STUDIES IN HOME PLANNING

by

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INTRODUCTION

The desire to make this study was created by an editorial published in "The American Architect" for September 1930 in which the following statement appears. "The average family has become a small unit that accommodates itself to small space - two, three, or four room apartments. Its members average less than five in number. Why not build for these small families tiny houses that are merely individualized small apartments built among trees and beautiful flowers? If a family will spend from seventy-five to one hundred and fifty dollars a month for two or three rooms, why should they not be offered the advantages of home ownership on the basis of small space and many conveniences in restricted sections? One large living room, possibly another small bed room, with kitchen and bath, are all the average family needs or wants, as is proved by the popularity of one, two, and three room apartments. There is a real market here for the building industry, a market that has been but slightly tapped in a few sections of the country."

The purpose of this thesis is to offer the reader a discussional study of a number of small house plans for small families in various income classes and to show the development of one of these houses from an apartment plan. Wide interest in this idea has been shown recently by all concerned, especially by the contractor and architect who are working to create a building revival.

The motor car - once a luxury and now a necessity for the family - gives the owner an opportunity to live at some distance from his work. There now exists a popular demand for small houses in outlying restricted districts. Frank Lloyd Wright, the American architect and philosopher, writing on the America of tomorrow*, advanced the opinion that "We must choose between the automobile and the vertical city". His advice was to do away with congestion by living "by the acre, instead of 1000 to the 'hectare' or by the square foot. ------- A more sensible procedure is to let the automobile take the city to the country". In the search for material for this thesis many such arguments for suburban living have been encountered.

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* "The American Architect" for May 1931

The purpose here is to satisfy the owner's rural inclinations and yet give him all the conveniences and advantages he expects from city apartment living. The obvious procedure, for this study, was to take good small apartment plans and isolate them as detached houses. This type of research may appear to the reader to be a form of plagiarism but the many changes that must go with each plan and the conclusional effect makes the house seem far different from the key plan. The architectural designer is a proud and generous giver of ideas he has found.

The aim of this research is not towards standardization because of the complexity of our social skein. Each family in each environment demands a different solution for the satisfaction of its economic limits and its ideals.

The opportunities for study of the social problem connected with this work are likewise almost limitless. Statistics show that smaller families are now a sociological fact and the effects of apartment house life, city labor conditions, rent systems and a host of other influencing agents are related vitally but are not included as major parts of this discussion.

I got my first material from R. W. Sexton's two volumes "American Apartment Houses of Today", but soon

found that owing to the rapid changes in the uses of materials and patented conveniences this search must be centered on the most recent architectural publications. Then followed the analysis of the principal units; the living room, kitchen, bath, and garage. This was done by study of manufacturers catalogues supplied for the file of the American Institute of Architects.

The apartment plans that appeared to be the most efficient and compact were then corrected to fit the requirements of the small house. Elevations were studied at small scale and perspectives were drawn.

In presenting the material in this thesis I have resorted to the use of illustrative plates with descriptive text. The work may be divided into three parts. First, the folding bed, small bath, combined bath and dressing room, and the kitchen became important units so I have introduced informational plates concerning them. Second, the development of a house from an apartment plan. And third, several examples of small houses resulting from the use of this method of development.

The work will appear under the following headings:

The approach to the problem

The development of a house from an apartment plan

Several small houses

In every case I have taken care to credit architects and authors for plans and statements used in this thesis and have concluded with a bibliography of the references read.

THE APPROACH TO THE PROBLEM

A preliminary examination of apartments of minimum size brought out the fact that there are three necessary parts - the living room, kitchen, and bath - to the most compact of living quarters. In such apartments a folding bed let down in the living room is used to convert it into a bed room. The bath room was often combined with a dressing room, and in many apartments the kitchen was adjacent to a small dining alcove.

I began with a study of minimum bath rooms and baths combined with dressing rooms. Although the position of the bath in plan governs the placing of fixtures to a great extent, it is well for the planner to have a knowledge of the minimum spaces in which the fixtures will efficiently fit. (Plate I.) The points to keep well in mind are ventilation, outside light, the placing and swing of the door, and the arrangement of the tub, stool, and lavatory so that they may be economically fitted by the plumber and easily cleaned by the housewife.

The ventilation of bath rooms for apartments is now accomplished successfully by concealed flues. Baths that

Plate I.

A number of compact bath room arrangements

Fig. 1.- The minimum size bath room with a single door entry.

Fig. 2.- A narrow arrangement with fixtures economically placed along one wall. For placing between deep rooms.

Fig. 3.- Minimum space and placing for a room with shower bath.

Fig. 4.- Compact arrangement of bath between two rooms.

Fig. 5.- A narrow bath arrangement suited to access from a hall.

Fig. 6.- Ideal small bath arrangement for a single door entry.

(The above are from statistics given by "The Architectural Record" for February 1932)

Figs. 7 & 8.- Spacious arrangements recommended by a fixture manufacturer.

PLATE 1

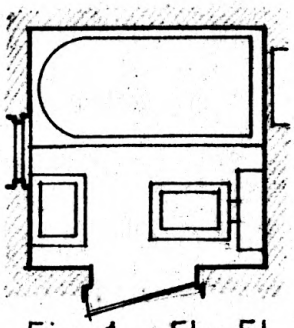

Fig. 1 - 5' x 5'

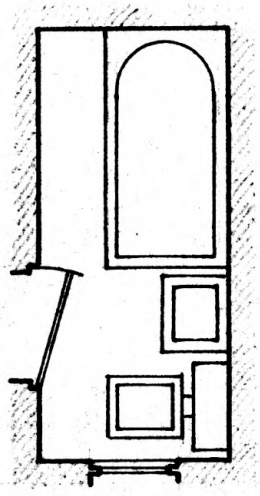

Fig. 2 - 4' x 9'

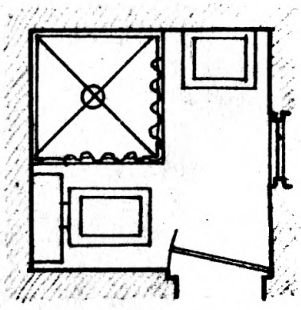

Fig. 3 - 5' x 5'

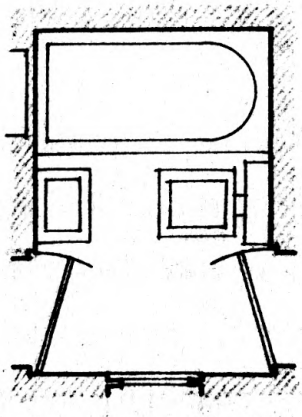

Fig. 4 - 5' x 7'

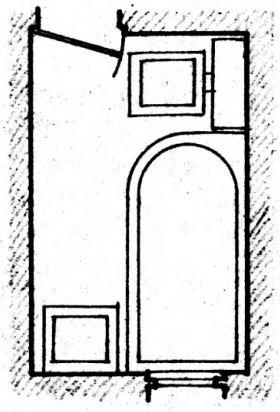

Fig. 5 - 4½' x 7'

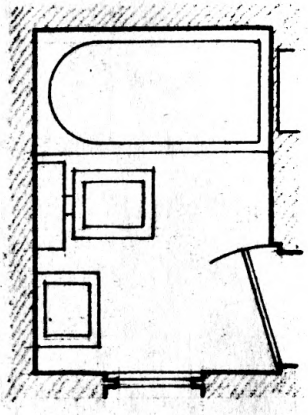

Fig. 6 - 5' x 7'

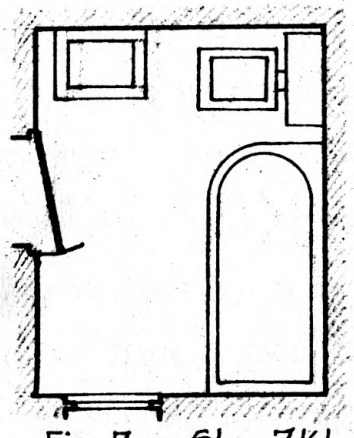

Fig. 7 - 6' x 7½'

SMALL BATHS

Scale
0 1' 2' 3'

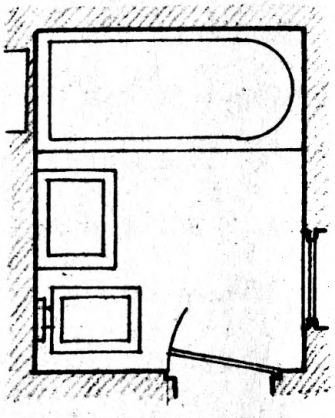

Fig. 8 - 5½' x 7'

are closed in by interior walls are possible and sometimes work into the plan at a much better advantage than when placed along an exterior wall.

The value of a shower bath has hardly been recognized by home owners. It is compact, economical and encourages a frequent healthful practice. People should be taught to appreciate it.

Many home owners would demand a large bath room and would sacrifice space in other rooms to get a large one. Le Corbusier, leader of a new school of architecture in France, expresses his idea of the bath room in his "Manual of the Dwelling"*: "Demand a bath room looking south, one of the largest rooms in the house or flat, the old drawing-room for instance. One wall to be entirely glazed, opening if possible on to a balcony for sun baths; the most up-to-date fittings with a shower bath and gymnastic appliances. An adjoining room to be a dressing-room in which you can dress and undress. Never undress in your bedroom. It is not a clean thing to do and makes the room horribly untidy. In this room demand fitments for your linen and clothing, not more than 5 feet in height, with drawers, hangers, etc." Some of these principles may well be applied to a small

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*"Towards a New Architecture" P. 123

Plate II.

Bath room and dressing room combined

Fig. 1.- An arrangement with spacious bath and generous closet space.

Fig. 2.- Built in dressing table and closed tub-shower.

(Plans suggested by a fixture designer)

Fig. 3.- Built in dressing table and closets with a compact inside bath.

Fig. 4.- Large closets and dresser combined with a bath.

