

**IF YOU  
WANT TO BUILD A HOUSE**

**BY ELIZABETH B. MOCK**

**Illustrated by Robert C. Osborn**

**THE MUSEUM OF MODERN ART**

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*the direct approach*



*the indirect approach*

*“And why need we copy the Doric or the Gothic model? Beauty, convenience, grandeur of thought and quaint expression are as near to us as to any, and if the American artist will study with hope and love the precise thing to be done by him, considering the climate, the soil, the length of the day, the wants of the people, the habit and form of the government, he will create a house in which all these will find themselves fitted, and taste and sentiment will be satisfied also.*

*· “Insist on yourself; never imitate.”*

*Ralph Waldo Emerson—Self-reliance*

## NEEDED-A FRESH APPROACH

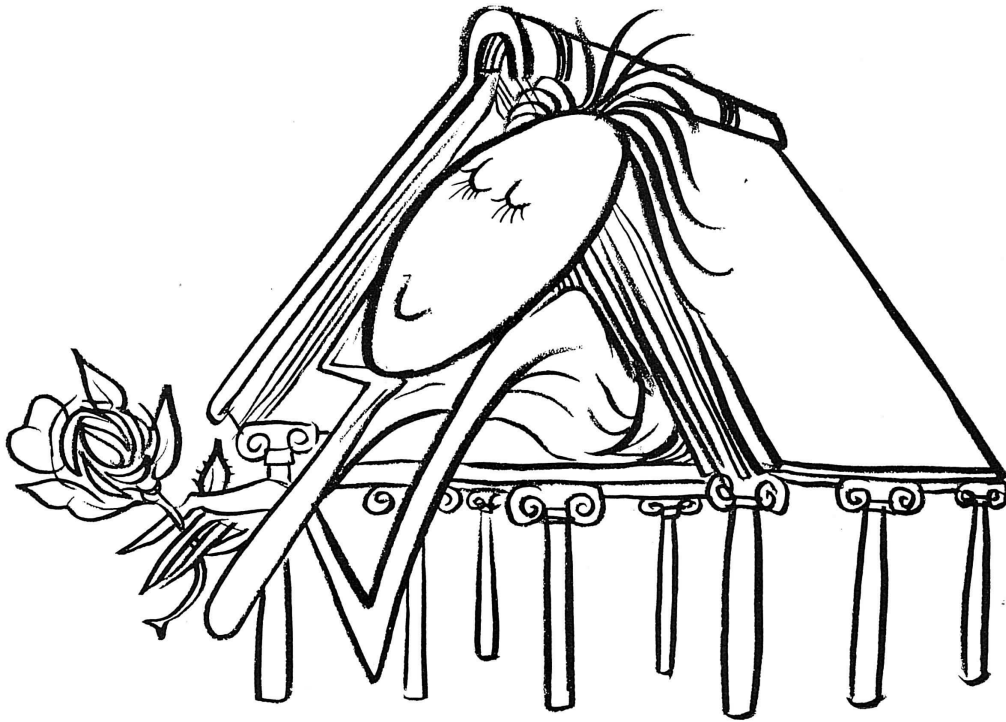
If you are going to take the trouble to build, rather than do the easy thing and buy a ready-made house, it is probably because you want something which in every sense will be your own. You won't get that through imitation. The very word implies a sacrifice of integrity, therefore of individuality. Much more is involved than a choice of external style, for true individuality obviously is more than skin deep. It isn't applied from without. It grows from within.

Don't think of your house as an impersonal shelter of so-and-so many rooms, tucked behind a conventional false-front, but as an outgrowth and expression of the best conceivable pattern of your life. Since the satisfaction of the solution will largely depend upon your awareness of your own needs, you should make your own program. An architect is only secondarily a psychiatrist. Houses are complex organisms and a good one is the joint creation of an alert, enlightened client and an able, sympathetic architect.

It's hard to think freshly about anything as mixed up with emotion and tradition as a house. It's easier to think down an accustomed groove to an accustomed end, even when one suspects that the old, familiar answers are pretty meaningless. Prejudices may be fine and sacred things, but before you sacrifice to them it's wise to make sure that they are your own and not other people's.

Not only direct thinking is needed, but direct seeing as well. That is even more difficult. We rarely see the actual substance of the buildings around us because we're always looking beyond them for a story. The air gets thinner and thinner as we close our eyes to reality and move into a world of symbols. We get English castles for colleges, Italian palaces for banks, Spanish villas for filling stations, and houses which try to look as though they had been built two hundred years ago in New England. Architecture, literature and sentimentality become hopelessly confused. The method of approach could scarcely be more oblique, or the results more phony. That wasn't true of the originals. Real Colonial (or Tudor or Spanish) buildings were direct and vigorous because they were authentic in their time and place. They were the modern architecture of their day. Authenticity is the one quality which can't be duplicated by even the most adroit copyist. Either a thing is real or it isn't real, and it should not be difficult to make the distinction.

Some people choose the Colonial style because they honestly love it, others because it is a smug acknowledgment of good taste. But too many people choose it



*“Architecture, literature and sentimentality  
become hopelessly confused.”*

because they like some of its characteristics—white clapboards and a feeling of snugness, for instance—and fail to realize that they can have the same things in a house which doesn’t masquerade as an antique, and without paying for a lot of related trappings which they don’t really want.

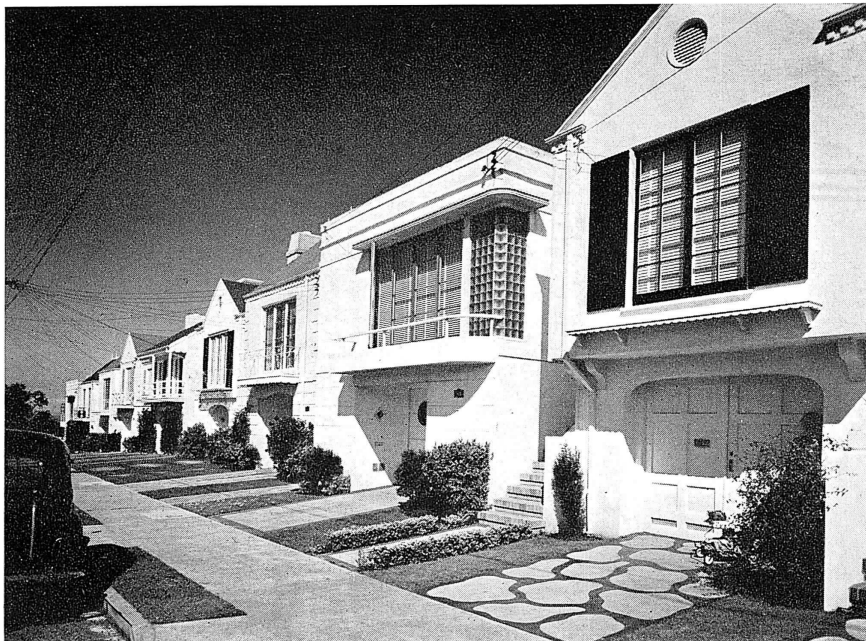
Think of how you wish to *live* and leave the actual solutions to the architect. If you choose a good one the results will be much more satisfactory than if you insist on specific forms and details. Think of noise and quiet, of sociability and privacy, and try to define their relationship to each member of the family. Think of how much sun and light you want, and how much of a feeling of openness to the outside. Think of outdoor living and the most desirable degree of seclusion from street and neighbors.

### **choosing an architect**

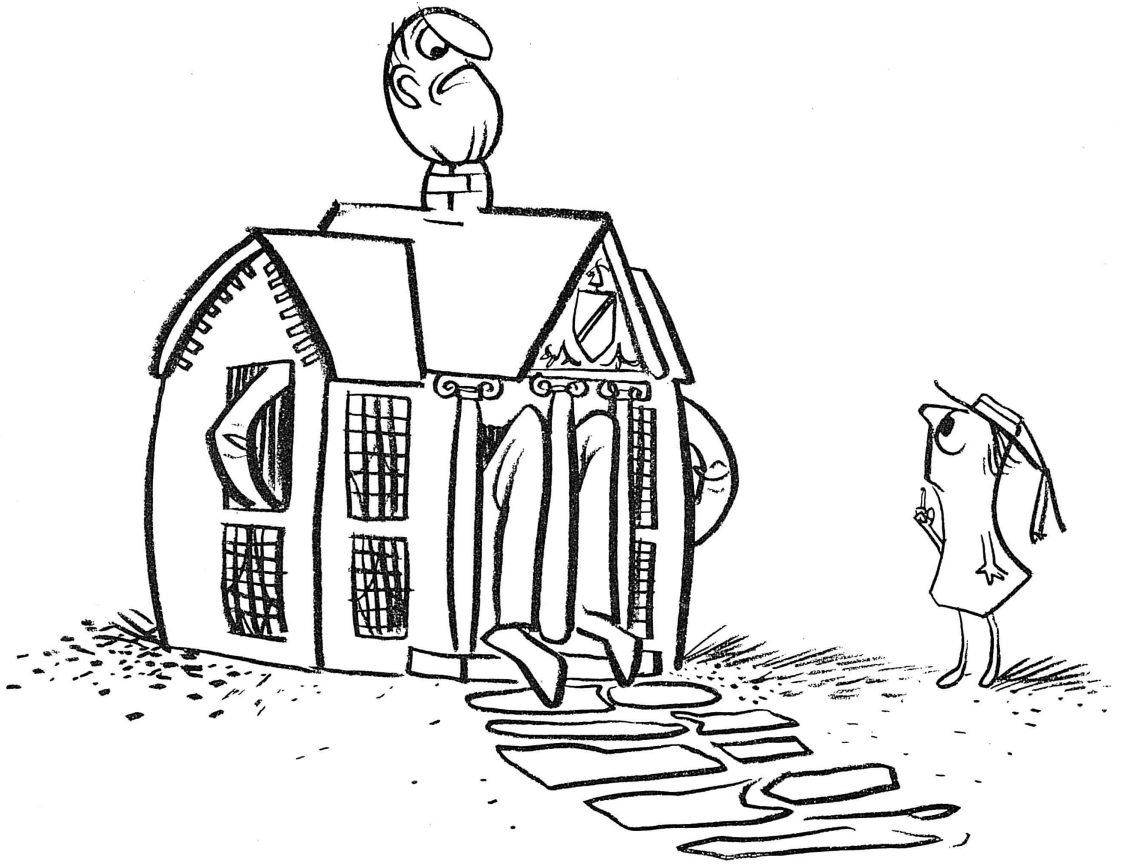
The most delicate part of your job as client will be the selection of an architect. Don’t think that you will save money by going directly to a builder and using an adaptation of one of his stock plans. A good architect will give you a much

better house, often for considerably less money—even including his fee. If this sounds implausible, consult page 94. However, there are innumerable genial, expensively educated architects of wide experience, impeccable honesty and considerable technical ability who could not be called “good” as the term is used here. For one must also demand a fresh and human approach, a sensitivity to materials and proportions, and the ability to conceive a building in its three full dimensions rather than as something drawn on paper. These are stiff requirements and they rule out not only the old-line traditionalists, but some who choose to consider themselves modern. Many architectural offices which before the war confined themselves to the safety of historical styles are now eager to get on the modern bandwagon: “Reach in the second drawer, Joe, and we’ll put a flat roof and corner-windows on Number Twelve.”

Modern architecture isn’t that easy. It isn’t just another imitative style. It is an attitude towards life, an approach which starts with living people and their needs, physical and emotional, and tries to meet them as directly as possible, with the best procurable means. Otherwise there are no rules. The results will be as various as the range of materials offered, the human problems posed, and the creative talent employed in solving them.



False faces. No one is really fooled by the bad theater of the “Colonial,” the “French Provincial” and the “Regency,” but too many people believe that a flat roof, corner-windows and a chill suggestion of Superman make a house modern.



*"Too small . . . Grandeur reduced becomes absurdity  
. . . Cosiness becomes confinement."*

## THE QUESTION OF SIZE

The trouble with many small houses is that they're too small. Small houses have their virtues, but the house which is *too* small is virtueless beyond the bare fact of shelter. Far better not to build at all.

Before the war people were spending more and more time outside their homes. Usually the automobile is held to account, but wasn't it partly because the average house was tight and growing tighter? Space was sacrificed to mechanical equipment and each new gadget seemed to bring a reduction of floor area. Minimum space standards became a fetish, applied with almost equal enthusiasm to the minimum-cost housing project and the dwellings of the upper income group. Bathrooms, kitchens and bedrooms were most decisively affected by the cult of the minimum, but no part of the house escaped. Ceilings were lowered, corridors narrowed, stairs made steeper. Even when an unusually generous living room was offered as recompense, the total effect was often stingy.

It is the architects themselves who have been chiefly responsible for this esthetics of the irreducible, a snobbism no less dreary for its origin in humanitarian zeal and low-cost housing. By making mean plans workable, architects gave them the dignity of "standard practice." Nothing is easier to lower than a standard. And few things are more difficult to raise.

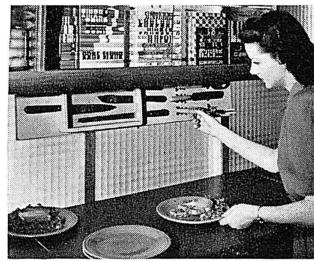
The architect who seeks new ways to tailor our large, restless and fumbling bodies into under-sized, over-specialized living quarters is doing us a gross disservice: the Pullman roomette may be a comfortable way to get across country, but let's not confuse it with gracious living.

