a rectangular shelf or desk is 16 inches by 28 inches. A corner one will need to extend 28 inches on each wall.

**Halls and entrances.** (See Plate VIII.) There are four essentials in the planning of the front entrance of a house: adequate protection for the door, a vestibule of adequate size, a coat closet, and a seat to be used in removing overshoes. A roof or porch should extend over the door far enough to afford adequate protection from the rain. On the stormy side this roof will need to be at least 3 feet 6 inches wide if there is no side wall. If the seat is outside the house, it should be so located as to be protected from rain.

The vestibule should be of such proportions as to permit a guest to pass her hostess while the latter closes the door; a convenient plan is one which provides a minimum of 30 inches between one side of the door and the wall, and a minimum depth for the vestibule of 24 inches more than the width of the door, making a room 5 feet by 6 feet 3 inches. The vestibule should be at least 4 feet wide, and a room of this width will need to be 9 feet 6 inches long.

A study of the manner in which halls are used by the family shows the desirability of planning a house so that traffic areas ramify from a central stem. The base of this stem is the entrance leading to the farm drive and the farm buildings; the stem itself is a hall connecting this entrance with the portions of the house that are in constant use. These include the kitchen, living room or dining room, downstairs bedroom, entrance to the basement, and entrance to the second floor. It is desirable to locate in or adjacent to this hall a coat rack or closet for the use of the family, a telephone niche, alcove or booth, a cleaning closet, and a cabinet for the storage of sports equipment. The telephone and the sports-equipment cabinet may be located in the office, if such a room is included in the floor plan.

## BASIC DIMENSIONS

In the following section, some of the dimensions have been included which were used in planning the units and utilities illustrated in the preceding drawings.\* The dimensions will be useful to the prospective house builder, in helping him to guard against the common errors of failing to

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**F**OUR hall plans are illustrated in Plate VIII (page 37). In Plans 1, 2, and 3, the stairways of which have turns in them, the doors between the first and second floors have been placed on the landing rather than at the foot of the stairs.

\* The dimensions given are tentative, being based on a limited number of observations. It is anticipated that additional work will be done during the next two years in determining dimensions for activity areas and storage spaces.

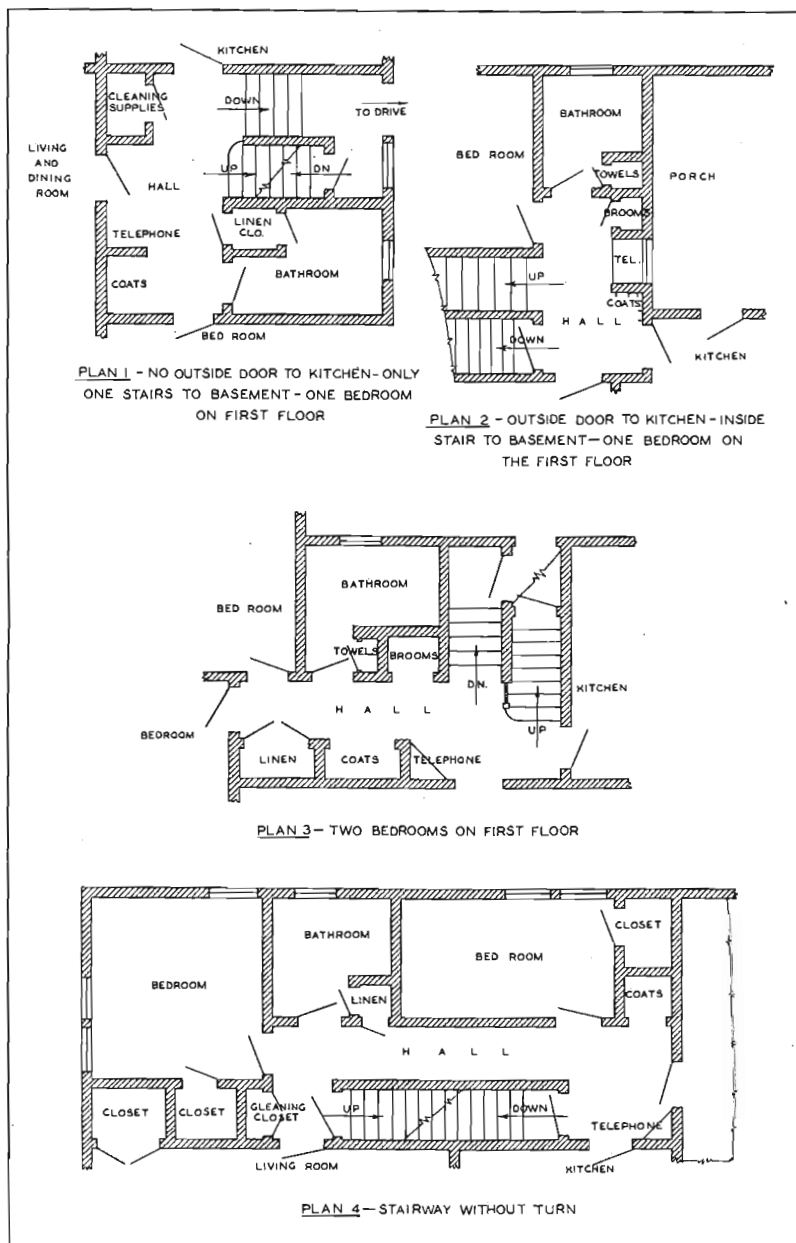


Plate VIII. Floor plans for halls connecting parts of house. See discussion on page 36.

provide room in connection with each utility for the persons who are to use it, and room to pass from one part of the house to another. They will also be useful in making plans for remodeling and for adding conveniences to the home.