PLATE 2

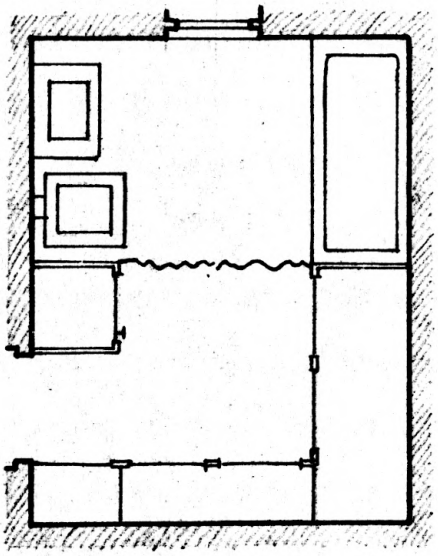


Fig. 1 - 8' x 10'

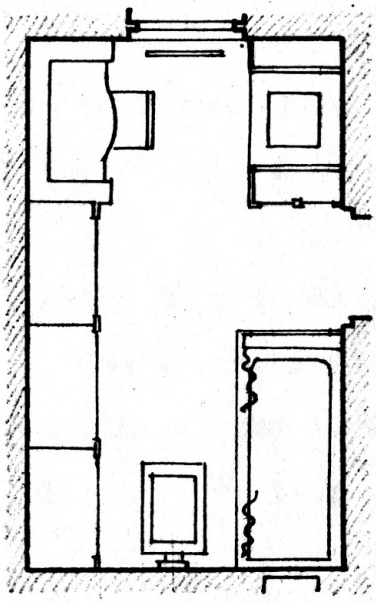


Fig. 2 - 6½' x 11'

COMBINED BATH & DRESSER

Scale 0 1 2 3'

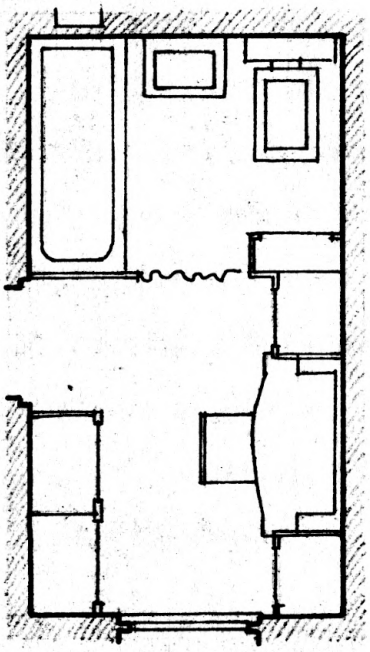


Fig. 3 - 6½' x 12'

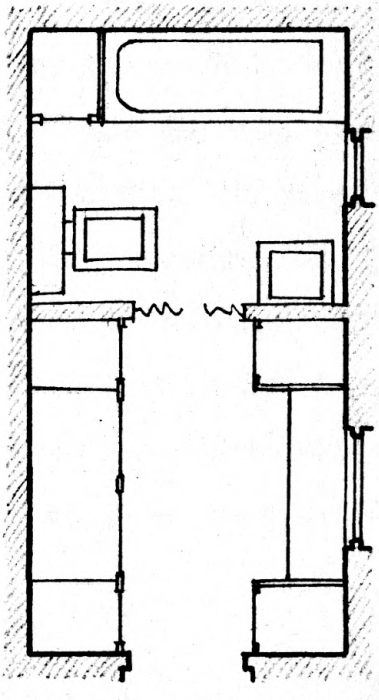


Fig. 4 - 6½' x 13'

house. In homes for two, when the bed room is omitted, the combined bath and dressing room is a necessary unit. It works best when placed adjacent to the living room which is converted into a bed room by lowering the folding closet bed.

The requirements for a combined bath and dresser (Plate II.) which are recommended by fixture manufacturers are: a long, narrow space divided by curtains; one side for the bath fixtures and the other for closets, built-in dressing tables and seats.

Le Corbusier says "Demand one really large living room instead of a number of small ones." In this problem the living room takes on a major importance and the whole house must be designed around it. In the smallest of houses it becomes the bed room at night. When there is only one bed room in the house it becomes the spare room. In some arrangements one end may become the dining room. In all cases the solution seems to depend on a very large living room. A room about twice as long as wide with the long sides open seems best. The short sides may then form entry openings, bed closets, fireplace units, or closed walls of a bed room or garage.

Plate III.

Bed Closets and Folding Beds

Fig. 1.- A full sized door bed.

Fig. 2.- A recess bed. This type has the shallowest closet.

Fig. 3.- The folding bed on rollers.

Fig. 4.- A combination bed which may be swung into a room or let down on a sleeping porch or into another room.

Fig. 5.- The bed is pivoted on a double door.

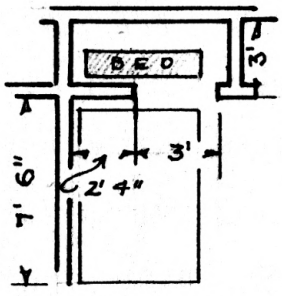
Fig. 6.- Minimum dimensions of dressing closet when in combination with a bed swung on a door.

Fig. 7.- Twin beds with separate doors.

Fig. 8.- Twin beds from one door or panel.

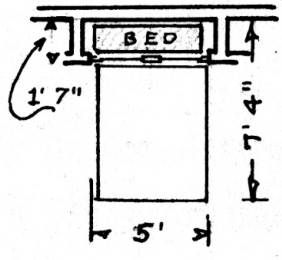
(The above are the common types listed by four manufacturers in the American Institute of Architects' file.)

PLATE 3



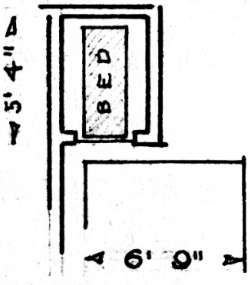
3' x 7' Door

Fig. 1



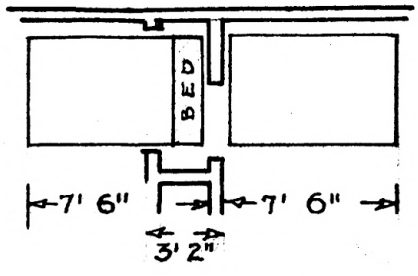
Two 2'6" x 7' Doors

Fig. 2



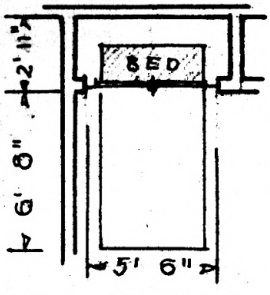
2' 6" x 6' 8" Dr.

Fig. 3



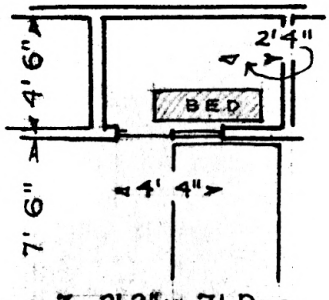
Combination

Fig. 4



5'6" x 7' Door

Fig. 5



3-2'2" x 7' Drs.

Fig. 6

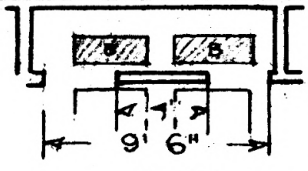
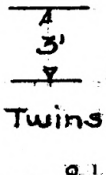


Fig. 7



Scale 0 1 2 3

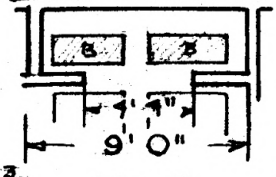


Fig. 8

Plate III is a summary of the various common types of folding beds. The dimensions necessary for the adaption of each type is shown. The recessed bed fits in a shallow closet. The roller bed, which may be moved to any part of the room, is a favorite type. The other types are swung on the closet doors. One specialized type may be lowered in either of two adjacent rooms. Others are swung on the dressing closet door so that the bed folds back into the dressing room when it is not in use. With each of these types of beds there are numerous good room arrangements and many can be recommended for any house whether large or small. In the houses studied here the floor space in all rooms should be cleared as much as possible. A minimum of furniture and fixtures should be installed. The folding bed, in this case, has a decided value. From one third to one fifth of the floor space of bed rooms is used by the ordinary non-folding bed. Even in large houses this floor space would be appreciated if folding beds were used.

The problem of the kitchen for a small house of the type desired here was as important as any other. Small apartments usually had kitchenettes of extreme minimum proportions which would be undesirable when transferred

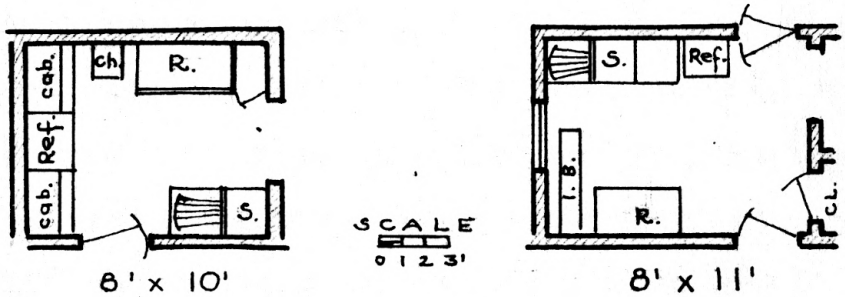
Plate IV.

Kitchens with built in units

Figs. 1 & 2.- Arrangements recommended for apartments with closed walls.

Figs. 3 & 4.- Methods of routing work in compact kitchens. (See text)

PLATE 4



8' x 10'
Fig. 1

8' x 11'
Fig. 2

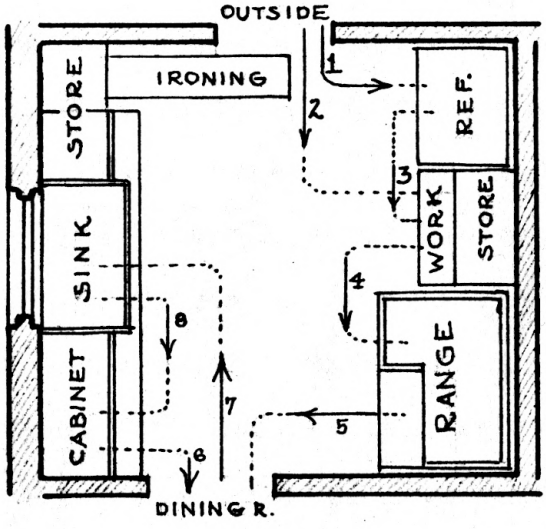


Fig. 3

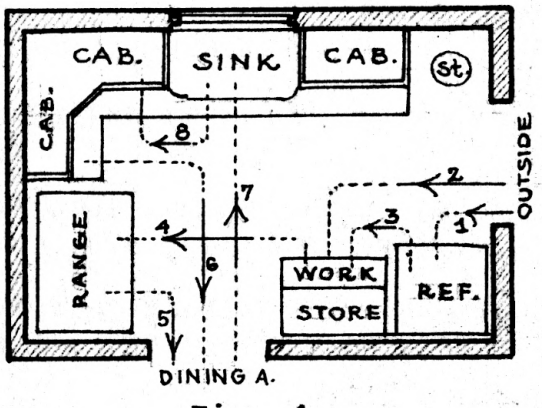


Fig. 4

to the small home. The ideas for compact, built-in parts which were invariably used were of merit. The kitchen for each house offers a different problem because of the fact that one window or door, necessary in plan, may govern the placing of the equipment. Usually the door governs the placing of the refrigerator and the windows the placing of the sink.