Another trouble with small houses is that they're often not really small houses at all, but shriveled copies of pretentious mansions. Grandeur reduced becomes absurdity, and the Little King rarely cuts a regal figure.

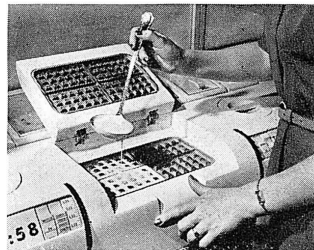
Since prices will be high until there are some drastic changes in building methods and financing (see page 94), your house will probably be smaller and simpler than you would like to have it. Therefore you will do well to recognize the fact that only the modern architect is *free* to use every inch of space to your greatest advantage, *free* to use new and more efficient materials and structural techniques, and *free* to give you at least a feeling of spaciousness if the actuality is unattainable. *Only in modern architecture is any serious attention given to the peculiar problems of the small house.*



We can't go back to the kitchen shown in this lithograph by Doris Lee.



But we needn't settle for a vitamin laboratory and gadgetry . . .



when we can work out more humane solutions. (Constantin Pertzoff: house in Lincoln, Mass. White-painted brick. Reddish wood shelves and cabinets, unpainted. Brass shelf-supports.)



## SPACE FOR LIVING

There is no universally palatable dream house, and it is this variety of interpretation which keeps architecture alive and prevents it from becoming hopelessly dull and standardized. But there is one thing on which almost everyone would agree: that each cubic inch must contribute towards good living.

Since the arrangement which is ideal when a house is built may be far from ideal a few years later, try to estimate your needs with an eye to the future. While planning the original house an architect can allow for future additions, subtractions and rearrangements by making it as easy as possible to change the position of walls and partitions, and it should soon be possible to buy soundproof, fully wired, easily movable partition units which might be set up as desired.

An open, inquiring mind will carry you a long way towards a sound program and a capable, interested architect will often bring order out of the most unlikely jumble of requirements.

### kitchen

It is said that the kitchen should be the pleasantest room in the house. Trite and true, but rarely tried. We've sacrificed space to equipment, convenience to meaningless "streamlining," ease and cheer to pseudoscientific planning. Perhaps the mistake came when we started thinking of the kitchen as a laboratory and confused the art of cooking with the science of food chemistry.

Obviously we can't go back to the old-fashioned kitchen, pleasant, ample and unaffected though it often was. But we can look at our "modern" models more critically. The average housewife is well aware of their antiseptic meagerness. Encouraged by the ladies' magazines, she resorts to ruffles and decalcomania Scotties in a desperate attempt at humanization.

Even the equipment is over-rated. Look at the refrigerator. Those deep, low shelves can't be the final answer to the cold-storage problem, and surely that rounded top, impossible to set things on, is not inevitable. Consider the knee-high ovens of the new counter-height stoves. If you find the old high ovens more accessible, remember that they are still on the market. And doesn't the insistence on a smooth, continuous counter-top multiply the difficulties of dish washing? Sinks and tubs become back-breakingly low and water sloshes over the flat counter and onto the floor. A revival of the drain-board may be in order.

What about the current mania for hiding everything in closed cabinets, even to the extent of providing a collapsible top for the stove? Again it is the superficial order of the slick, impersonal surface, achieved at the expense of reason and good cheer. Why should we fumble through cabinets to find an egg-beater or a small frying pan or a dash of vinegar? Pans and egg-beaters are as beautiful as they are useful. Why not hang them within easy reach, like tools above a workbench? Cabinets are dust-proof, a great advantage for infrequently used objects, but can't other things be kept in plain sight? Another weakness of our elaborate cabinets is their tendency towards over-specialization. A mop is a mop, not part of a jig-saw puzzle, and one should be able to replace it in a cleaning cabinet without great mental strain. Most of us would rather toss a knife into a drawer than hunt for the exact slot which will fit that particular instrument. Purposeful design can be carried too far: a place for everything and everything in its place, but only if you're sure you're that kind of housekeeper. Nevertheless, prefabricated interchangeable cabinets are a useful invention, and it is evident that manufacturers will soon be applying the principle to other items of kitchen equipment. The result should finally be more efficient, more individualized kitchens for a little less money.

A kitchen is more than the sum of its gadgets. It should be large enough for at least two people to work in without tripping over each other, as even a minimum kitchen should make allowance for part-time professional help. It might include a counter or table for children's meals and other occasional use, placed by a low window so that people seated there won't be brought up short by a blank wall, and there might even be rocking chairs for visitors, or for the cook. Indeed, if your life is completely casual and servantless, perhaps you will want to expand the kitchen into one large cooking-dining-living room, supplemented by a small, quiet and formal "parlor."

If you wish to work through the morning without undue resentment you will insist on cross-ventilation, and you will make sure that the room gets the sun from east or south. The sunny window might be embellished with flower pots or an herb garden.

Hard, smooth-surfaced materials are, of course, easy to clean, but that doesn't mean that the entire kitchen must look like the inside of an ice-box. Can't we achieve, in contemporary terms, something of the rich and warmly human dignity which still seems to characterize peasant kitchens all over the world. Or have we lost that respect for good cooking which is a prerequisite?

## dining

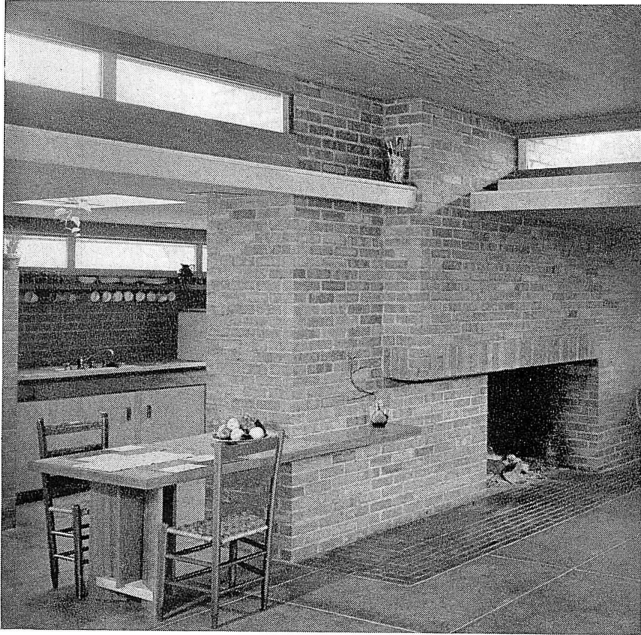
Another domestic activity which is fairly easy to consider is eating, for the average family approaches it with the greatest show of unanimity. A hungry family at its dinner table is a frighteningly single-minded group.

The modern architect has looked at the usual small-house dining room, planned and furnished to be useful only two or three hours a day, and found it conspicuously wasteful. He proceeded to think of ways in which dining space might become a more integral part of the house, without necessarily giving up the possibility of a formal atmosphere, and found many admirable solutions.

Since the small house is presumably servantless, the architect has been careful to keep a close relationship between cooking and dining. The main dining table is rarely in the kitchen, for most people like to get away from dirty dishes, cooking smells and hot stoves, and also like to have a cook for occasional entertaining. But the living, dining and cooking areas often open into each other. In some houses they are very pleasantly arranged in an ell so that the dining space becomes part of both, yet the kitchen itself is discreetly screened from the living room and from the main entry.

Perhaps the ideal solution is a table in the kitchen *plus* a more formal arrangement elsewhere. Sometimes there is a separate dining room, usually designed to serve also as library or play room. More often it becomes part of the living room, perhaps separated from it by a curtain or a suggestion of a partition so that guests won't see the table. In either event the standard sets of dining furniture seem out of place and the great sideboard, table and cabinets tend to be replaced by lighter, smaller, more anonymous pieces. Storage space is frequently built in and much of the china and glassware kept on open shelves by the kitchen.

Most families also want a convenient, semi-sheltered place for outdoor meals. The demand isn't limited to California. Even in mosquito-bitten New Jersey people are beginning to discover that an unscreened terrace is delightful for at least three months of the year, and if the new insecticides fulfill their promise, outdoor dining will become a national institution rather than a sporting event.

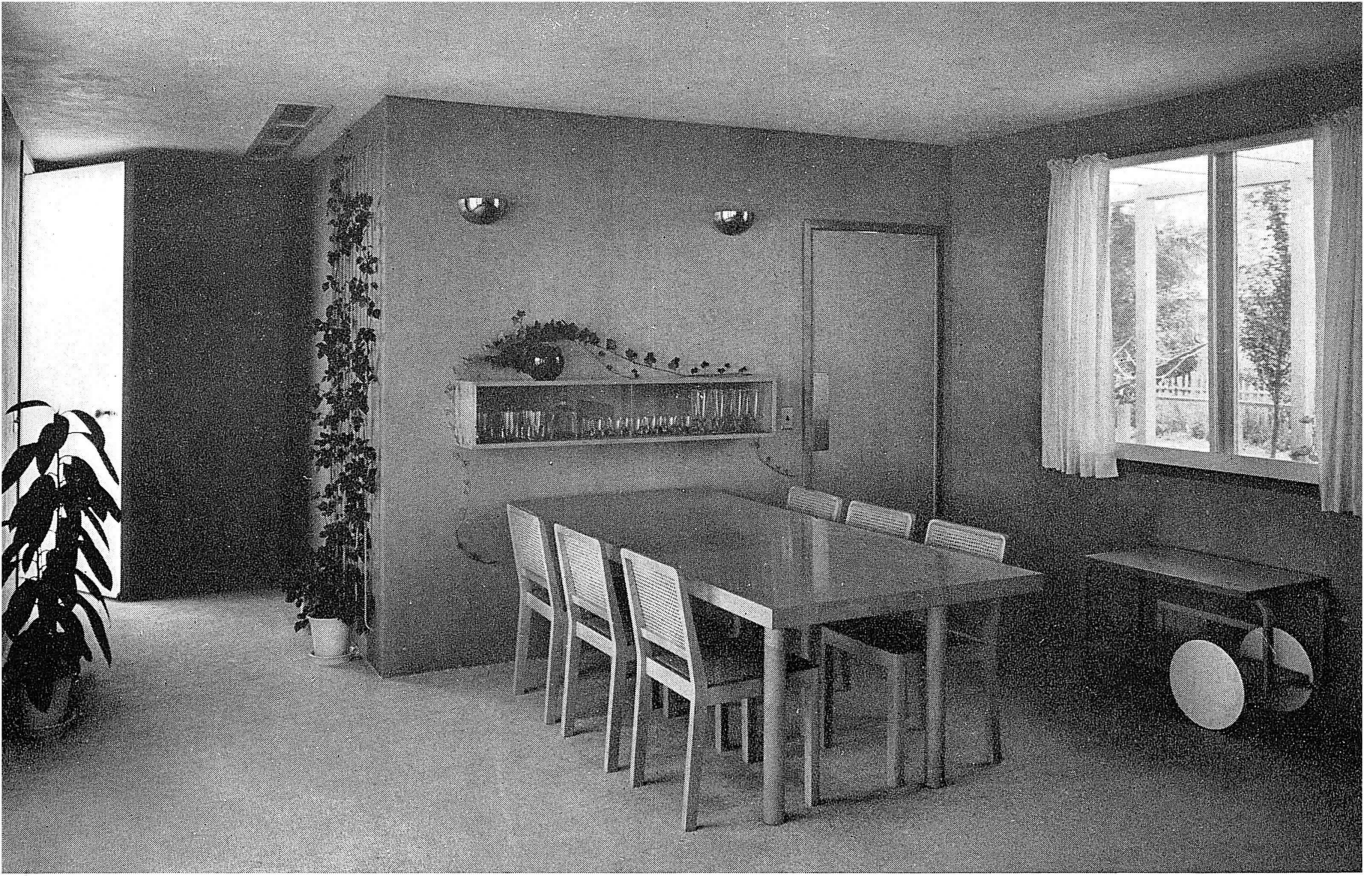


Left. Dining table between kitchen and living room. Notice the brick walls and the unusual window arrangement. (Frank Lloyd Wright: house in Okemos, Mich.)

Below. Dining space at end of living room, separated from the kitchen by open shelves. Brick floor. (Frank Lloyd Wright: house in Minneapolis, Minn.)







Above. The built-in dining table and light chairs become part of the general living space. Above the table is a hanging shelf with glass and greenery. (John Funk: house in Modesto, Cal.)

Right. Separate, formal dining room. The metal furniture was designed by Mies van der Rohe. (Philip Johnson: house in Cambridge, Mass.)