**Dimensions of activity areas in general.** Certain dimensions are used in determining areas in many different parts of the house. Some of the more important general dimensions are listed below, while those used chiefly in the planning of specific areas are listed in the following sections.

**ENTRANCES:**

Quarter or half circle, as determined by width and location of door.

**PASSAGES:**

Between pieces of furniture of less than elbow height—

To permit a person to "edge" through, 15 inches.

To permit a person to walk through naturally, 18 inches.

Between wall or high furniture and piece of less than elbow height, 21 inches.

Between wall and high furniture, 24 inches.

**SEATING:**

Depth of space needed for knee and foot room in front of straight chair, 20 inches.

Minimum width of space occupied by seated person (as between legs of table), 15 inches.

**STANDING ROOM:**

No action, 18 inches.

Working at drawer, depth of area 24 inches to 27 inches.

**REACH:**

Maximum height of shelf from floor, 72 inches.

Distance between centers of drawer pulls, 20 inches to 24 inches.

**STOOP, BEND OR CROUCH:**

Depth of area, 36 inches.

**ARM MOVEMENT:**

Width of area varies from 24 inches to 34 inches, depending upon extent to which entire arm is used.

**Dimensions of the kitchen.** In planning the kitchen, the size of certain structural units to be accommodated must be considered as well as the floor area itself.

**STRUCTURAL UNITS:**

Depth of mixing table, 27 inches.

Width of part of mixing area unobstructed by cupboard above, 24 inches.

Distance between counter and first shelf of upper cupboard, 14 inches.

Depth of stack-and-drain surface, 24 inches.

Length of counter for draining and drying dishes, 32 inches.

Length of counter for stacking dishes, 36 inches.

Minimum distance between left of sink and wall or counter, 24 inches.  
(place for person wiping dishes).

Maximum height from floor to shelf intended for articles frequently used, 72 inches.

Margins about articles stored (for freedom in action of hand) :

In front of article stored on shelf, 2 inches.

Between article and shelf above, 3 inches.

Between a hook and the lower edge of an article hung above it,  
3 inches.

Between the backs of utensils hung on the side walls of a cabinet,  
4 inches.

Minimum width of pass-cupboard opening, 14 inches.

#### FLOOR AREAS :

Minimum width of space between two centers, 48 inches.

Space in front or at side of open oven door of wood stove, 30 inches.  
(Measure taken from edge of door when open).

Space in front of wood lift (if below counter), 36 inches.

Space before drawers—

For pulling out the drawer, 6 inches less than depth of counter  
or table (if drawer occupies its entire depth).

For standing in front or at the side of drawer, 21 inches.

**Dining areas.** The size of the dining area, whether it be a separate room or a part of another room, is determined from the dimensions of the dining table and of the seating area about it. The dimensions given below are sufficient for the determination of the sizes of dining areas of the various sorts required in the average house.

**SPACE REQUIRED FOR OCCUPIED SEAT OR NON-MOVABLE SEAT :** Since the front edge is on a line with the edge of the table, this measure depends on the floor area required by the seat itself. 18 inches by 18 inches is a common measure.

#### WIDTH OF PASSAGES :

Between front of seat and edge of table when seat is drawn back—

To permit person to take own seat, 9 inches.

To permit person to pass to seat beyond, 12 inches.

Between corner of table and corner of adjacent article of less than elbow height, 15 inches.

Back of occupied seat and article of furniture of less than elbow height—

For person passing to seat beyond, 15 inches.

For person serving table, 21 inches.

WIDTH OF PASSAGES (*continued*):

Back of occupied seat and wall or article of furniture of more than elbow height—

For person passing to seat beyond, 18 inches.

For person serving table, 24 inches.

**Bedrooms—**

Width of space at side of bed, for convenience of person making it, 20 inches.

Width of passage at foot of bed, 20 inches.

**Clothes closets—**

Width of closet door, to allow for a person carrying garments on hangers, 24 inches minimum.

Depth of space occupied by garments on hangers, 24 inches.

Distance between side of door and corner of wall of closet 24 inches deep, 10 inches maximum.

Width of free floor area sufficient to permit a person to enter a closet and turn around, 24 inches by 24 inches.

Length of rod space per garment—

Street and house dresses, 1½ inches.

Dinner and evening dresses, 2 inches.

Coats, fur-trimmed, 6 inches.

Coats, other, 4 inches.

Distance between hooks, 9 inches.

**Toilet facilities—**

Area in front of tub required for persons stooping or kneeling while helping child with bath:

Depth of area in center, 30 inches.

Distance from end of tub to adjacent fixture or piece of furniture 18 inches in depth, not less than 8 inches.

Area about toilet required for person helping child or feeble person (measured from center of front edge of back of seat):

Depth, 30 inches.

Distance to adjacent fixture or other obstruction at right of toilet, 30 inches.

Area about lavatory (measured from the center of the bowl, laterally, and on a line with the fronts of the faucets):

Distance to adjacent fixtures or other obstructions more than 12 inches in depth, at left, 20 inches (required by adult washing own hair); at right, 38 inches (required by person helping another to wash hair).

**Sewing arrangements—****Cutting table:**

Space between ends and adjacent wall or furniture, 2 inches.

Space in front for worker:

Length same as that of table.

Depth, 24 inches.

Size of table:

For all purposes, 42 inches by 108 inches.

For households where outer garments for adults are  
habitually bought ready-made, 38 inches by 72 inches.

Work surface for basting, pinning, and cutting small pieces, 22  
inches by 60 inches.

Sewing machine—distances to walls or adjacent articles of furni-  
ture:

At left of machine, 6 inches.

At back of machine, 2 inches.

At right of machine, 1 inch.

**Ironing—**

Space at open end of board, 6 inches.

Space at back of board, 6 inches.

Space for worker:

Length—that of board plus 12 inches.

Depth, 27 inches.

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