The kitchen may be studied in detail by routing the work of the housewife as she goes through the different processes of preparing a meal. (Plate IV.) The door openings in the plan shown (Fig. 3) are on the east and west walls so the traffic will be straight through the kitchen. The cabinet on the north wall is for dishes, silver, and linens. The units on the south wall are for storage and preparation of foods. The routing is as follows:

1. Bringing in fruit, milk, and perishable foods. (Also ice if not automatic refrigeration.)

2. Bringing in canned goods and staple groceries.

3. Preparation of food. (Mixing bowls, etc., in bottom of cabinet.)

4. Cooking food. (Salads, etc., will go direct to dining room.)

5. Serving. (Cabinet at left of sink may be used.)
6. Dishes and silver to dining room for setting table.
7. Clearing away dishes for dishwashing.
8. Drying dishes and putting away in cabinets.

(Other necessary routing is convenient since ice box is near sink so perishable left-overs can be returned to storage.)

The numbers indicated in Figure 4 show the same processes as described above. This, in general, is one quick and effective way of studying the placing of equipment in the kitchen offered by a manufacturer. (See bibliography)

Plate V.

Method of plan study

Fig. 1.- A unit from an apartment plan.
(Frank Hartley, Architect)

Fig. 2.- Part of a similar apartment layout.
(C. C. Wendehack, Architect)

Fig. 3.- Revised plan suitable for a small house.

PLATE 5

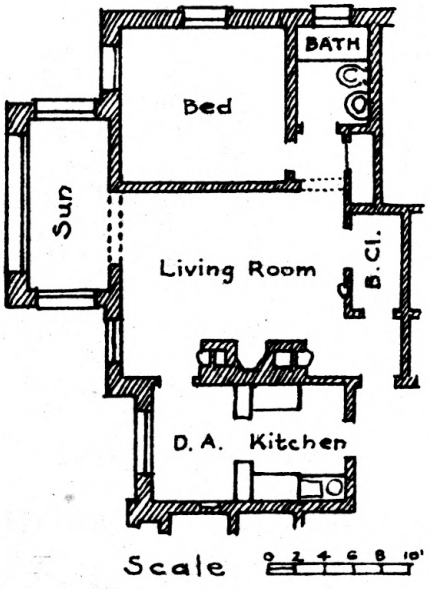


Fig. 1

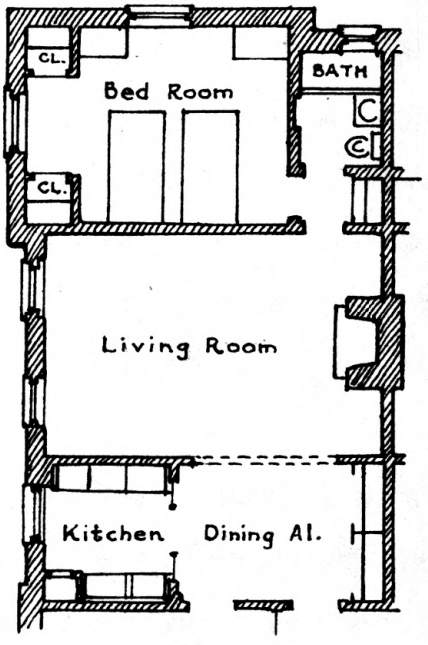


Fig. 2

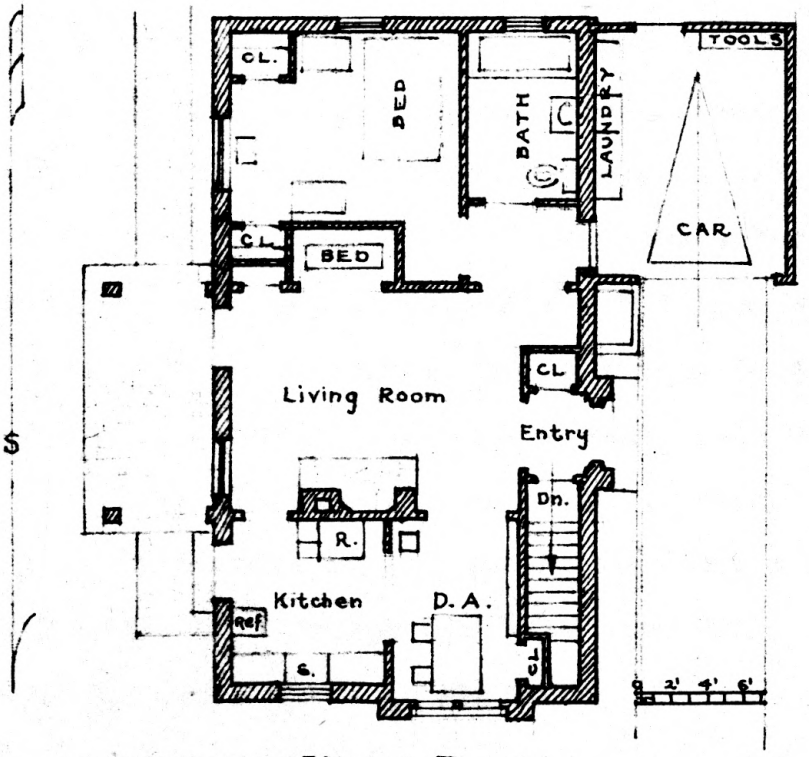


Figure 3

THE DEVELOPMENT OF A HOUSE FROM AN APARTMENT HOUSE PLAN

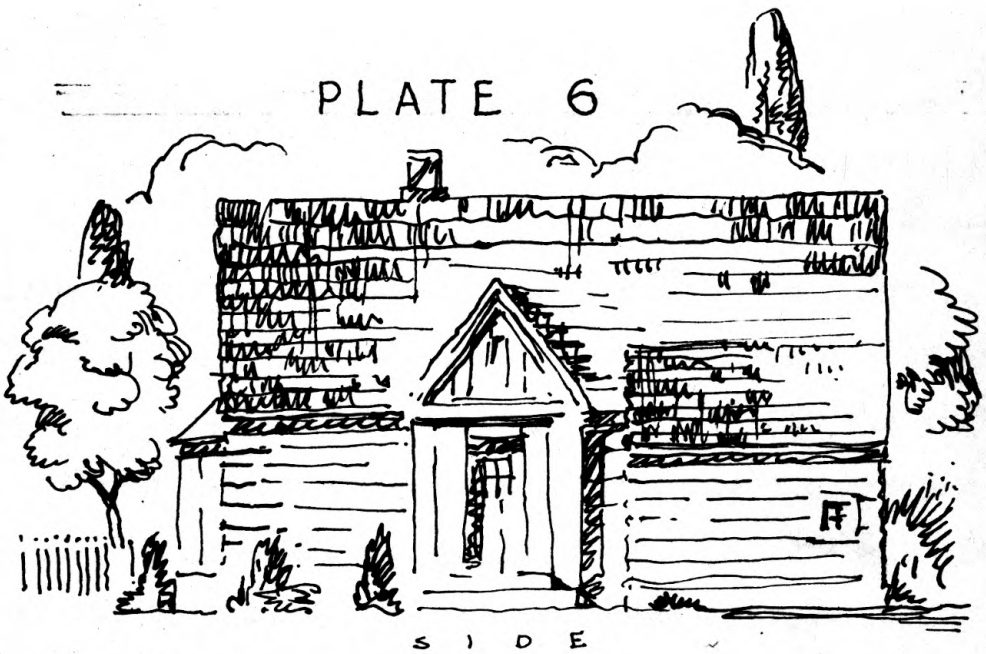
Plates V, VI, VII, and VIII show the various steps in the development of a small house, in sketch form, from an apartment plan. I chose for this example two plans that were very similar in general arrangement. One (Fig. 1) by architect F. H. Anderson and another (Fig. 2) by C. C. Wendehack.

After isolating one of the apartment units I was concerned with the advantages and disadvantages of the room placing. In this particular case the layout seemed to offer good possibilities at first sight. The bed room, situated on a corner, had good ventilation and was large. The living room and bed room, placed as they were, in relation to the bath room, offered an opportunity to add a closet type folding bed. When guests occupy the bed room, the living room may be used for a bed room by the owners. Both parties have independent access to the bath room. The closed outside wall of the bath could be used for one side of an attached garage. The plumbing equipment for a small laundry in the garage could be easily and cheaply installed through the bath room wall. The garage could be semi-heated in winter.

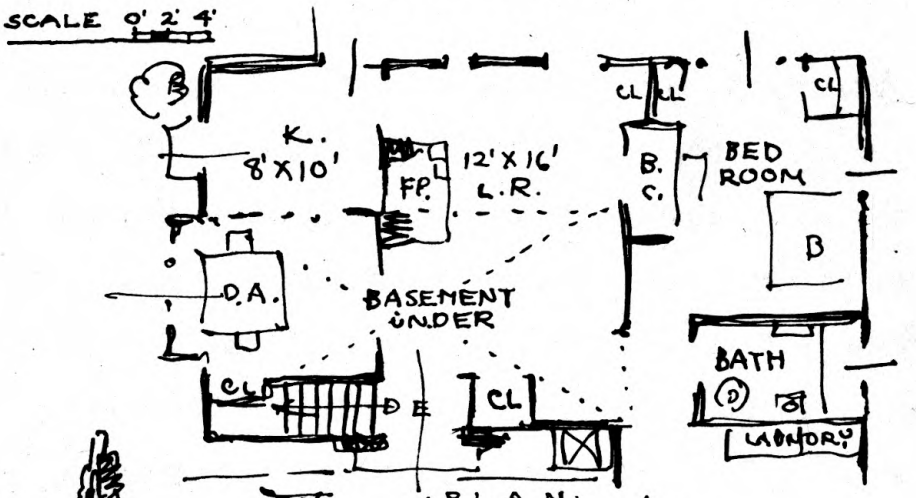
Plate VI.

Sketch plan and elevations of a house.

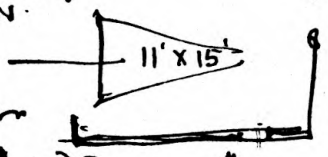
PLATE 6



SIDE



PLAN



The placing on the lot was considered. The plan would fit on a shallow lot of medium width - no doubt this would be classed as a small lot for suburban districts. The drive, from the front street, would pass the entry. The kitchen and dining alcove on the front would meet the approval of many housewives and be in line with the arguments of designers who have made a study of the kitchen problem. The openness of the kitchen and alcove and the privacy of the living room are admirable contrasting features of this plan.