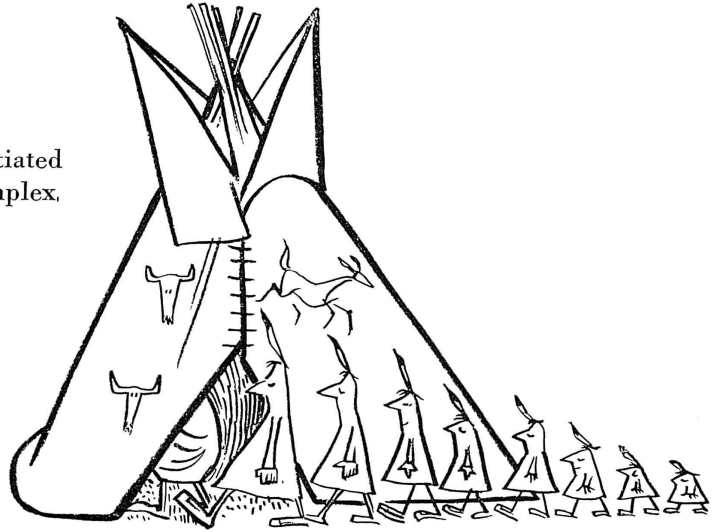




R. Osborn

Conflicts

Undifferentiated Indians entering undifferentiated tepee. Our requirements are usually more complex.



### “living”

Cooking and dining are comparatively uncomplicated. They have a beginning and an end, and can be fixed in space with no great stretch of the imagination. “Living” is another matter. It can cover quiet pursuits like reading, writing, studying, even sleeping, less quiet ones like conversation and polite music, messy ones like painting and playing and dressmaking, and noisy ones like dancing and singing and practically everything that young children think is really fun to do.

Remember that your family is made up of highly differentiated individuals, each eager to pursue his life under the pleasantest circumstances and with a minimum of interference. This means that *the real basis for house-planning should be the individual, not the group*. The extremes to which this principle might be carried are surely no more absurd than its complete disregard in conventional practice, where everything is divided on the formal, arbitrary basis of bedrooms, dining room and living room rather than in terms of the innumerable, overlapping, often conflicting activities of each member of the family. Both the right to make noise and the right to quiet privacy should be prominently listed among the civil liberties.

The average small house, modern or traditional, is a makeshift answer. When the children are young they tend to be all over the living room, leaving a dismal wake of building blocks, sticky chairs and broken chalk. When they are older there is the problem of where they are to entertain their friends, and more often than not it is the parents who must flee to the shelter of bedrooms ill designed for refuge.

There is not only the battle between the generations to consider, but the perennial struggle of the musical and the tone-deaf, the orderly and the disorderly, the retiring and the gregarious, and, of course, the war between men and women. Domestic stability is precarious enough without the unnecessary irritation of an unfavorable environment. The smaller the family, the easier the problem. A single



person, or a couple without children, servants or noisy avocations might luxuriate in one large room, divided only by curtains—a plan which would be no solution at all for less genteel, more normal requirements.

### **play room**

Take that very question of play and consider some of the ways in which it might be solved. Since small children need attention and the mother or maid will be spending a great part of her time in the kitchen, it seems reasonable to provide play space nearby.

The child's bedroom is a good possibility, but it is usually too small and too far from the kitchen to be an ideal arrangement for young children. Playroom and dining room are a possible combination, but if you wish to dine in civilized fashion the children must beware of the walls and furniture and must constantly be putting away their toys, even cherished long-term projects. Since the living room is ruled out on grounds of messiness, all that is left is the kitchen itself, or something outside the normal system of rooms.

One solution is to expand the laundry end of the kitchen into a small playroom which opens to its own garden court for outdoor play and clothes lines. Then the children, inside or out, are under the maternal eye. Modern laundry equipment is unobtrusive, and the wall and floor surfaces which are suited to a laundry are just as good for a playroom. At night, or when the children are older, the room would find other uses. It could serve as a darkroom, for instance, or a general workroom, or it could be used in conjunction with the kitchen as a setting for adolescent gatherings. There might be a comfortable chair for mending or reading.

Another scheme might be a large, multi-purpose room which would care for all the messy, noisy activities of every member of the family. Something like the cellar "rumpus room," but provided with all the light and air and sun which that so grievously lacks. It would be a big anonymous space which almost any family would find its own way to use, and it might accommodate anything from a workbench to a grand piano. It might be larger than the living room, which could then become a small haven of peace and social order.

### **bedrooms**

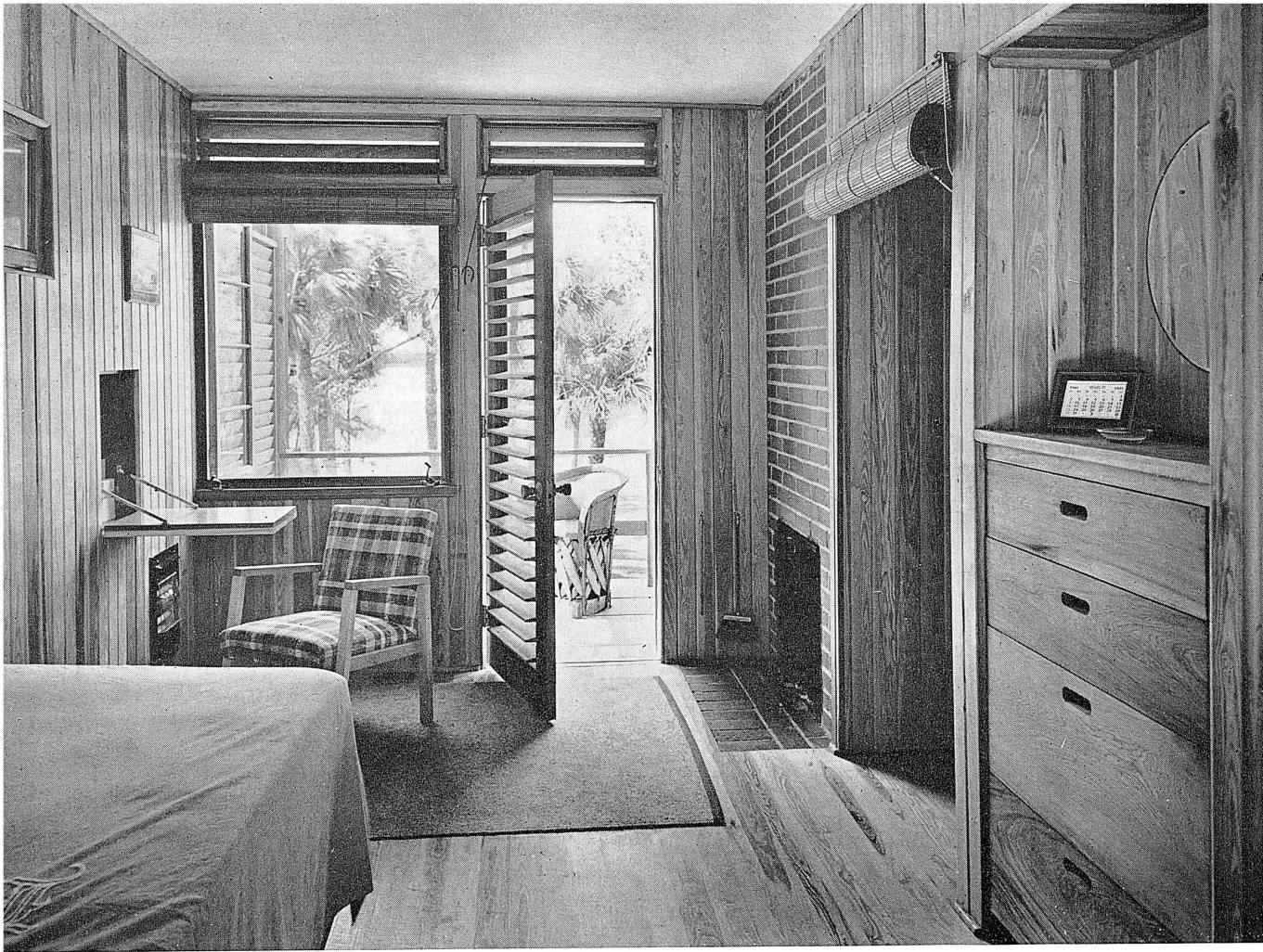
For the moderately serious escapist it is the bedroom which is the final refuge. Although "a room of one's own" is perhaps the greatest luxury which the small house can offer, little advantage has been taken of that fact. Even in sensibly designed houses the bedrooms are often too small, and suited only to sleeping and dressing—



A bedroom of distinction, designed for private living. (Harwell Harris: house in Berkeley, Cal.)

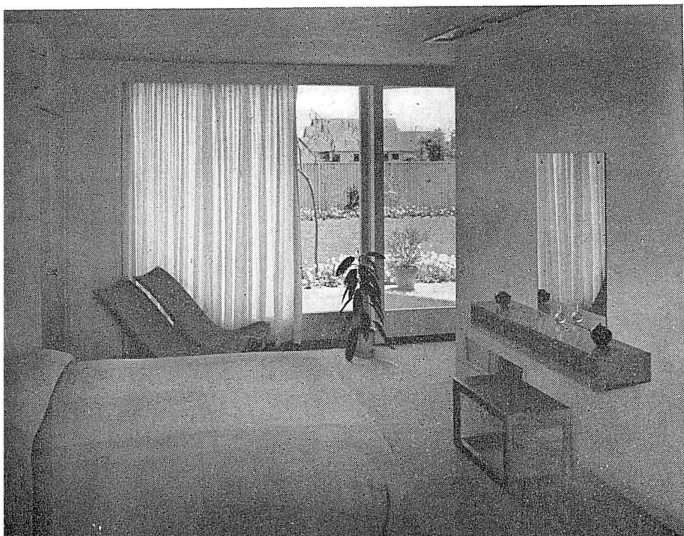
a needless limitation. If the choice were made clear, many people would prefer a bed-sitting room, where they could read, write, work, or even entertain.

The more the bedroom character is played down, the more attractive the room becomes for other uses. If it is also to be a private living room, the pompous, ungainly "bedroom suite," beloved merchandising device of the department stores, should give way to more suitable furniture. The room will seem larger if storage is provided in built-in cabinets, preferably used as partitions between rooms, or in light, easily grouped drawer units, if beds are placed against the wall, and if the space isn't interrupted by the insistent verticals of useless footboards.

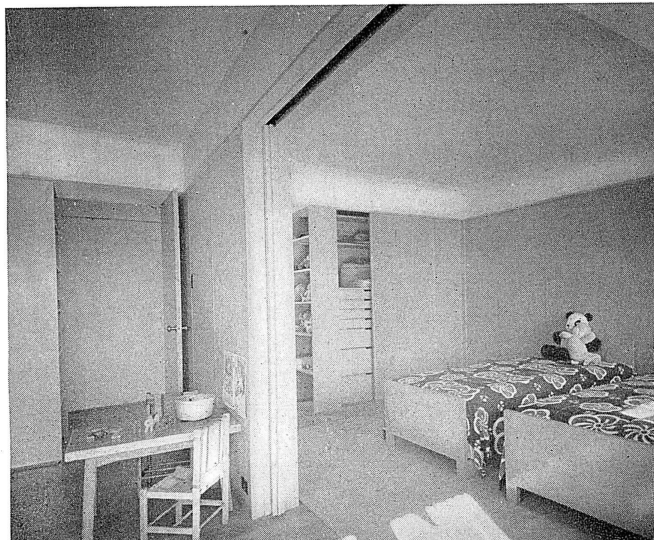


A small bedroom with many functions. Notice the fireplace, the wall-inset desk and dresser, and the louvered door. (Alice M. Carson: house on Hobe Sound, Fla.)

A room frankly designed for sleeping, rather than for living, and with a suitably peaceful atmosphere. (John Funk: house in Modesto, Cal.)



The sliding doors which separate two children's rooms can be pushed back to make one large playroom. (Harwell Harris: house in Pasadena, Cal.)



## **“study”**

Children usually study in their own rooms, but if either parent contemplates serious work at home there should be a separate room with lock and key. Even this room could be dual-purpose, as it might contain couches and cabinets for overnight guests. If a special room is too expensive, then part of the master bedroom might be planned for concentrated work. But in a family with children it is no solution whatsoever to give one end of the living room the optimistic label of “study.”

## **bathrooms**

Our bathrooms are often more suitably designed than any other part of the house. That glorification of cleanliness which may be depressing in a kitchen seems wonderfully appropriate in a bathroom, and most of us enjoy the glittering chromium and the slick, shiny surfaces.

Although the fixtures themselves might be better designed for convenience and appearance, and for easy installation and maintenance, all that you and your architect can do is to pick the best that the market offers. But you can at least think carefully about how the fixtures should be disposed.

Should the equipment be split into small, private combinations: a wash basin in each bedroom, for example, with one or two separate toilet-lavatory units and separate tub and shower? Or is it better to have large, gregarious bathrooms, perhaps with a double washbasin, a dressing table and a place for the baby's bath? That is something for each family to decide, but remember that in the first case specialization can easily be pushed to the point of inanity, and in the second case, the bathroom which is all things to all men, women and children, must be really capacious. If you can afford only one bathroom, you might supplement it with a wash-basin built into a closet of the master bedroom.

## **storage**

There remains the problem of general storage. Even if every partition in the house were composed of closets, shelves and drawers, there would probably be a surplus of bulky impedimenta and a need for what the housing experts call “undesignated storage space.”

Did the old-time cellar and attic really do a good job? The attic was roomy and dry, to be sure, but not easily accessible. Cellar stairs were dangerous, and the



cellar itself was moist and dark, although its even year-round temperature was ideal for food storage. The cellar also served to protect the main floor from cold and ground-damp, but this is unnecessary if the house is well insulated, and superfluous if there is radiant heating (opposite). Have a basement or attic if you like, but remember that they are not always as useful as a smaller amount of storage room at ground level. Nor is the space given away free. A basement, for example, requires expensive excavation and drainage, and expensive masonry walls and floor.