Additions to the plan which were necessary were stairs to the basement and entry to the living room with closet space. The two were advantageously coupled. The open flagstone porch outside the living room and the dining alcove bay were added as optional features. The small basement under the living room and dining alcove would house a small gas, oil, or coal heating plant. The coal chute, in the event of the use of gas, would become an areaway. The stone chimney would serve the furnace, kitchen, and living room fireplace.

The plan was sketched roughly on tracing paper. The elevations were studied in sketch form from this rough plan. (Plate VI.) The regular rectangle of the plan was

Plate VII.

Fig. 1.- Front elevation drawn in line to scale.

Fig. 2.- Side elevation to scale. (See plate VIII for perspective)

PLATE 7

Fig. 1

Scale ~ 0 2' 4' 8'

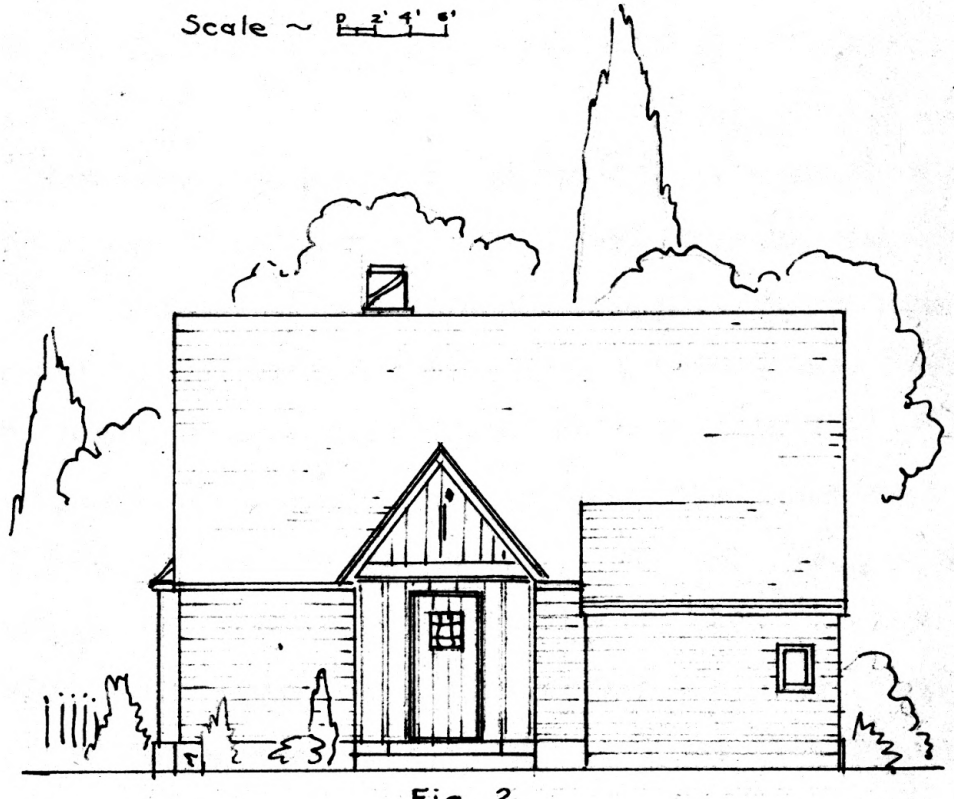


Fig. 2

covered by a simple roof and the entry was accented by the addition of a small gable. The alcove bay and roof over the porch offered an opportunity to implant distinction and individuality into the character of the house.

The plan was then studied in line drawing. Particular attention was given to the sizes of the rooms and the placing of the fixed equipment such as the beds, dressers, closets, bath fixtures, dining table, kitchen sink and range. (See Figure 3, Plate V.)

With this more accurate plan and the sketch elevations at hand the line elevations were prepared. Care was taken with the study of floor levels and ceiling heights. (Plate VII.)

The next step was the preparation of a small scale perspective of the house. A reversed tracing was made of the plan and the perspective and the two composed on a sheet of illustrator's board. The tracings were "rubbed off" on the board. This process brought out the original arrangement of plan and perspective. The rub-off was then shaded with a soft black pencil, trees, shrubs, and surroundings were added to make a pleasing presentation drawing. The sketch on illustrator's board was then reduced by photography to meet the needs of this thesis. (Plate VIII.)

Plate VIII.

A perspective sketch and plan of a small house developed from an apartment plan.

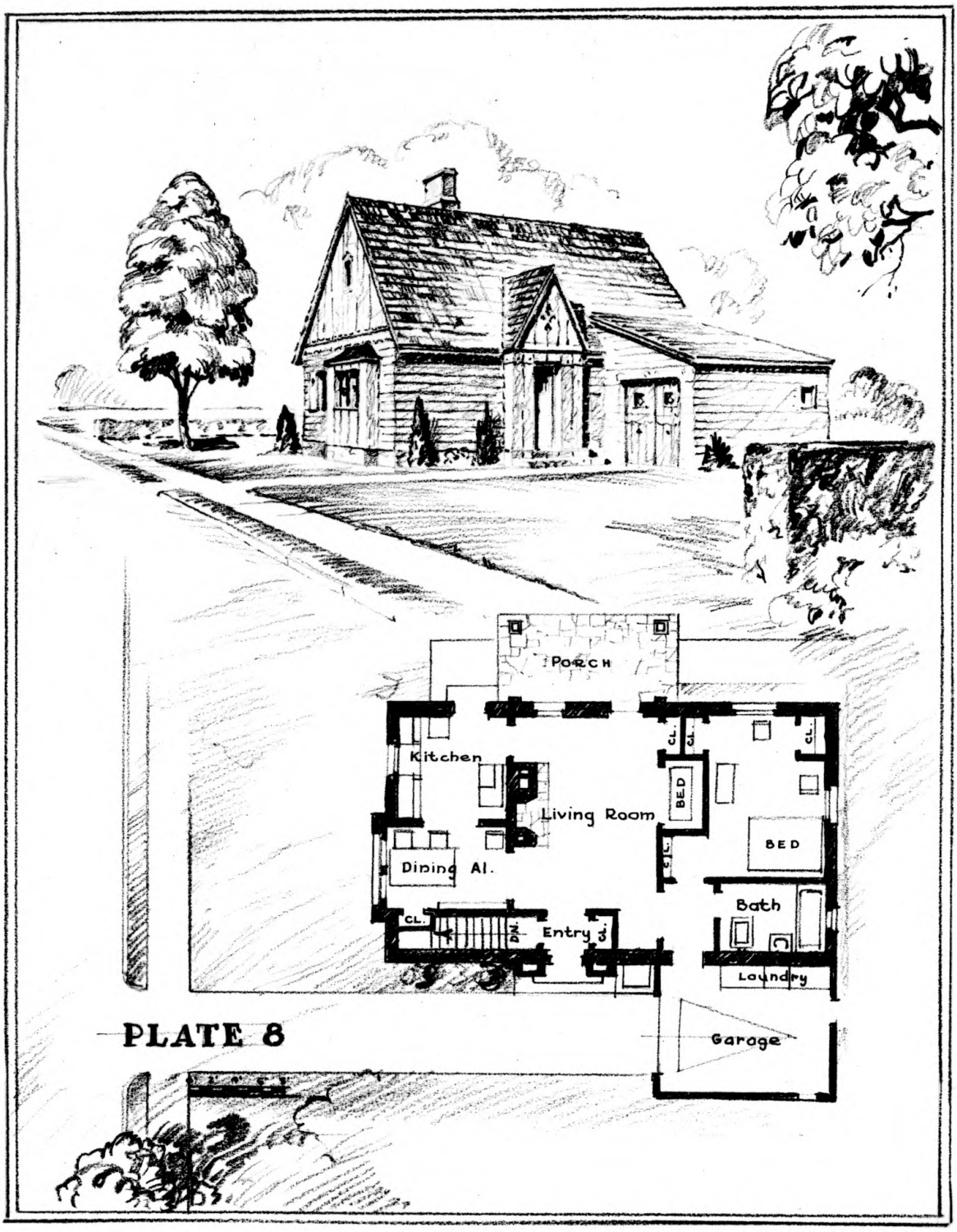

Porch
Kitchen
Living Room
Dining Al.
Entry
CL.
BED
BED
Bath
Laundry
Garage

PLATE 8

SEVERAL SMALL HOUSES

In this section I have brought together the results of study on this problem in the form of several small houses developed by the process just described.

These houses are not attempts to develop a minimum small house, nor a cheap house, nor a house for any particular family; but rather they are shown as possibilities for various types of families and as studies of the problems of home planning.

A wealthy middle aged, or elderly, couple might find such a home suitable. A young couple, husband and wife employed in the city, might desire a suburban home. Each family seems to need a different application of the principles in the designing of their home.

A statement of the cost of these houses has been avoided because of the flexibility of this factor. Five years time may increase or decrease the cost of a home one third or more.

Quoting an article in the Fortune magazine, "It is a proven rule of thumb that no family should attempt to buy a house costing more than twice its annual income". Following that, "Families in the lower third cannot buy

Plate IX.

A perspective and plan of
a small house without a basement.

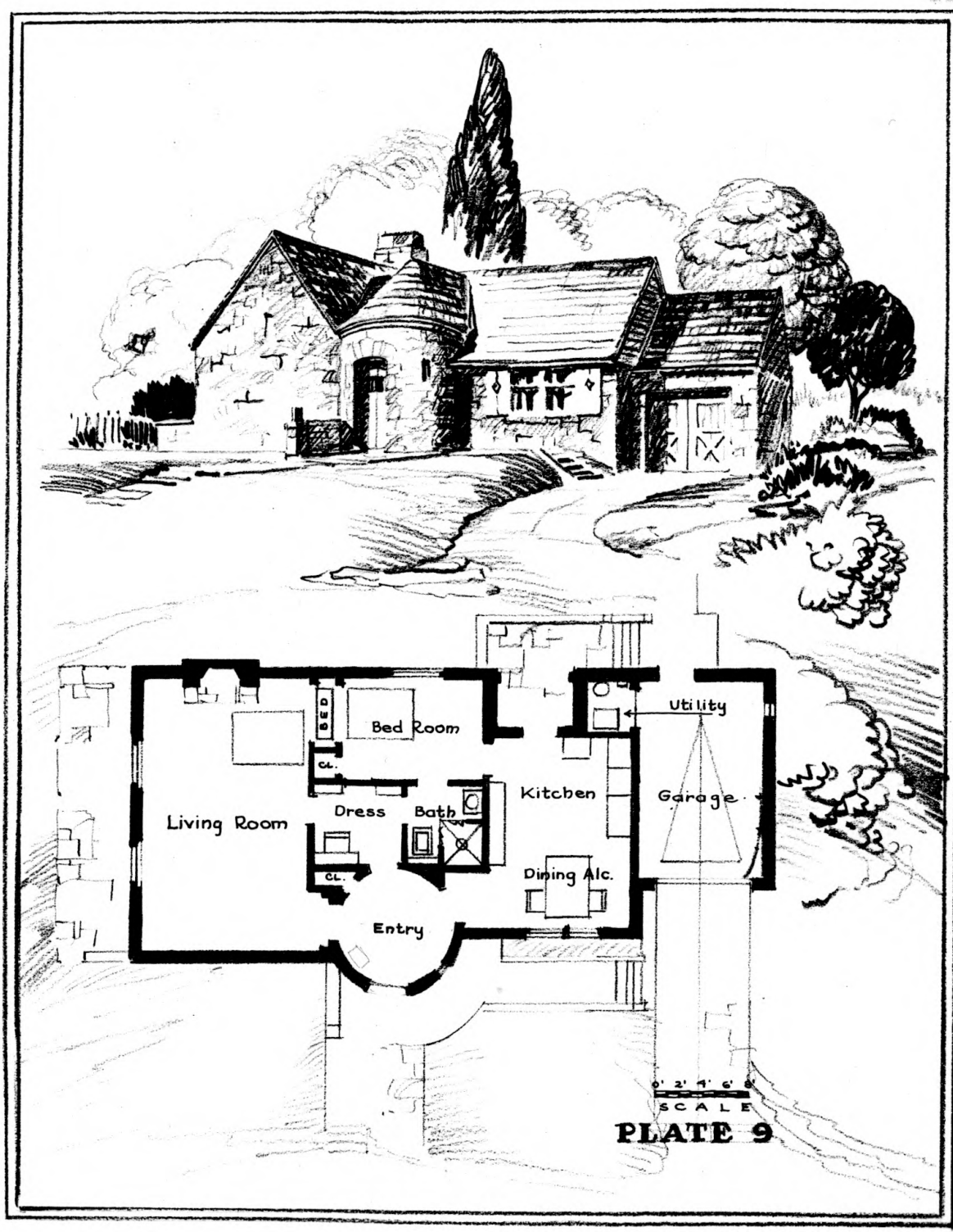

BED
Bed Room
CL.
Utility
Kitchen
Garage
Living Room
Dress
Bath
CL.
Dining Alc.
Entry
0' 2' 4' 6' 8'
SCALE

PLATE 9

houses costing more than $2,400. ------- Families in the middle third cannot buy houses costing more than $4,000. ------- If the industry could build a good house for $4,800 it would add 60 per cent to its small-house sales in its present market. ------ If the industry could build a good house to sell for $3,000 it would double its post-War residential output".

Some of the houses which follow could be built today for the amounts signified above.

The small house shown on Plate IX has no basement. The heating is taken care of by a small gas or oil burning boiler situated in a small utility room in the garage. The floor level here is necessarily considerably lower than throughout the rest of the house.

The other rooms may all be reached directly from the round entry. This round room becomes a feature of the elevation as well as serving the purpose of the hall. The kitchen and dining room are combined into one large room. The bath and dressing room is located so that ventilation would need to be controlled. It is equipped with a shower, built-in closets, and a dressing table. The bed room should be equipped with a day bed. The combination folding bed would then serve either the bed

Plate X.

A perspective sketch and plan
showing the effect of reversing the plan and
changing the building material of the house shown
on Plate IX.

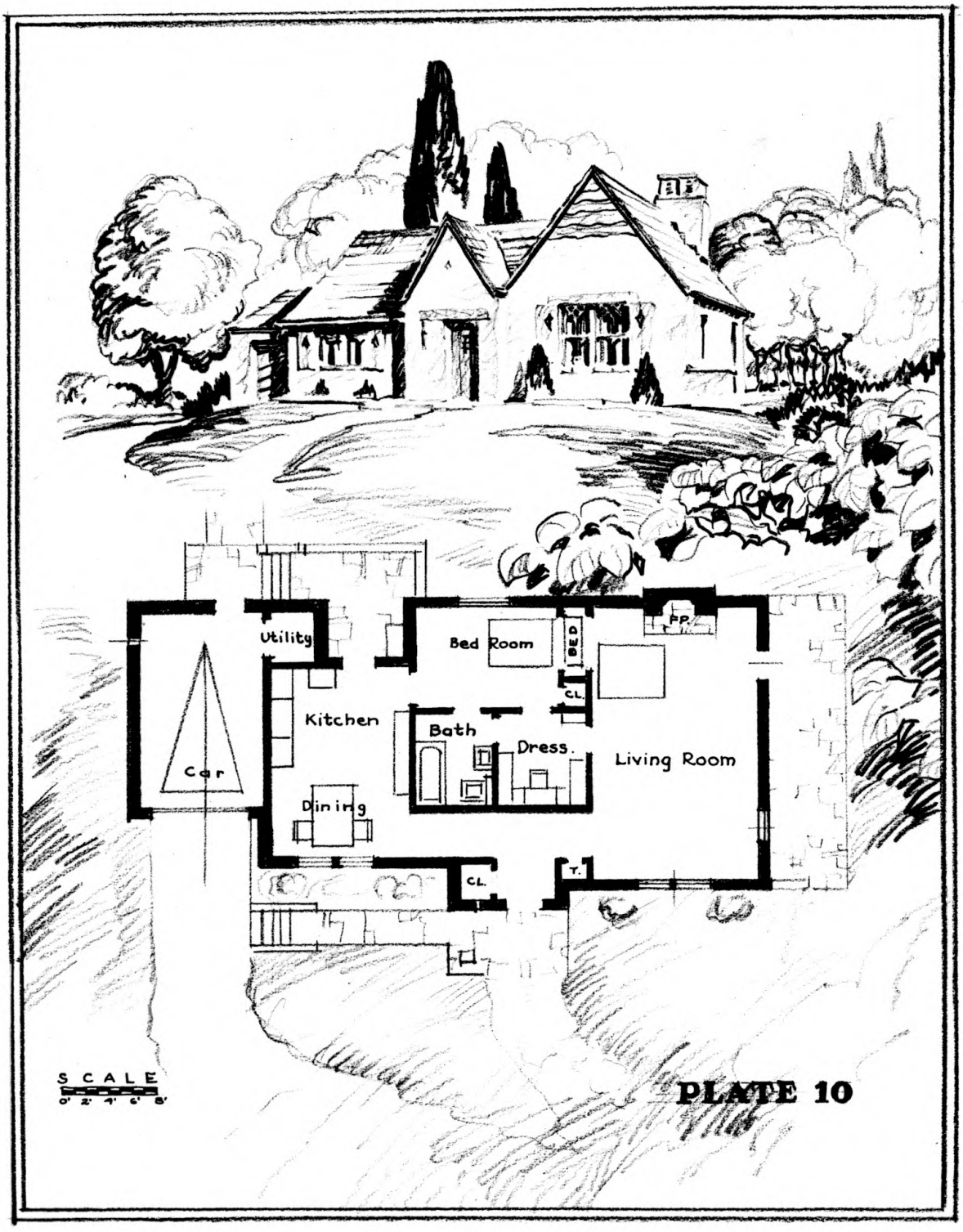

Utility
Bed Room
BED
CL.
P.P.
Kitchen
Bath
Dress.
Living Room
Car
Dining
CL.
T.
SCALE
0' 2' 4' 6' 8'

PLATE 10

room or living room in the event of guests. The bath is available from both sleeping quarters. The bed room could be equipped with a fixed full sized bed and the living room with a simple recessed folding bed. Another arrangement would make use of the bed closet space for a clothes closet. The guests would occupy the bed room and the owners rely upon a davenport bed in the living room.

The house shown on Plate X was developed by reversing the plan of the house on Plate IX. A few minor changes in the entry in plan and a change of the indication of materials used gives this house an entirely different outward appearance. The living room was opened on the front by adding a large window. In other respects the house has the same features as the house of the round entry.

Architects and contractors have known and used the method of reversing the plan for many years. A number of apparently different houses may be developed from one plan by judicious use of detail and building material. A very pleasing exterior wall texture could be obtained for small houses by the use of ordinary hollow tile, as facing, finished with white paint. The horizontal markings in the tile and the irregular mortar joints would lend to the effect.

Plate XI.

A perspective sketch and plan of a small Spanish house which has a basement.