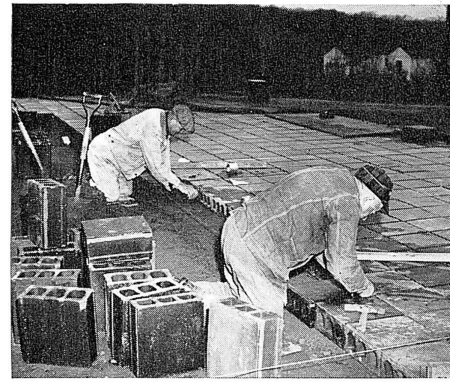
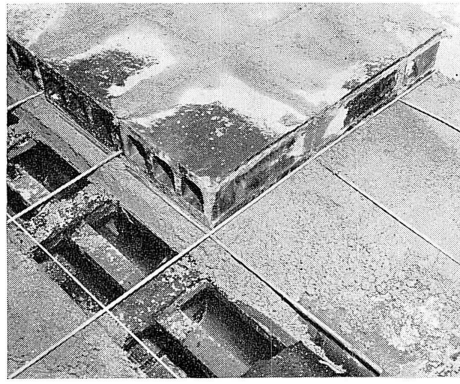
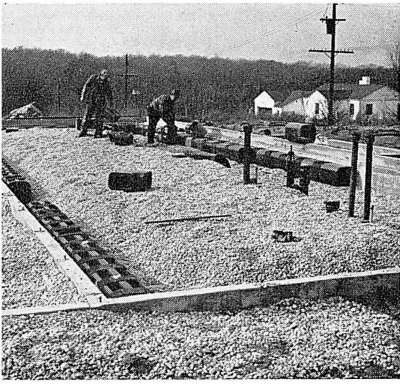
Progressive architects have tended to discard the cellar and the attic but have not always provided adequate substitutes. Food must usually be kept within the house to avoid freezing, but since nothing else requires heat or insulation, it is possible to take the general store-room out of the expensive cubage of the house and make it a lockable, well-ventilated extension of the garage. Two such rooms are useful, one for household equipment, the other for bicycles, pram, garden tools, perhaps a workbench. As regards the largest storage item, the automobile, an enclosed garage has some obvious advantages, but it seems that the modern automobile can take even the coldest winter in the cheaper semi-shelter of a car-port without serious deterioration.

### **a one-story house?**

Whether the different rooms are to be arranged on one or several floors depends partly on the size and contours of the lot (page 75), but it's often a problem which you and your architect can settle as you please. The difference in cost is negligible, as the absence of a stair-hall in the single-story house tends to make up for its extra foundations and roofs.

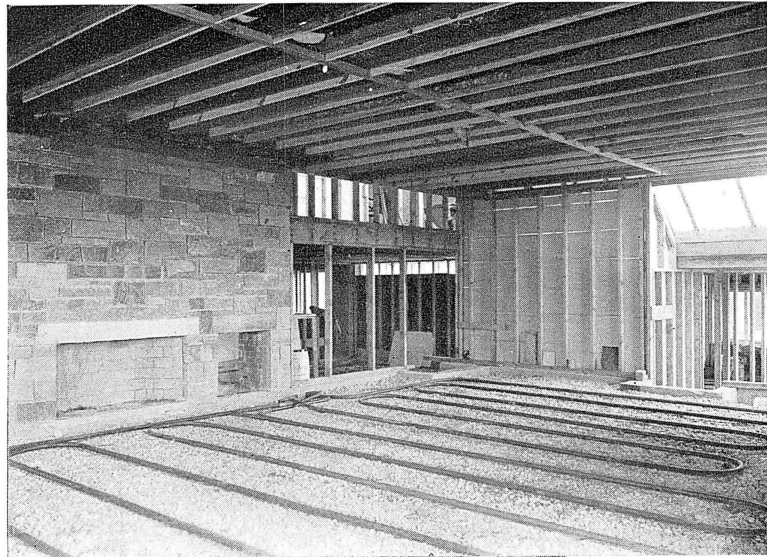
A two-story house allows a larger garden, and its elevated bedrooms give nervous householders a feeling of nocturnal safety. If the house is large, its arrangement in two stories will make possible a more efficient concentration of traffic and plumbing.

A one-story house, however, can be considerably quieter, more convenient, and more intimately related to its garden; and it is easier to alter the proportion of bedrooms to living rooms if everything is on one floor. The house which is entirely or mostly single-story allows great freedom in floor plan and ceiling heights. Moreover, in the case of a small house, its quiet horizontality is usually more pleasing to the eye than the precarious verticality of a multi-story structure.



Above. Three stages in the preparation of a hollow tile floor for radiant heating. Left: perforated supply and return lines are laid on gravel. Center: cement builds up the remaining space to the level of the supply and return lines. Right: the tiles through which hot air will circulate are fixed in place. When the tiles are sanded, the floor is ready for use, with or without rugs. Even in extreme weather its temperature need be no higher than  $85^{\circ}$ . (George Fred Keck: prefabricated "Solar" house.)

Right. Another way to obtain radiant heat, using hot water rather than hot air. Wrought iron pipe is coiled on a gravel base, then covered with concrete. (John W. Lincoln: house in Stonington, Conn.)

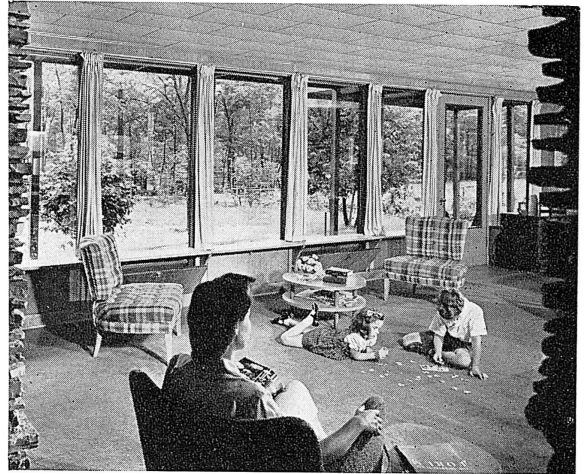


Radiant heating simply means the use of extensive moderately heated surfaces rather than a few concentrated sources of extreme heat. Usually the entire floor is heated, either by embedding hot-water pipes in a concrete floor-slab, or by forcing hot air through hollow tile. In either case a basement is superfluous. It is also possible to heat the walls or ceiling rather than the floor.

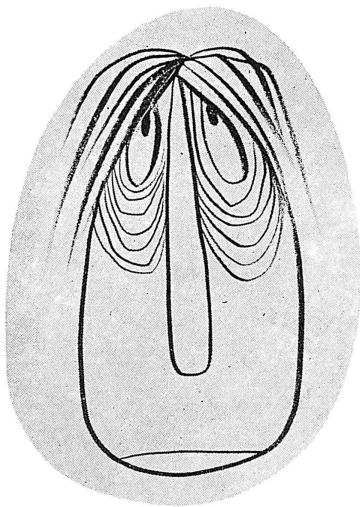
The advantage of radiant heating is its comfort. Like a bright sun on a cold day, it heats the body directly, rather than the air around the body, and one can feel warm even when the air temperature is abnormally low. Windows can be left open even on quite cold days, and the low, even temperature abolishes the chill draftiness and dryness of steam heat. Moreover, the greater similarity of inside and outside temperatures means that relatively little heat is lost to the exterior. Radiant heating is no more expensive to install than a standard forced-circulation hot water system, and consumes less fuel.



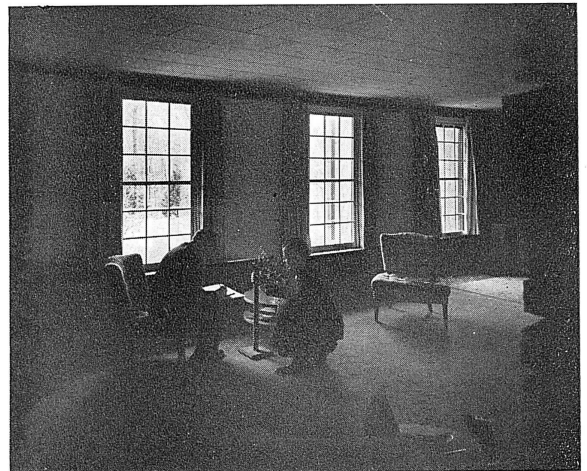
*light*



(George Fred Keck: house in Glenview, Ill.)



*gloom*



(Same room as shown above, but with window-wall converted to conventional peep-hole windows for experimental purposes.)

## PLENTY OF LIGHT

Glass is an extraordinary material. It brings in sun, light, view, outside space—almost everything except the weather. It used to be a great luxury, and it was not so much taste as the high cost of glass, primitive heating methods and unfriendly Indians which accounted for the colonists' small, many-paned windows. Since they were not only small but punched out of the wall at mechanically regular intervals, light was sparse and spotty, unrelated to the real needs of the interior.

With our dark houses and our dark spectacles some of us have developed a fear of light which seems to have scant physiological basis. Aldous Huxley is the spokesman for a group of eye specialists who believe that extensive glass strengthens the eyes by offering strong natural light, and by encouraging them to shift constantly from objects close at hand to points in the distant landscape.

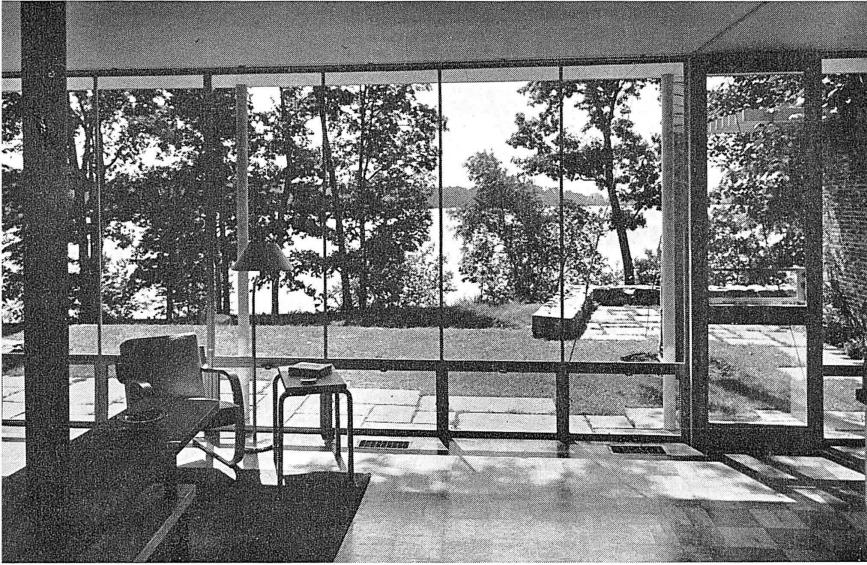
Today's architect has unlimited glass at his disposal. He can group his windows as large, continuous surfaces, even as entire walls, and achieve a remarkably even light, ample but glareless. Since glare is largely a matter of excessive contrast between light and shade, small windows cut into a dark wall are often more trying than a whole wall of windows. The location of glass is more important than the quantity, but if you like glass, and like what it does, there is nothing to prevent your having as much as you want. Large amounts are practicable in any climate, when intelligently used.

### sun control

The determining factor, of course, is the sun. In most climates it is wise to expose as little glass as possible to the north and concentrate it on the south side, where it will get three times more sun than if it faces east or west. Since glass scarcely interrupts the passage of high-intensity sun-heat into the house, yet discourages the transmission to the outside of low-intensity house-heat, the net result is very favorable, as the builders of the Swiss chalets knew centuries ago. Heat loss can be reduced to a minimum by drawing curtains at night and by using the double- or triple-layer glass now offered by various manufacturers.