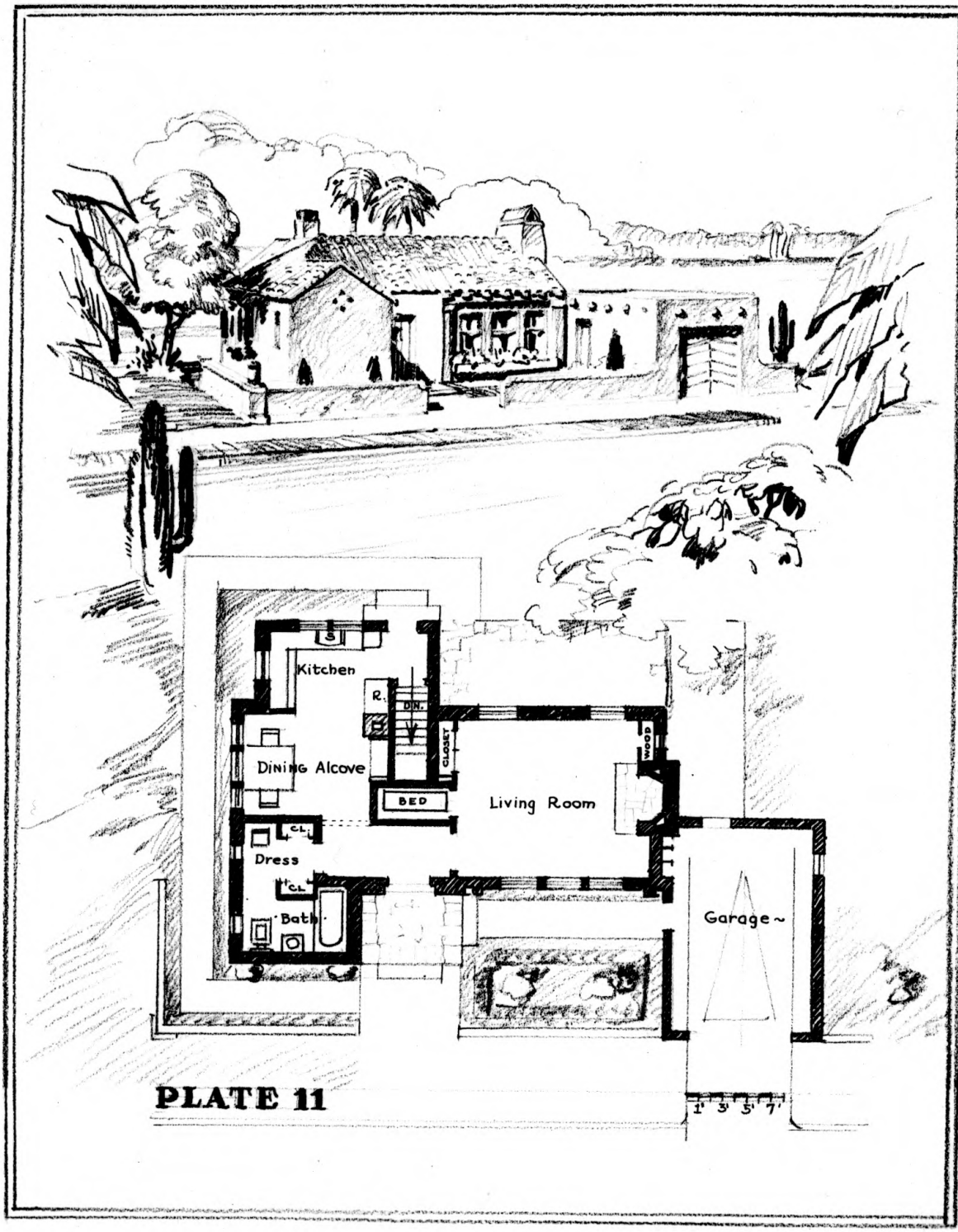

S
Kitchen
R.
DN.
CLOSET
WOOD
Dining Alcove
BED
Living Room
CL.
Dress
CL.
Bath
Garage
1' 3' 5' 7'

PLATE 11

Plate XII.

A perspective sketch and plan showing the effect of reversing the plan of the house shown on Plate XI.

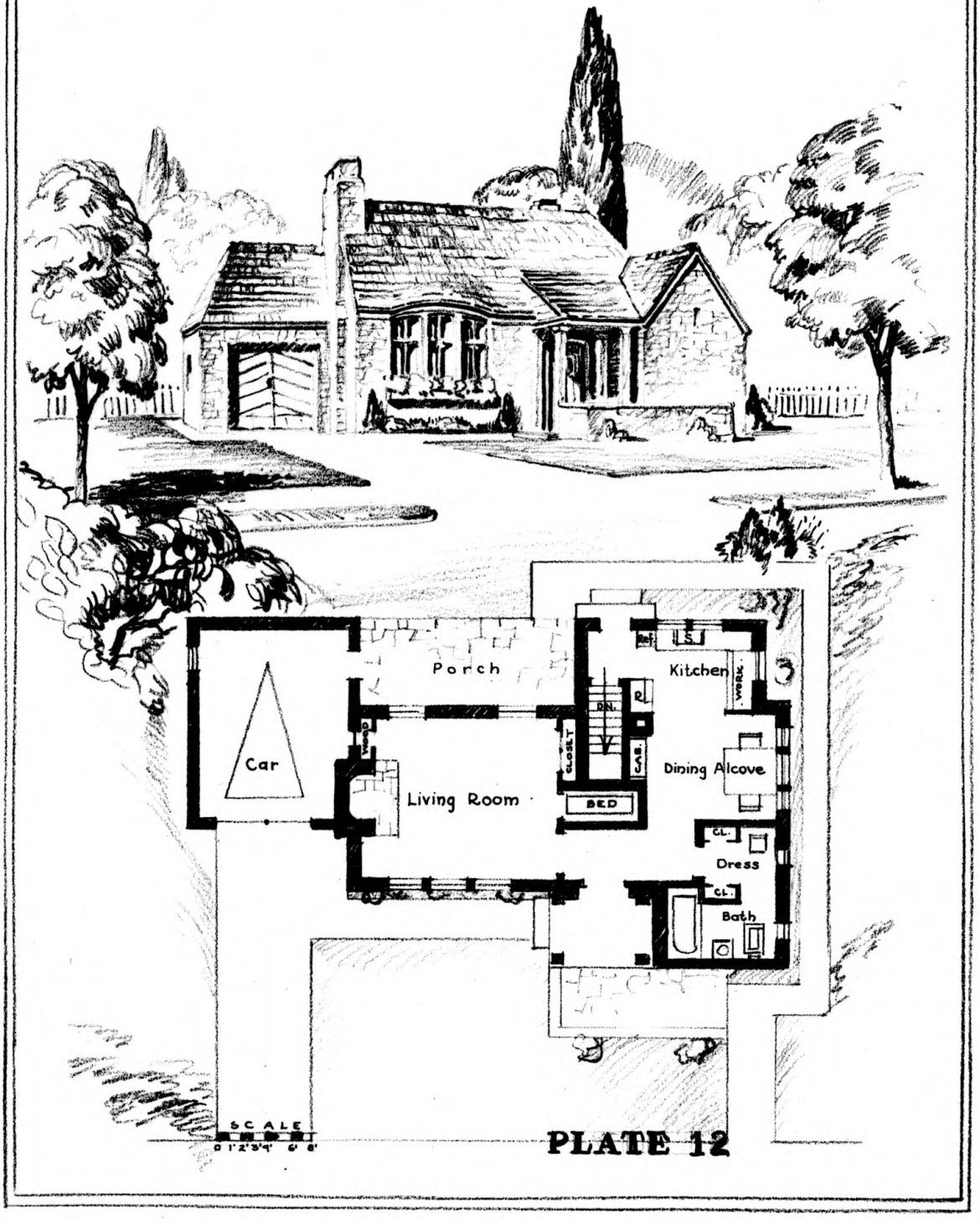

Porch
Kitchen
Ref.
L.S.
WORK
DN.
R.
CLOS.T
SAB.
Dining Alcove
Car
Living Room
BED
CL.
Dress
CL.
Bath
SCALE
0 1' 2' 3' 4' 6' 8'

PLATE 12

Plate XI illustrates a house in the Spanish style for a family of two. This house has a basement. The basement may be entered directly from the rear entry. The direction of the stairs permits easy access to the basement when carrying objects in and out. The area under the dining room and bath would be best for the basement. The furnace and kitchen range would be vented through a small stack. The fireplace fuel could be handily stored in the space indicated near the rear garage entry. The garage is at the front where it is easily reached. The roller-type folding bed might be quickly moved to any part of the living room. The living room has excellent light and air. A compact bath and dressing closet is close to the entry, living room, and kitchen. The kitchen and dining alcove are combined in a comparatively large space. The sketch shows a flower court in front of the living room window. This type of architecture is favored in all sections of the States but is best adapted in the south-central and south-western parts.

The house shown on Plate XII is a reverse of the preceding plan. The garage has been moved back from the street and the fuel box for the fireplace now opens through the wall into the garage. The living room has a high

Plate XIII.

A perspective sketch and plan of a small house
on a terraced lot in the
contemporary style.

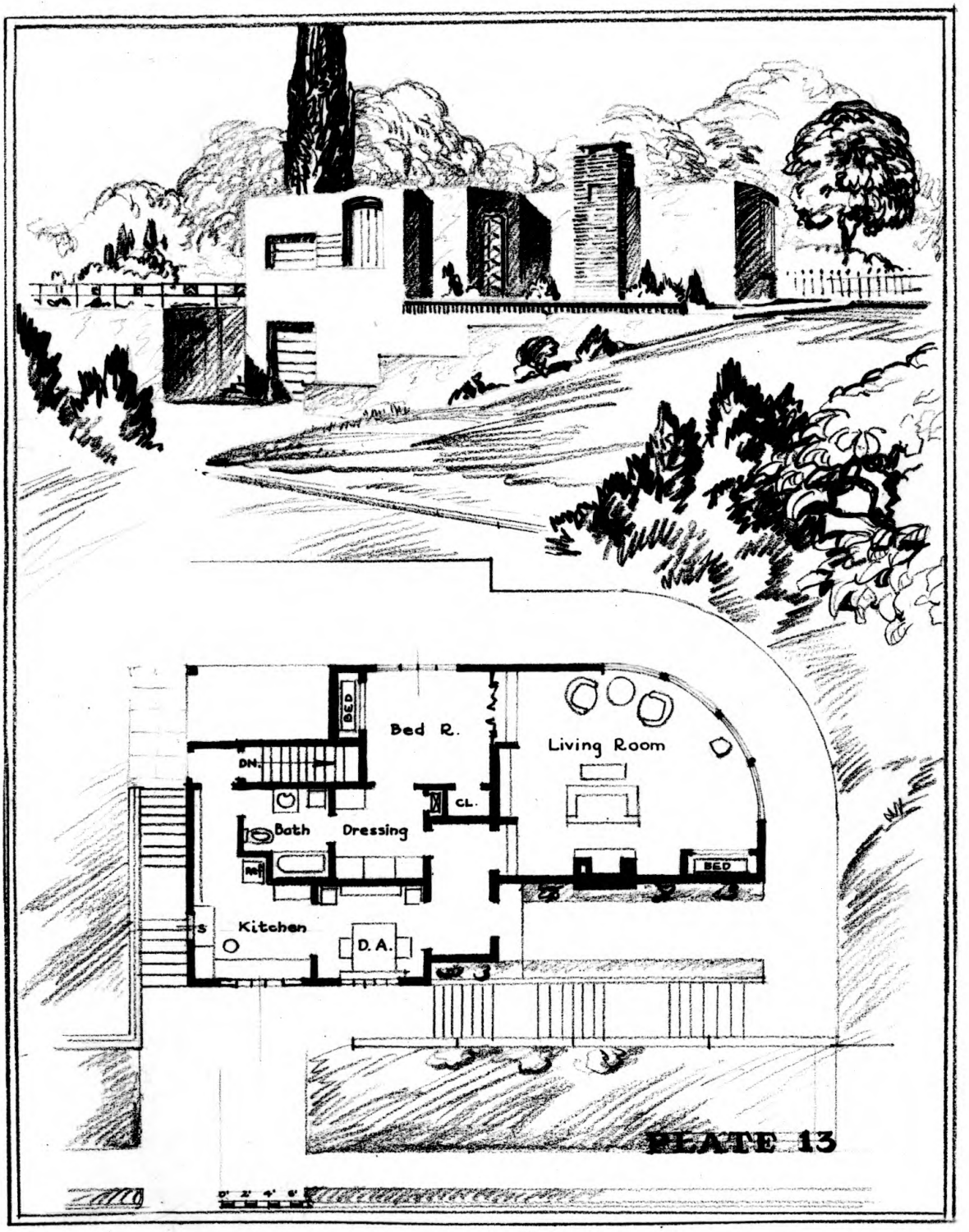


PLATE 13

beamed ceiling - a sort of studio living room. The entry has been roofed to add interest at that spot and the living room front windows have been elongated and arched.

This plan would accept an addition of two bed rooms very easily. The bed closet would have to be eliminated and a stair going up over the basement stairs would be added. The upstairs bed rooms would cover the area from the bath to the kitchen. The downstairs bath and dressing room would become a part of the dining room. A small bath would be added upstairs. A novel treatment of a balcony looking down into the studio living room could be worked out if desired.

When suburban lots are laid out and streets are cut in hilly districts the terraced lot becomes a problem for the builder. In many ways it has advantages over other lots. The sewage often drains much better since the drop is greater. The garages may be placed in the basement.

Such a house has been worked out on Plate XIII. It has a basement garage and furnace room on the lower level. Steps enclosed by retaining walls of concrete carry one up to the living room floor level and main entry and to the kitchen entry. This plan is supplied with one bed room but the living room contains a folding bed which could be

Plate XIV.

A perspective sketch and plan of a small house planned to accept the addition of a second floor.

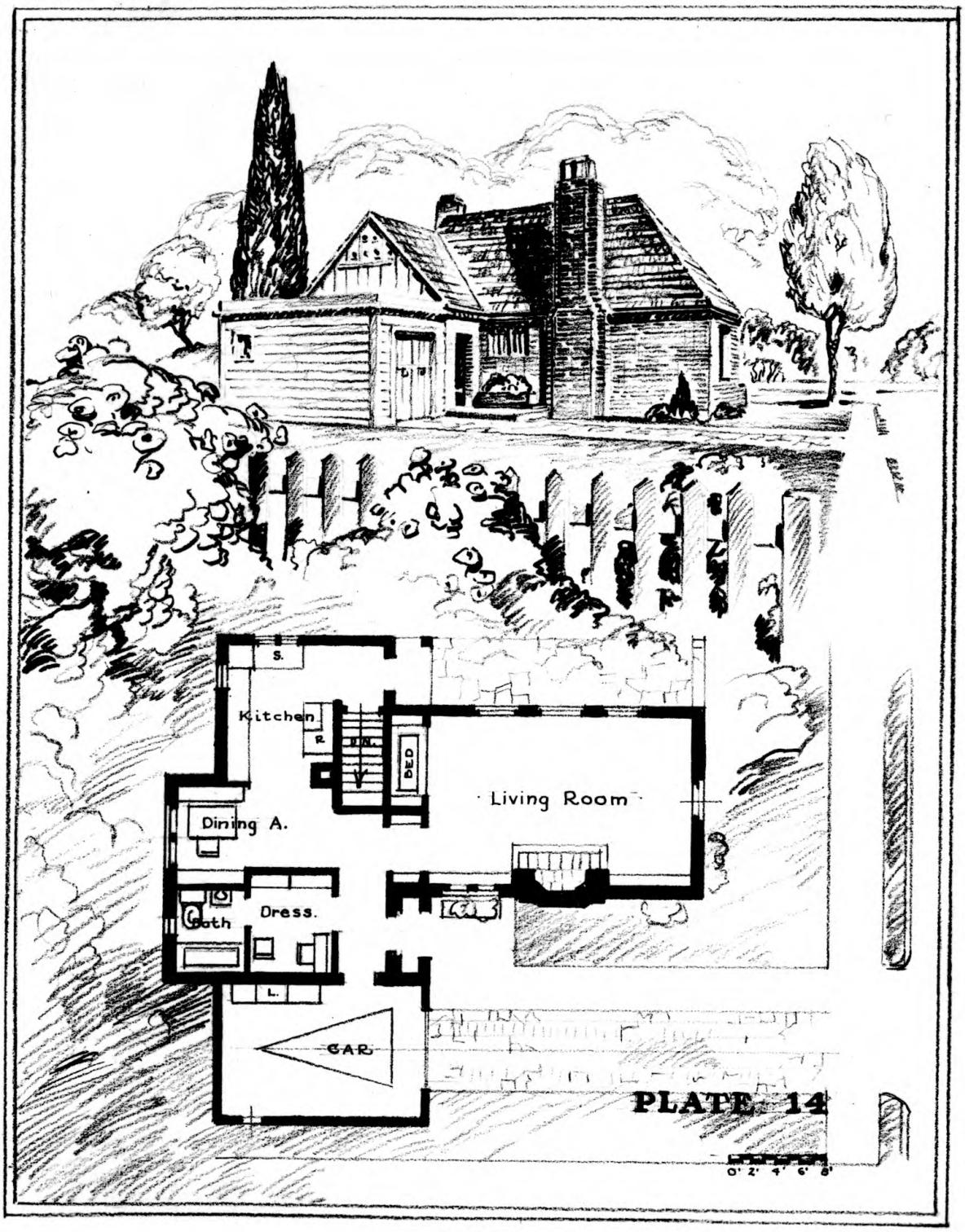


PLATE 14

used by the owners when they give the bed room to guests. The living room floor level is indicated somewhat lower than the other floors. The bath and dressing room may be entered from either bed room or from the kitchen or the exterior. A series of large windows displays a wide vista from the living room. The dining alcove and kitchen overlook the street.

This house could be constructed of thin concrete walls, slab roof and slab floors. The fireplace chimney of long flat brick would contrast admirably against the blank wall of the living room. By simple use of steel framed windows, metal roll-up garage door, and bricks set in the concrete parapet, the exterior of this house could be made very interesting. By adding a metal exterior stair, part of the roof might be used as a sun porch.

Plate XIV shows a house designed with the intention of making an addition of a second floor containing several bed rooms. The house has merit in the entry hall which serves all rooms and the garage. The rear entry is adjacent to the basement stairs and the kitchen and dining alcove are quite spacious for a family of two. The living room is large and contains a closet large enough for a bed and storage space for clothes. The laundry in the garage is

Plate XV.

A perspective sketch and second floor plan of a house developed from the plan on Plate XIV.

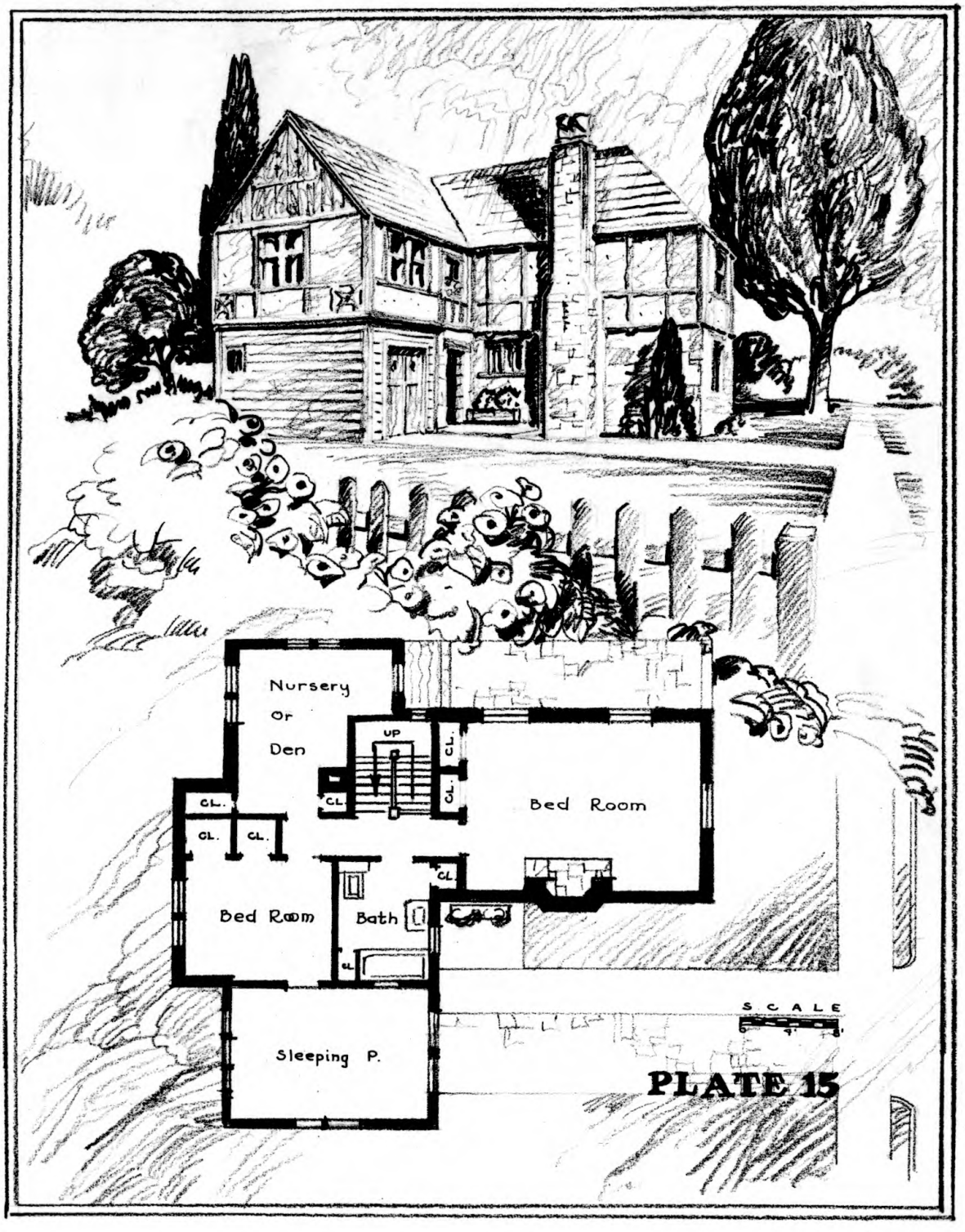

Nursery
Or
Den
UP
CL.
CL.
CL.
CL.
CL.
CL.
CL.
Bed Room
Bed Room
Bath
Sleeping P.
SCALE

PLATE 15

near the bath room fixtures.