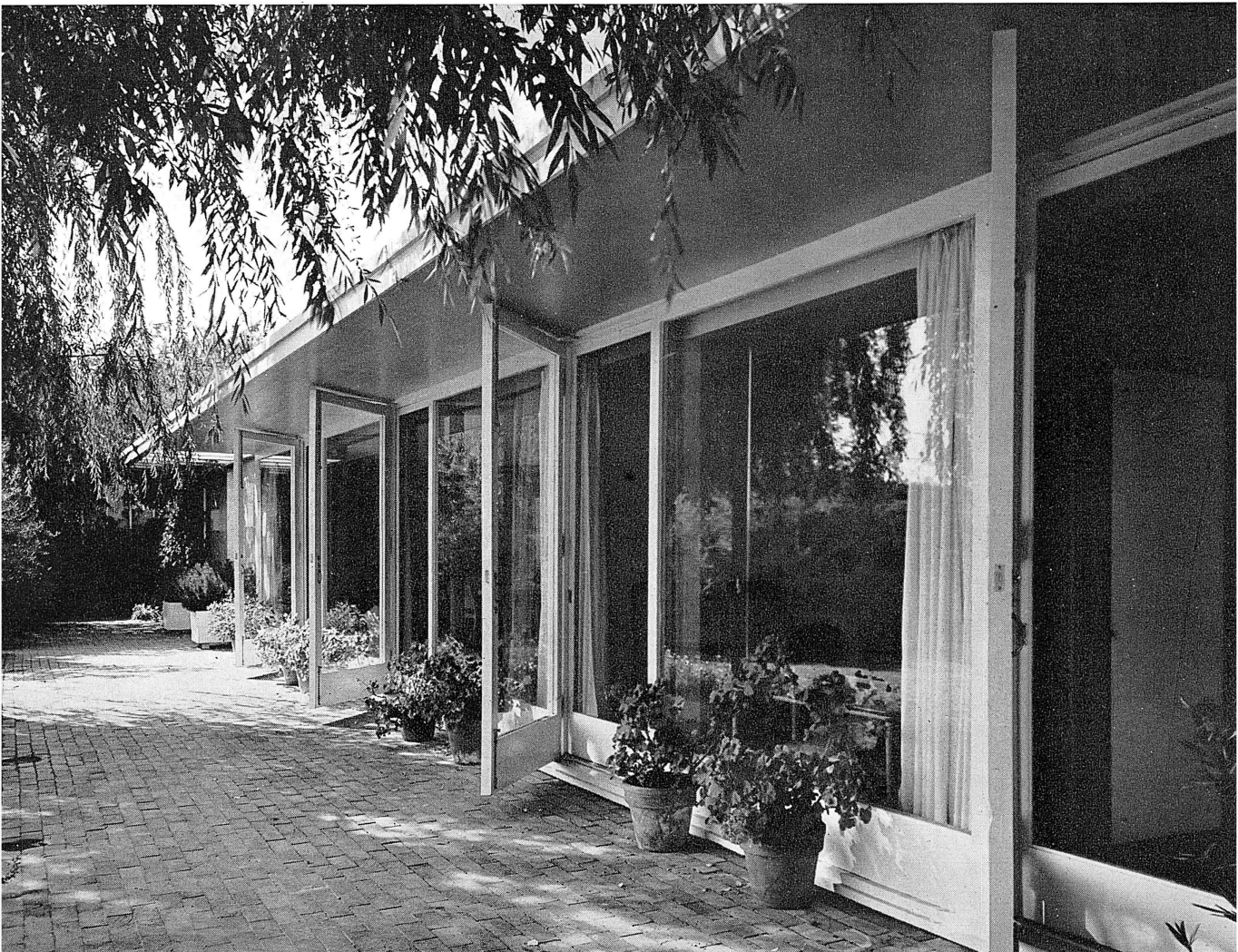
In some extreme climates sun is desirable the year round, but usually one wants as little as possible during the summer months. Since the sun obligingly takes a much higher curve across the sky in summer than in winter, it is possible to calculate the depth of a protective roof-overhang or projecting blind to exclude the hot summer sun, yet allow the low winter sun to penetrate far into the rooms.





Left. Since the ceiling is supported by columns, the exterior wall can be entirely of glass. Most of it is fixed in place, but there are low transoms for ventilation. (G. Holmes Perkins: house in Winchester, Mass.)

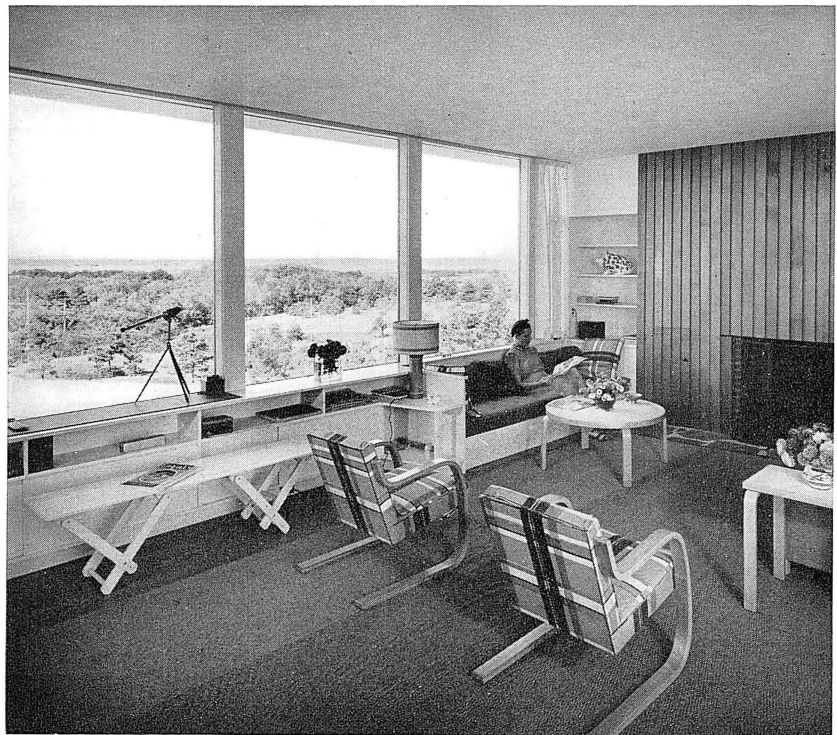
Below. A south-facing window-wall protected from the high summer sun by a five-foot roof overhang. Glass doors alternate with large sheets of fixed glass. (John Funk: house in Modesto, Cal.)





Above. Rooms need not be lined up in mechanical rows to enjoy southern exposure. Notice the protective overhangs. (George Fred Keck: house in Barrington, Ill.)

Right. Glass set between supporting posts to provide even light and an almost unimpeded view. (Carl Koch: cottage at East Sandwich, Mass.)



Complete precision is impossible, as the solstice isn't really the center of the warm season. Sunshine is welcome in April, unwelcome in August, yet the position of the sun is the same.

A solid overhang has the great advantage that windows can be left open with little fear of rain. Although an open sun-blind in the form of trellis or slats is no defense against rain, it cuts less light from the interior than a solid projection, and if the slats are adjustable they can be shifted to welcome the sun on freakishly cold summer days. Another virtue of the open blind is the gay pattern of light and shade which it throws on the walls of the house.

A horizontal band of windows gives a broader view and more even light than a floor-to-ceiling slit, but the latter is not without elegance and has the practical advantage that one can see out whether standing or sitting—or lying, for that matter. A bedroom with balconied French window-doors is a very fine thing.

There is certainly a case for the long vertical window, but horizontal windows are useful too, square windows are beautiful, and there is really nothing against round or pointed or cloud-shaped windows—*provided* that they do pleasant things about light and space, and *provided* that they make good sense in relation to the materials and construction of the house; but it is the simple and unpretentious solutions which are usually cheaper, more workable and better looking.

Whatever the type of window, it seems a shame to break it up with unnecessary cross-pieces, unless they are intentionally used to interrupt the flow of space from inside to outside. The notion that horizontally divided windows are in themselves “modern” is a superstition which merely complicates the chore of the window washer. Some people hesitate to use lots of glass because they dread the window washing, but actually it is no more trouble to clean a few large sheets of glass, *if they are easily accessible*, than to care for the multi-paned windows of more conventional houses.

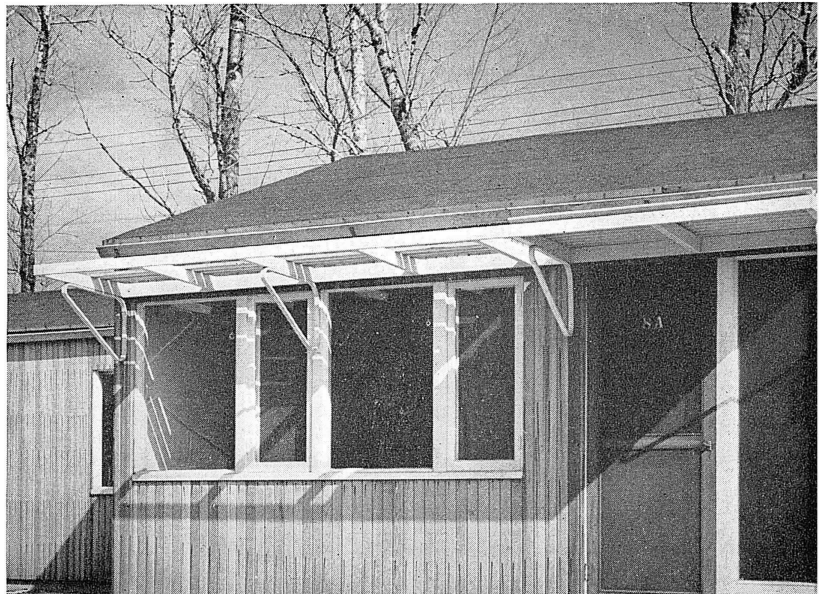
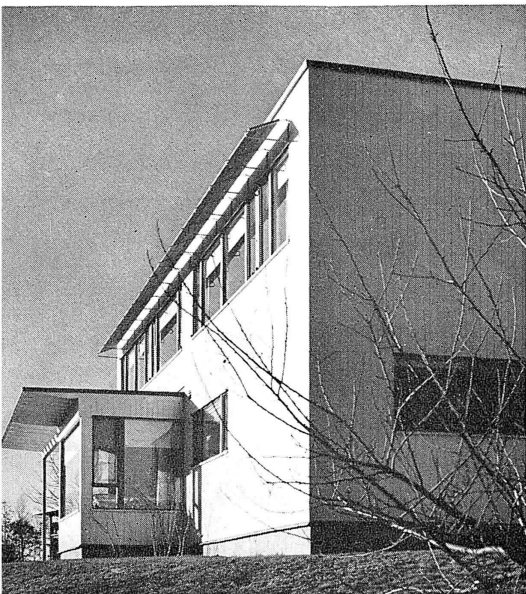
Generous glass areas are *feasible* anywhere, but whether entire walls of glass are justifiable for an inexpensive house in a cold climate is not so easily established. If a wall is double-glazed and equipped with curtains and a fair amount of openable, screened sash, its cost per square foot is considerably higher than that of an ordinary insulated wall with ordinary peep-hole windows. No scientific tests have yet been made to find out whether this discrepancy is eventually covered by the considerable annual savings in fuel through utilization of sun-heat. But even if quantities of glass are something of a luxury, most people seem to feel that it is one with an abundant return.





Above. Deep overhangs shelter the bedroom doors. Extra light and air comes through clerestory windows set between the two roof levels. (Frank Lloyd Wright: house in Florence, Ala.)

Below. Open slatted sun-blinds cast patterned shadows. (Left. Walter Gropius and Marcel Breuer: house in Lincoln, Mass. Right. Hugh Stubbins, Jr.: house at Windsor Locks, Conn.)



## ventilation

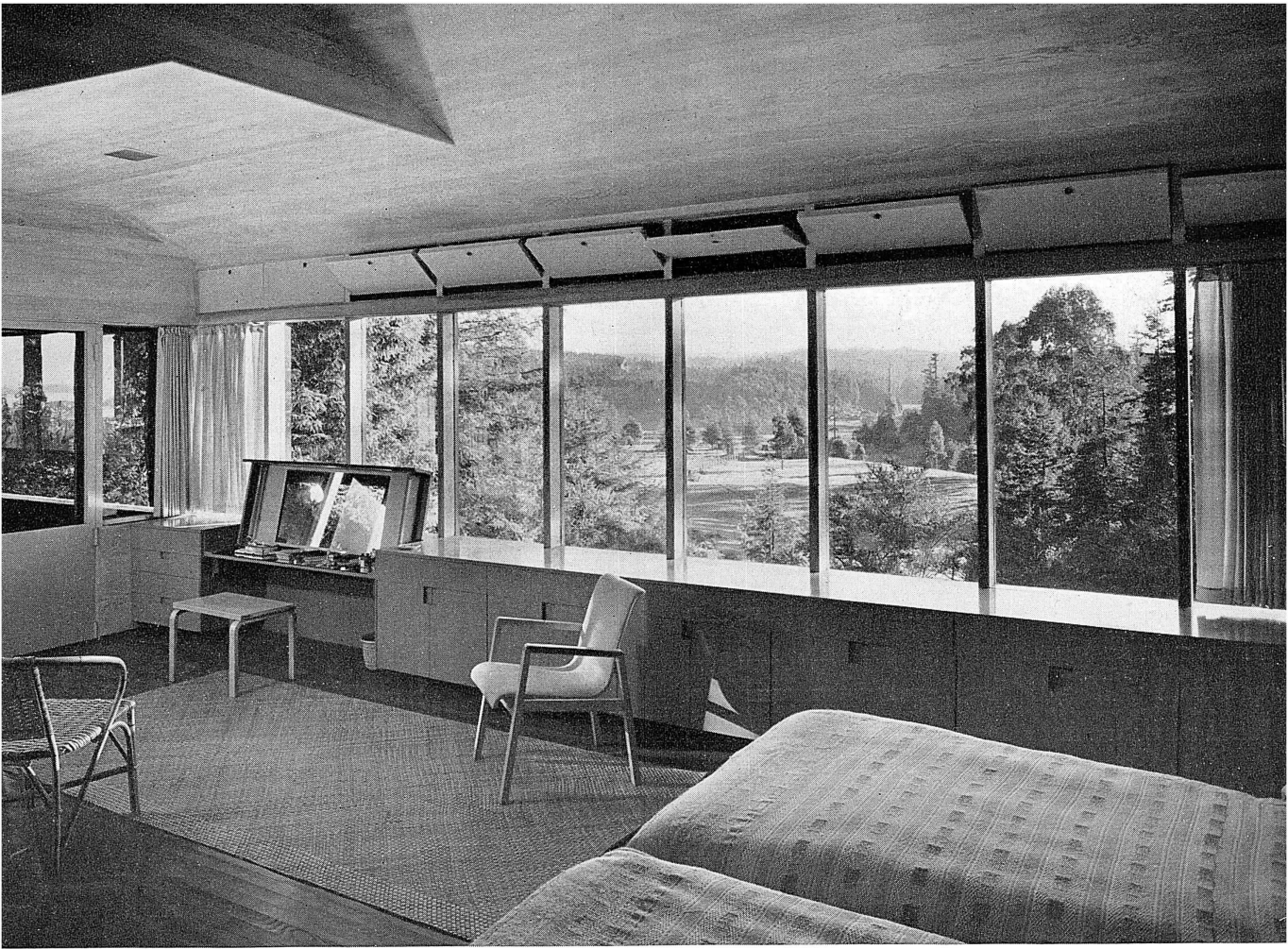
Light and air are mentioned in the same breath, but they are by no means synonymous in today's architecture. In an air-conditioned building, for example, glass is fixed in place and only the exit doors can be opened. Sometimes the same distinction between source of light and source of air is made when there is no artificial air-conditioning. In this case air circulates through adjustable slats set below or above immovable panes of glass, or perhaps quite separate from the windows. If these slats or louvers are properly placed and the house oriented to the prevailing breeze, ventilation can be satisfactory even on seemingly breathless days.

Fixed glass is much cheaper than movable doors and windows. It requires no hardware, no insect screens and little framing material. It can be installed without much trouble, and since it needs no bulky frames, it's often better looking. In his enthusiasm for fixed glass, however, the architect is tempted to underestimate the requirements of good ventilation. San Francisco is partially responsible for this. Since the temperature rarely goes above 65° and wind is a constant plague, San Franciscans want lots of sun and little air. Local architects realized that the answer was fixed glass and produced such handsome, livable houses that they have been imitated from coast to coast without much thought for fitness. Most parts of the United States demand efficient cross-ventilation for summer comfort, and there is small excuse for not providing it in a free-standing house. It's not much of a solution to tell clients to leave their bedroom doors open.

Even when the problem of ventilation is met, there are some people who object to fixed glass on purely psychological grounds. They feel it as a stuffy enclosure, unbearably forlorn on a pleasant summer day. They grant the advantages of fixed glass, but complain of claustrophobia if they can't open everything in sight. If you belong to this group, or seek a compromise, you will find that the standard types of manufactured sash are as clumsy in design as they are limited in variety. If good horizontally-sliding windows and doors will soon be available, either in wood or in metal, the manufacturers are keeping that splendid secret to themselves.

This means that much of the sash will best be custom-made, a relatively expensive operation in some sections of the country. Sometimes it is possible, however, to make very good shift with items not originally designed for domestic use—factory windows, for example, or garage doors. Unless you build in a specially favored climate, you will also face the nuisance of insect-screens, a problem which will be decently solved only when the necessity is removed by some such miracle as D.D.T.





Light and air come from different sources. All the glass is fixed between the supporting studs, and the room is ventilated through slatted transoms above the glass. (John Yeon: house in Eureka, Cal.)

In both of the houses shown below, air circulates through slatted transoms set below or above immovable panes of glass. (Left. George Fred Keck: prefabricated "Solar" house. Right. Paul Schweikher: house in Glenview, Ill.)





*joy in space*



*claustrophobia*

## SMALL HOUSES CAN SEEM LARGE

You may be reconciled to the idea of a small house, but even so you will probably want it to *seem* large. This is not as difficult as it may sound, for the quality of space is as important as the quantity, and the difference between largeness and smallness is a subtle matter, often better measured by human psychology than by feet and inches.

No tricks of magic and mirrors are needed, merely a sense of the continuousness of space.

It is through his treatment of space as continuous that the modern architect is able to expand an interior far beyond its actual dimensions. This he does by open planning—by allowing space to flow freely from one part of the house to another, and from inside to outside, rather than dividing it into an irrevocable series of box-like cubicles. *The eye is not stopped short at the limits of a room, but is led on by the uninterrupted surfaces of walls, floor or ceiling.* The extent to which this can be done in small houses is determined by the counter-needs of quiet and privacy, factors sometimes underestimated by overenthusiastic designers; but entry, living room, dining area, frequently kitchen as well, can often be treated as parts of one composite volume.

Walls seems much less confining if they are treated as separate planes rather than as the identical sides of a box, and if materials are concentrated in large, unbroken areas. Often such a distinction is made in the actual construction of the house. The fireplace wall will be entirely brick or stone, for example, the others of wood or glass, and one or more of the walls will be seen to continue, uninterrupted, beyond the limits of the room.

Even if rooms are tightly closed in and uniformly plastered, the walls can be differentiated through paint or paper. Since dark colors and vigorous patterns tend to approach, while light, solid colors seem to recede, their juxtaposition can serve to loosen the corners of a room by setting the walls apart from each other. If a dark or boldly patterned wall stands between two light ones, it will seem quite free in space, but if all four walls are dark, or if all are patterned, the room will seem small. Another thing to remember is that deep color on a window-wall will make the window opening seem glaringly bright.

But a house need not necessarily be composed of rectangles. Sometimes curved or diagonal walls will enlarge the usefulness of the floor area and also give a feeling of ease and freedom.



You will find that built-in furniture and standard-dimensioned, combinable units appear to occupy much less space than a clutter of separate pieces, and that rooms seem larger if separate chairs and tables are few in number and concentrated in convenient groups, not evenly scattered about. Emptiness has positive as well as negative value. You will be pleased to find that many of the best modern chairs are a matter of outline rather than mass, therefore well suited to your purpose.

The sense of spaciousness depends not only upon the manipulation of interior space, but upon its continuity to the outside. This is more than just a question of large glass areas. Even an enormous window will do little to increase the apparent size of a room if it is just a hole in the wall. Separation from the outside is as effective as though the window were just a pictured landscape. Perhaps that is why such devices are called "picture windows." No, if one wishes to fuse the interior with the endless space outside, then there must be some continuous plane which will carry the eye beyond the opening. Sometimes the ceiling continues out over the glass to become the underside of deep eaves. Sometimes a tile or concrete floor is carried out as a paved terrace. Or a cross-wall is prolonged from interior to exterior, its material unchanged, seemingly uninterrupted by the transparent plane of the glass.

Just as openness within the house is limited by the need for privacy within the family, openness to the outside is affected by the need for privacy from street and neighbors. The limitation is not too serious, however, as glass can be concentrated on the garden side, or protected by walls, fence or greenery. Sometimes the interior can open widely to a closed courtyard—a kind of outdoor room (see page 81). In such event it is the walls of the garden rather than the walls of the house which mark the absolute line of domestic privacy.

If architects like to design single-story houses, it is partly because of their freedom in all three dimensions, in height as well as in plan. The ceiling of the main floor can become merely the undersurface of the roof, which may be flat, or pitched or arched in any way that seems structurally and visually desirable. Often it is constructed as two planes, flat or inclined, with clerestory windows inserted between the levels for light, air and an increased feeling of spaciousness. A multi-plane roof can thus work with the open plan to free interior space.

Like even, ample light, the illusion of space is a new and wonderful possibility in domestic architecture, but the degree to which you will wish to take advantage of it, particularly as regards the relationship with the outside, is a very personal decision.

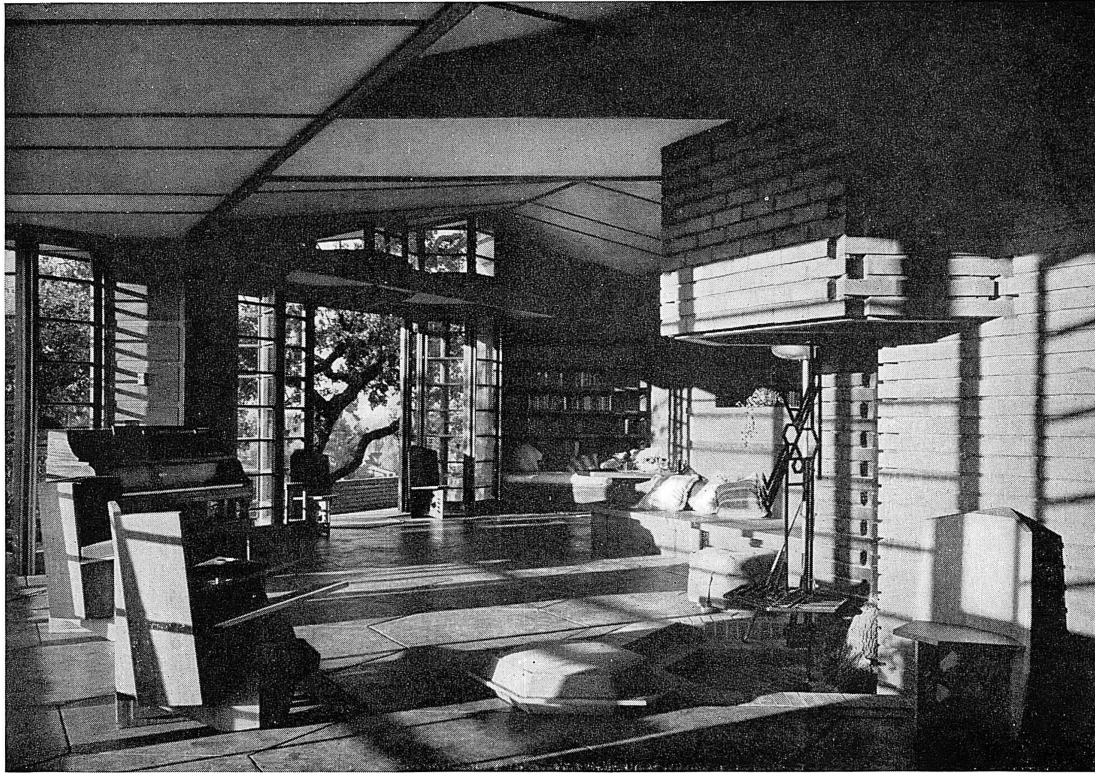
A classic example of the modern conception of space as continuous. Dining and living rooms are treated as one large volume, articulated by slab-like partitions, curtains and low cabinets. Materials are concentrated as large unbroken surfaces. Floor and ceiling are continuous planes. The eye is led on, diverted but not halted. (Mies van der Rohe: house in Brno, Czechoslovakia.)



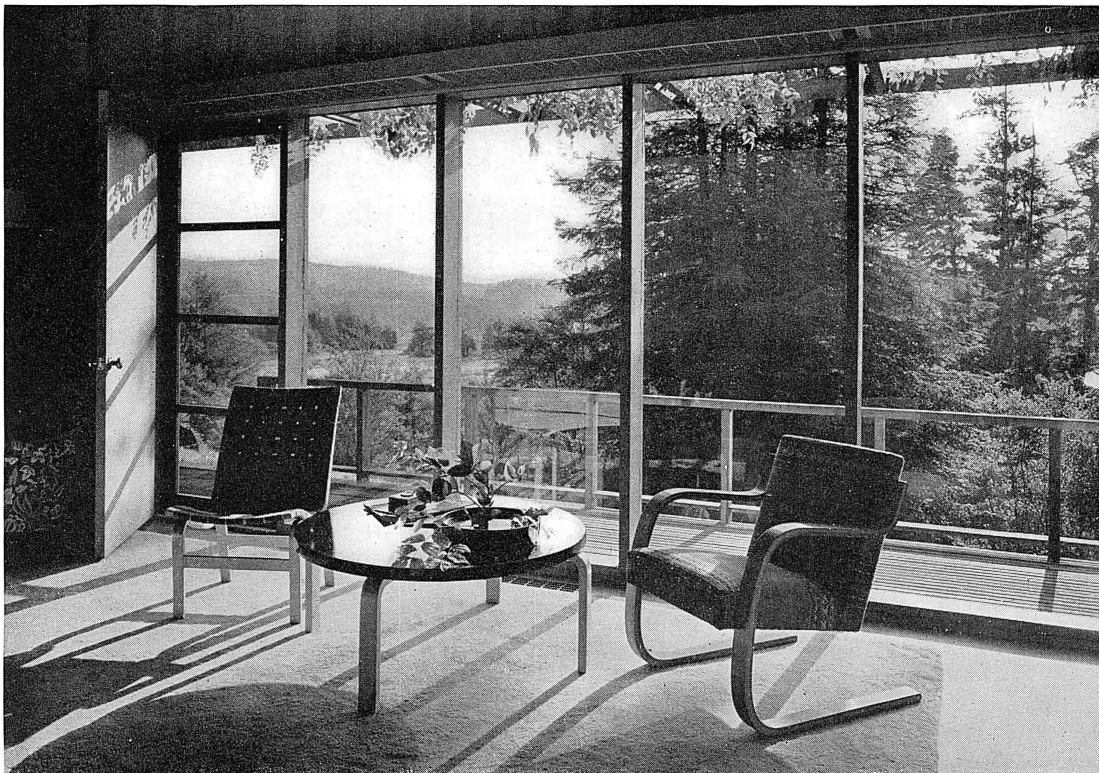




A house planned like a honeycomb, on a system of hexagons. Diagonal walls and multi-plane ceiling are deftly arranged to produce a remarkably spacious and unconstrained interior. (Frank Lloyd Wright: house in Palo Alto, Cal.)