Three bed rooms, a bath, and sleeping porch may be added on the second floor of this house by the use of the plan shown on Plate XV. The same roof covers the building with the exception of that part over the sleeping porch. The upstairs bath, opening into the hall, is available from any bed room. The sleeping porch over the garage in this house is an optional feature and the small bed room might be used as a den.

With such a change the lower floor would contain a large living room and a large dining room. The kitchen could be enlarged or left intact.

Plate XVI illustrates a small stone house on a terraced lot having a garage and boiler utility room on a lower floor level. The living room floor level is raised slightly above the floor level of the rest of the house to give extra height over the garage space. The living room opens on a flagstone porch. This room becomes a bed room at night. The dressing room and bath are minimum in size.

Plate XVII has been added to show how a pretentious mansion might be developed from the preceding small stone house.

Plate XVI.

A perspective sketch and plan of a small house on a terraced lot.

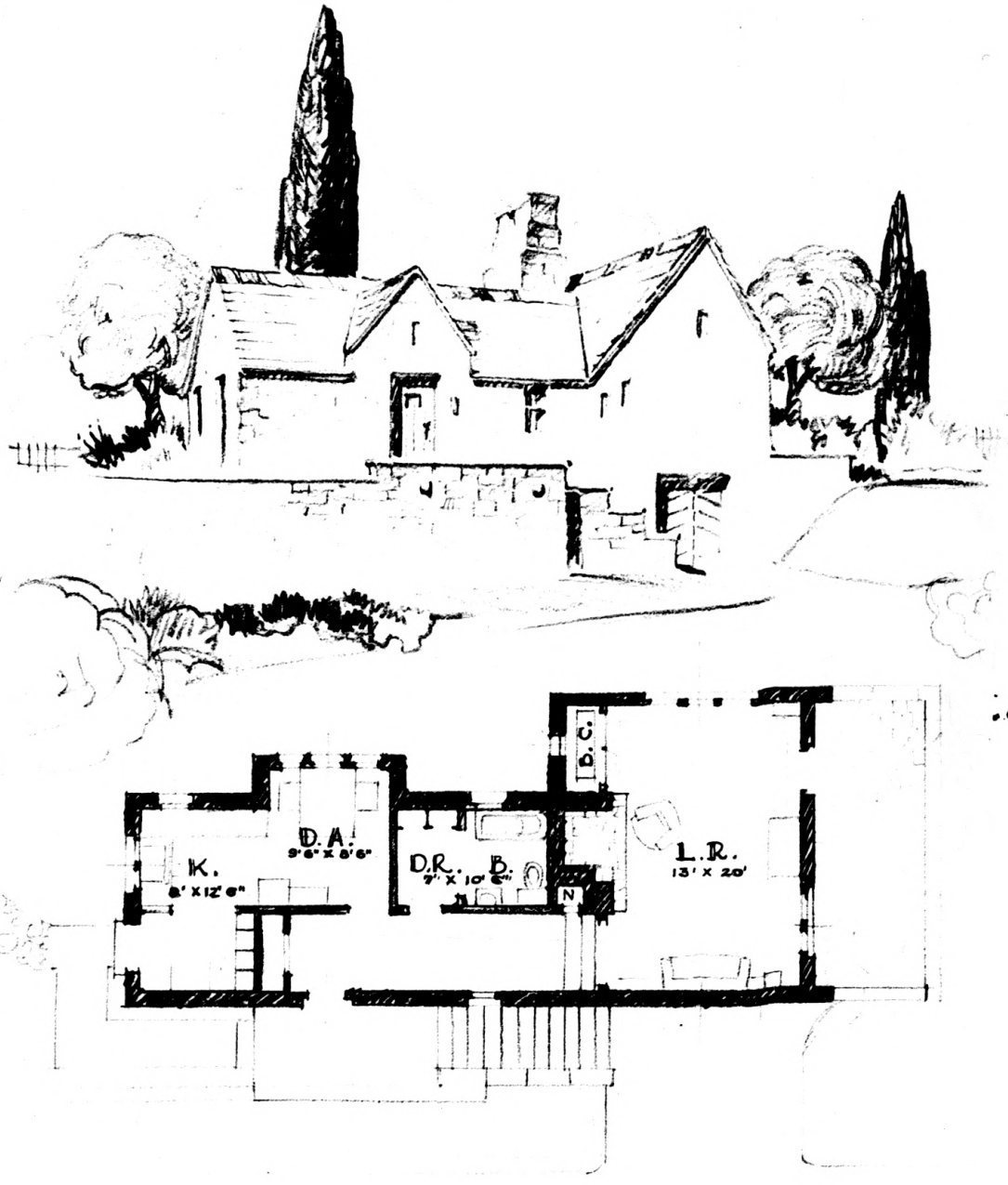


PLATE - 16

0 4 8'

Plate XVII.

A perspective sketch and second floor plan showing a possible addition for the house shown on Plate XVI.

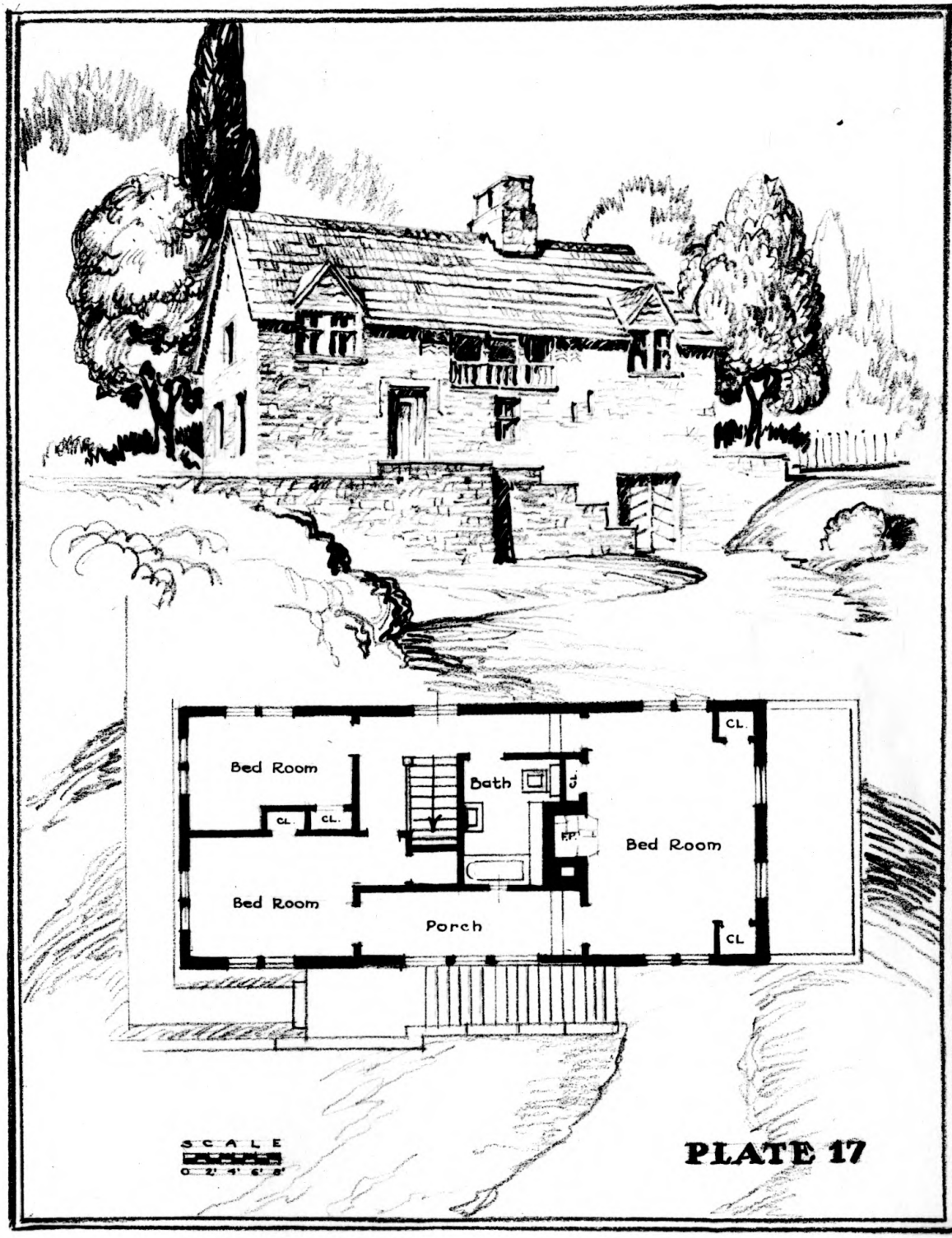


PLATE 17

Building the original small house with a temporary frame rear wall would enable the enlargement of the first floor rooms. The kitchen would become a long narrow room with plenty of wall space and a large pantry. The dining room would be adjacent to the kitchen and entry hall. The hall would also serve the living room, the stairs to the second floor, and the downstairs toilet. A small den or library could be worked in next to the living room.

On the second floor there would be two small bed rooms opening into the hall, a bath, a large bed room, and a porch as indicated by the plan on Plate XVII.

* * * * * * *

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REFERENCES

Books

Brinckloe, William Draper. The Small Home. Robert McBride and Co.; 1924. 223 pp.

Le Corbusier. The City of Tomorrow. Translated and published by John Rodker, 1927; Richard Clay & Sons, Ltd. 301 pp.

Le Corbusier. Towards a New Architecture. Richard Clay & Sons, Ltd.; 1927. 289 pp.

Sexton, R. W. American Apartment Houses. Vol. 1 and Vol. 2. Architectural Book Publishing Co.; 1926. 268 pp. and 330 pp.

Periodicals

The American Architect. May 1931. p. 24; Vol. CXXXIX

The American Architect. Sept. 1930. p. 60; Vol. CXXXVIII

The American Architect. May 1932. p. 16; Vol. CXXXI

The Architectural Record. January 1932. p. 125; Vol. 71, No. 2

The Architectural Record. March 1932. Vol. 71, No. 3

The Architectural Record. January 1932. p. 51; Vol. 71, No. 1

REFERENCES - concluded

American Institute of Architects File

Murphy Cabranette Kitchens A.I.A. 35 C 12

Dinofold Equipment A.I.A. 35 N 9

Murphy Door Bed Co., Blue Print Manual 35 N 9

White Door Bed Co. 35 N 9

Crane. New Ideas for Bath Rooms. Published 1926

Modern Home Interiors. National Lumber Mfg. Assn.
A.I.A. 19 e 7

Premier Standardized Woodwork Catalogue No. 5
A.I.A. 19 e 7