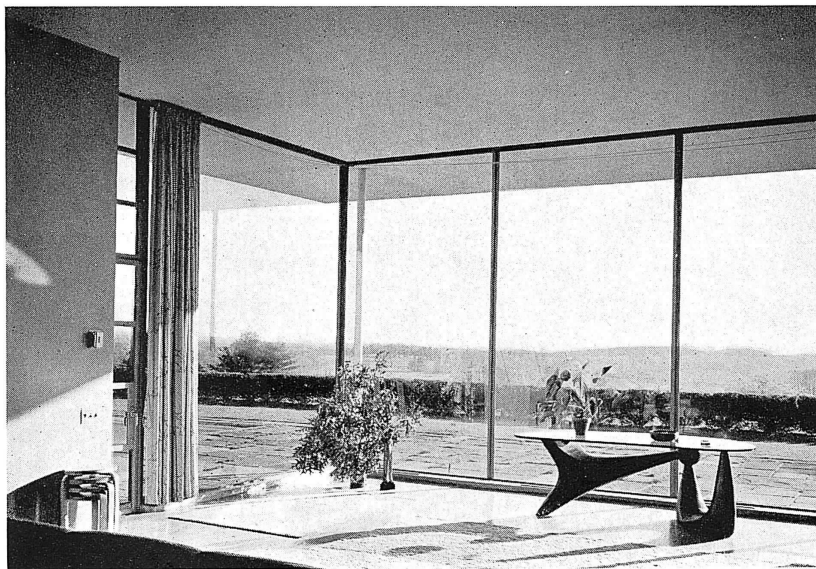
A well proportioned glass wall between living room and balcony. (John Yeon: house in Eureka, Cal.)



Opposite. Sliding doors separate the glazed loggia from the garden and from the living room at left. (Clarence Mayhew: house in Lafayette, Cal.)

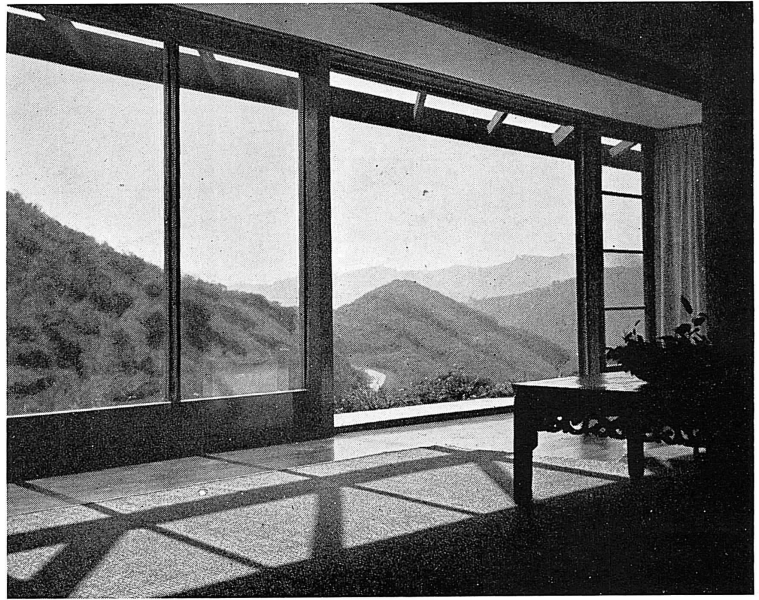
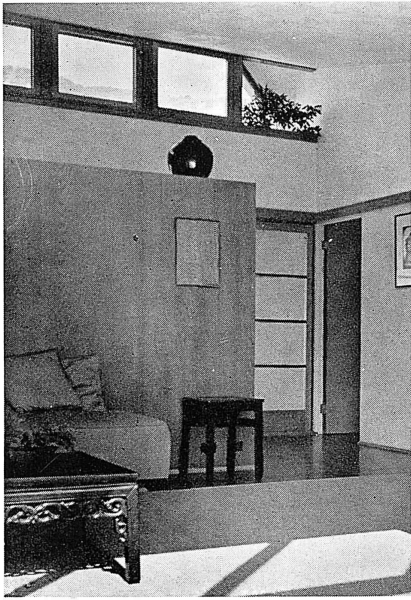


Wall and ceiling continue to the outside, scarcely interrupted by the glass, and the room seems much larger than it is in actuality. (Victor Hornbein: house in Denver, Col.)

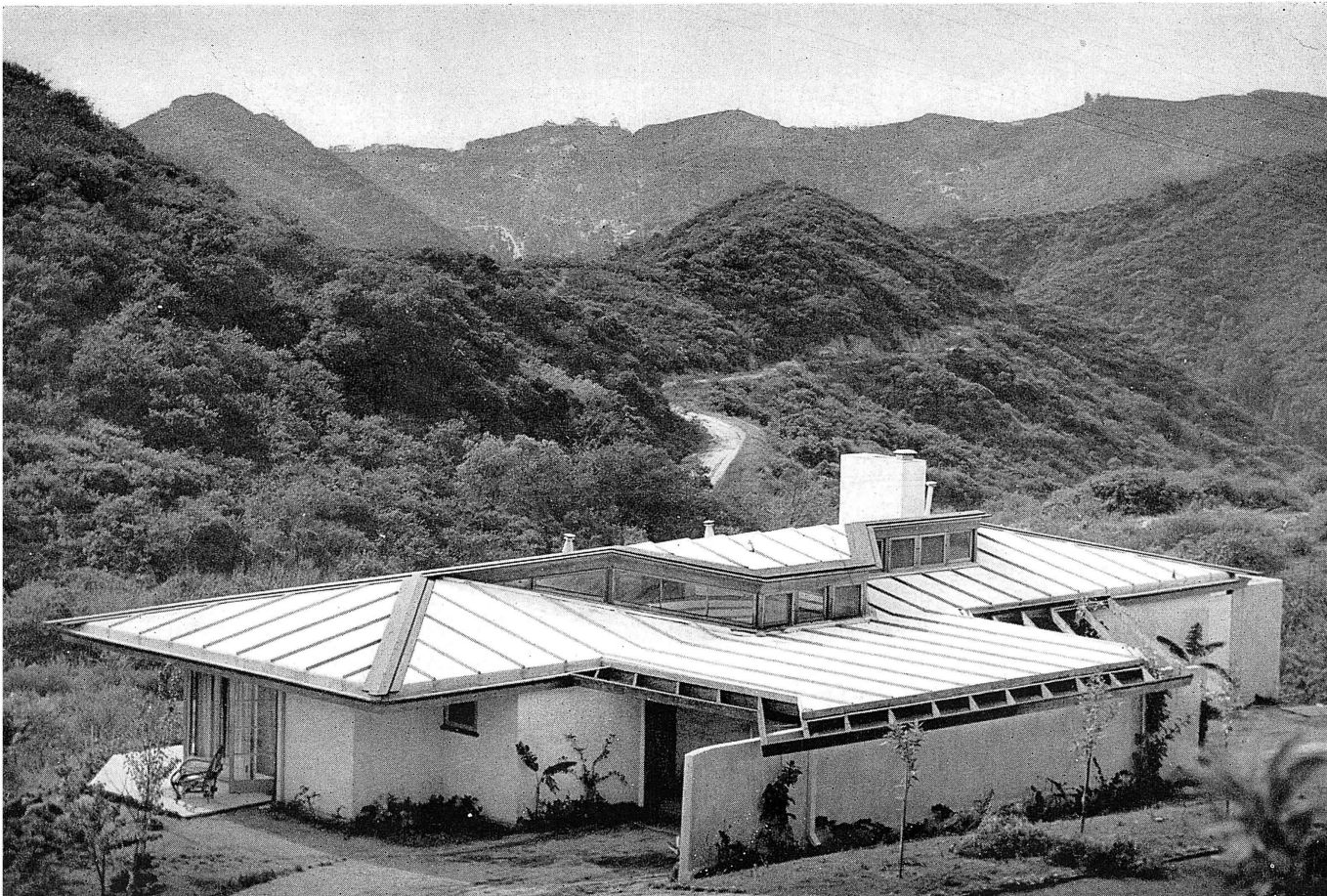


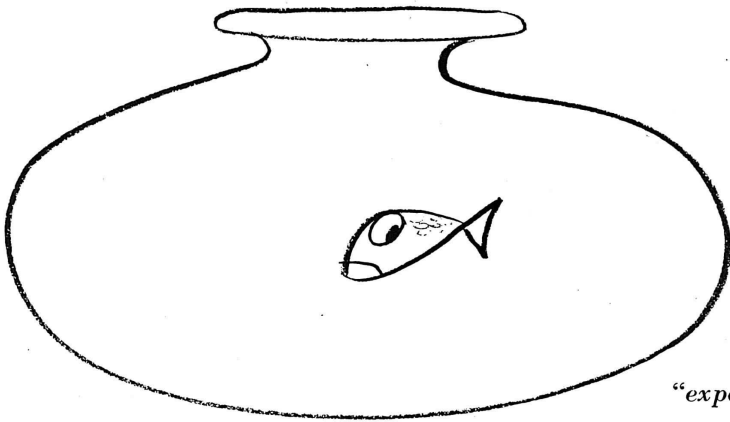
External walls support nothing, therefore can be entirely of glass. The continuous plane of the ceiling carries the interior into the limitless space beyond. (Edward D. Stone: house at Old Westbury, N. Y.)



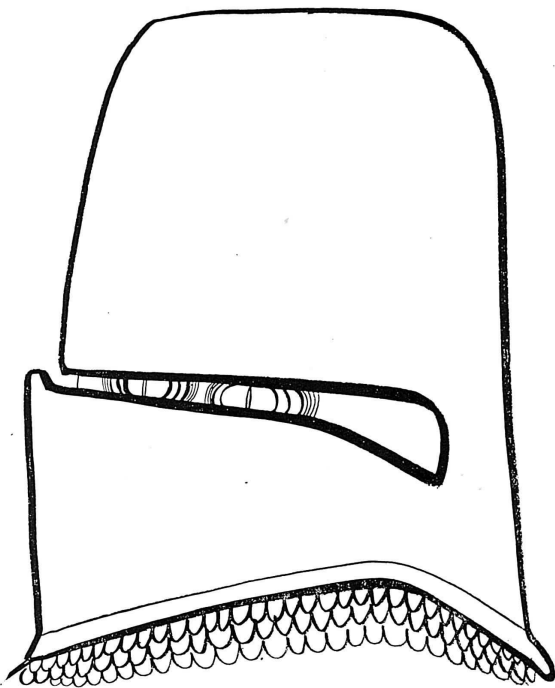


Clerestory windows are inserted into the roof of the one-story house shown below. Above are two views of the living room of this house. Great glass doors run the length of the south wall (right), opening to the terrace and the view. On the opposite side of the room is the high band of clerestory windows which give cross-ventilation, unusually even light and added feeling of spaciousness. (Harwell Harris: house in Los Angeles, Cal.)





*"exposure"*

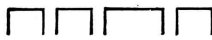


*"cave-like security"*

## AN OPENED HOUSE?

Light and space work together upon the human psyche, and they have much more to do with our feeling of well-being than is generally granted.

It has been pointed out that there is almost no limit to the light and spatial freedom which is possible in contemporary architecture. This means that there is no limit to the possibility of new and individually satisfactory compositions. It does not mean that all the stops must be pulled at once. Architecture, after all, is an art, and light and space are two of the architect's materials, to be used not only with sense but with sensibility.

Emotion and reason do not always coincide. When the presently accepted theories of orientation and glass use are followed to their logical conclusion, the result is a long narrow block of rooms, each facing the south with a wall of glass. Schematically the answer is , and sometimes that is almost exactly what the architect gives. End walls are blank for privacy and consistency, and only small, high windows face the north. Very pure, very simple. Perhaps too simple.

Let us assume that the clients want lots of light. And let us assume that the garden is beautiful to behold, summer and winter. Even so, isn't there some risk of boredom in that very uniformity of light and outlook? One room would seem much like another, as it would have the same southern exposure, the same stretch of glass, and an almost identical landscape beyond.

Isn't even the finest view better appreciated if one is allowed to approach it with some choice and discretion? The more distant the outlook, the greater the compensating need for intimate seclusion. "Exposure to view" can be monotonous if the exposure is too insistent.

The advantages of freedom in space and generous uniform light are peculiar to modern architecture. Each is a potential good. But if either is pursued mechanically, in disregard of more perverse but deeply human wants, the result can be disastrous.

The sense of space as free and continuous, within the house and to the outside, is achieved by means of open planning. As explained in the last chapter, this means that the eye is not stopped at the boundaries of the room, but led on by continuous planes. The result can be poetry, multifold and dynamic. Moving about, one discovers new and ever changing relationships. Space lives and sings. But in less fortunate circumstances openness can become exposure and joy in space can turn to fear. Space slips out on every side and leaves one feeling lost and threatened.

Part of the secret is that space is merely emptiness until it is defined. If it is to count as anything more than a vacuum, it must be molded, framed, interrupted. Another factor is the need for variety. The great architects of history have always known that contrast gives scale and sharpens awareness. A thesis exists only in relation to its antithesis: light needs darkness, bigness needs smallness, freedom needs constraint and good can be pursued only in the knowledge of evil. Man retains his primitive need for cave-like security even while he delights in unlimited light and space, and the best modern houses give both.

The fireplace is an excellent example. There must be dozens of easier, cheaper ways to obtain localized heat, but none with the emotional content of the hearth. As the persistent symbol of domestic security, it is the focus of the house and a natural place for an expression of intimacy. The fireplace which is closely flanked by openings is a self-contradiction, yet the practice is all too common.

Openness, then, is a means rather than an end. It must be used with discretion. Moreover, different people like different degrees of openness. You may above all else wish to *know* when you're inside, and therefore demand a firmly established boundary between interior and exterior, even though you know it will make the house seem small. But there is no need to seek a Georgian refuge, as modern architecture can give you that degree of openness which you find most sympathetic.

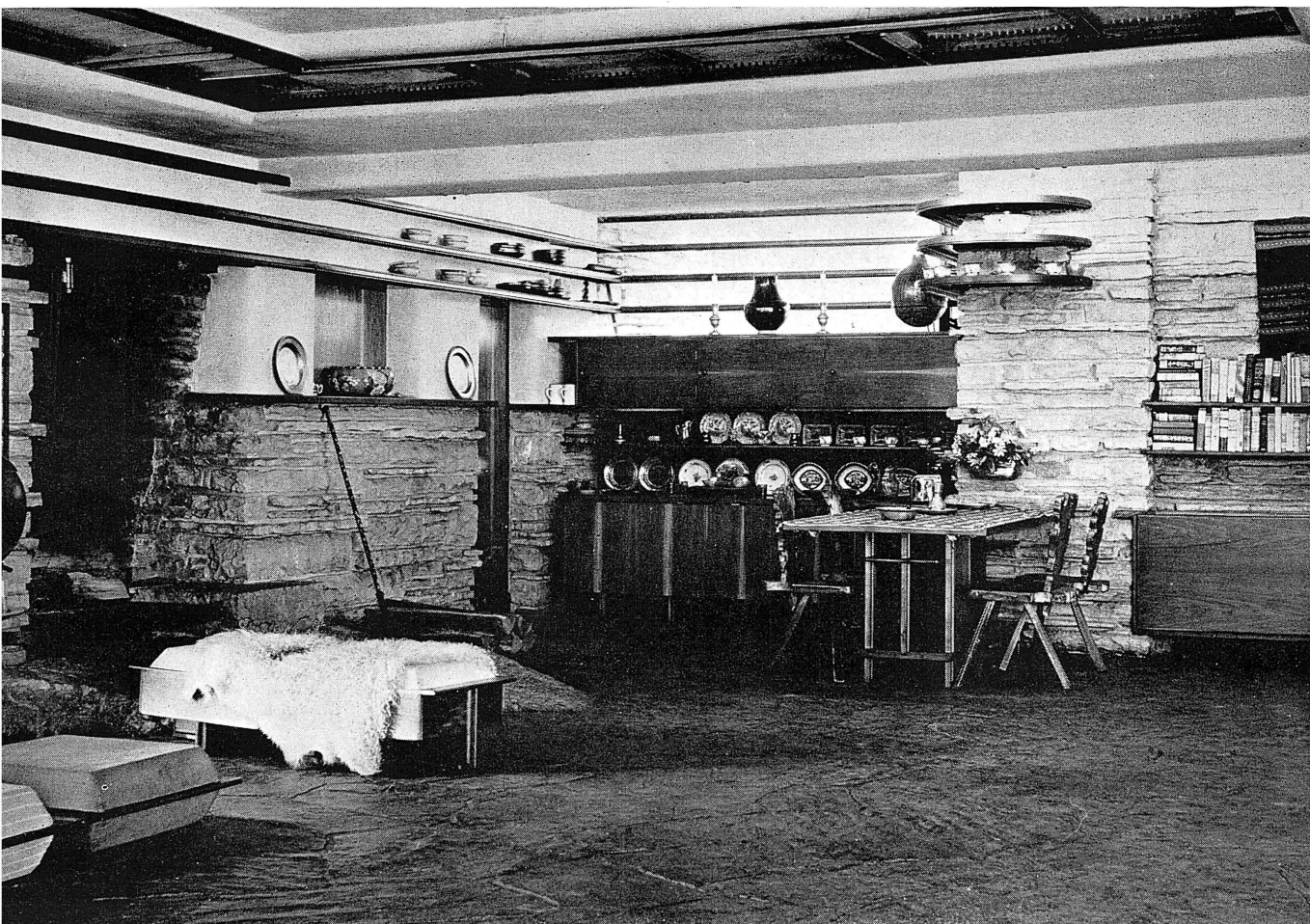
Love of light and limitless space may be the prevalent mood of our day, but it isn't a *necessary* premise for good contemporary design, and don't be afraid that a modern house must mean a desperately sunny, impossibly over-exposed future. Your house can be part of the outdoors, or it can be a snug, self-contained enclosure. You can have entire walls of glass or just a few little slots. You can have that "generous, uniform light" which there has been so much talk about, or you can revel in unmitigated gloom. Most likely you'll want both at different times and places.

A flood of light can be a great blessing if provision is made for its control. If a glass wall is considered as raw material rather than as a final answer, the quality of the light might be changed at will through different kinds of blinds and screens and curtains. With a little imagination and some extra money, one might have marvelous shifting patterns of light and shade in any desirable intensity. It is and should be possible to achieve a cool-seeming gloom. We're so intent on sweetness and light that we tend to forget the somber pleasures of a dark, amply proportioned Victorian interior on a hot midsummer day. There should be many answers at least as good as the Venetian blind.

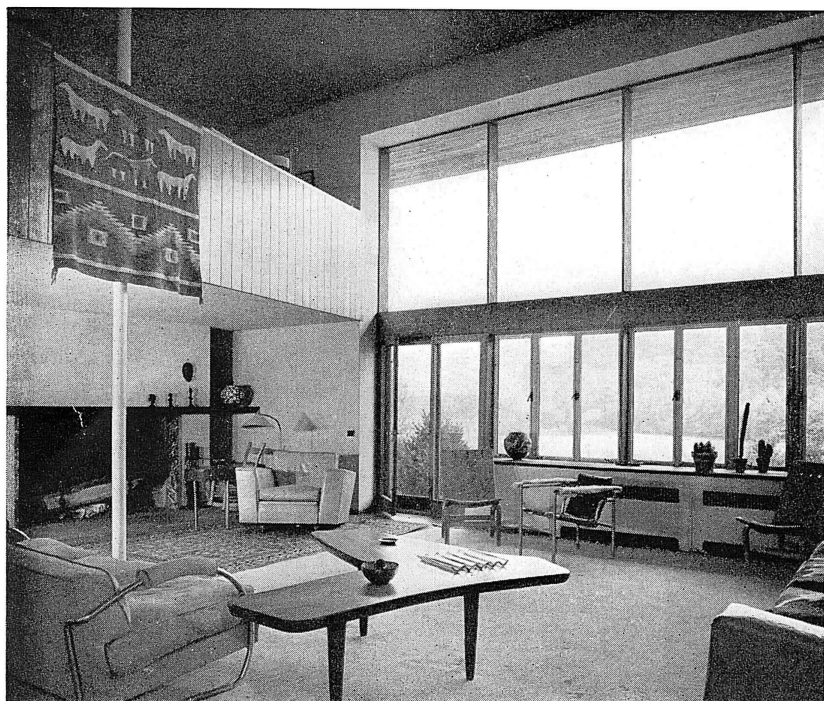




Opposite ends of the same remarkable room. One end opens widely to the outside (above), yet the actual transition is subtly made. The rear of the room, cut into the rocky hillside, is almost literally a cave. (Frank Lloyd Wright: house on Bear Run, Pa.)



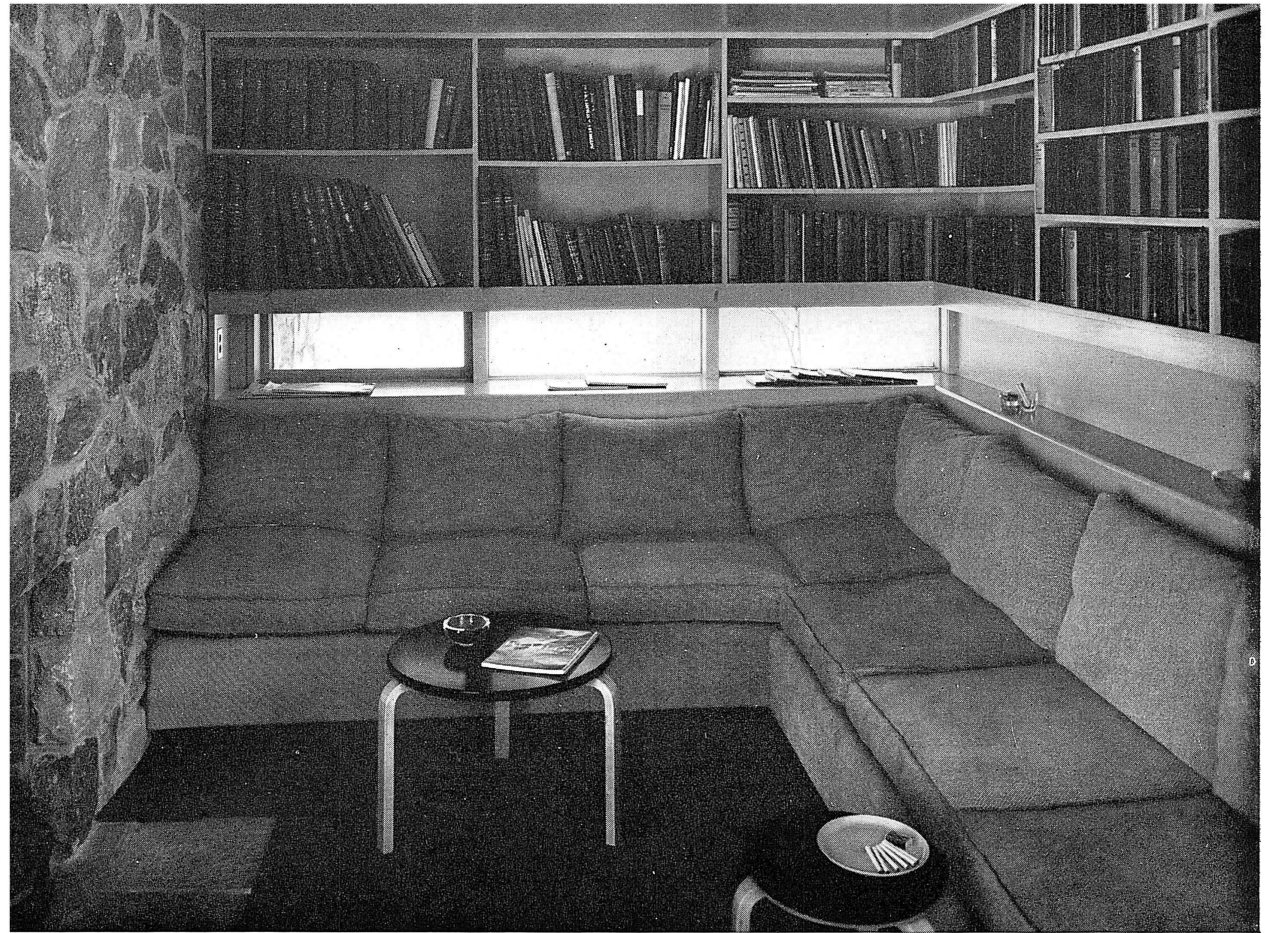




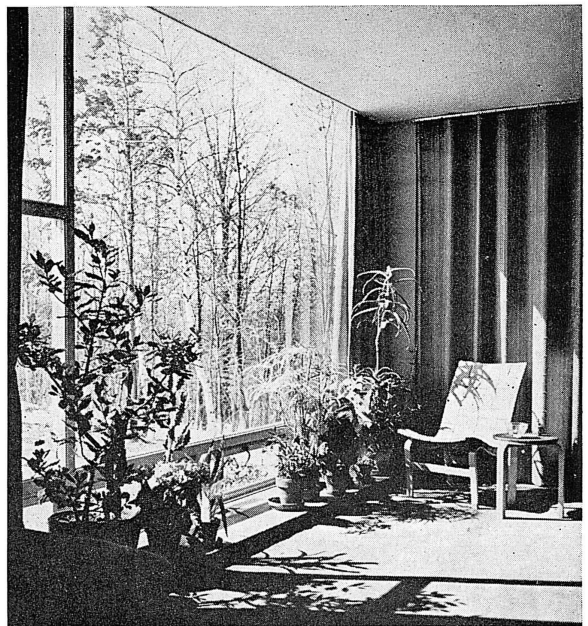
Left. Contrast between a two-story glass wall and a low-ceilinged fireplace alcove with balcony above. (Oscar Stonorov: house near Phoenixville, Pa.)

Below. The band of narrow inset windows separates interior from exterior by halting the line of vision at the wall. The result is snug rather than spacious. Furniture designed by Alvar Aalto. (Constantin Pertzoff: house in Lincoln, Mass.)





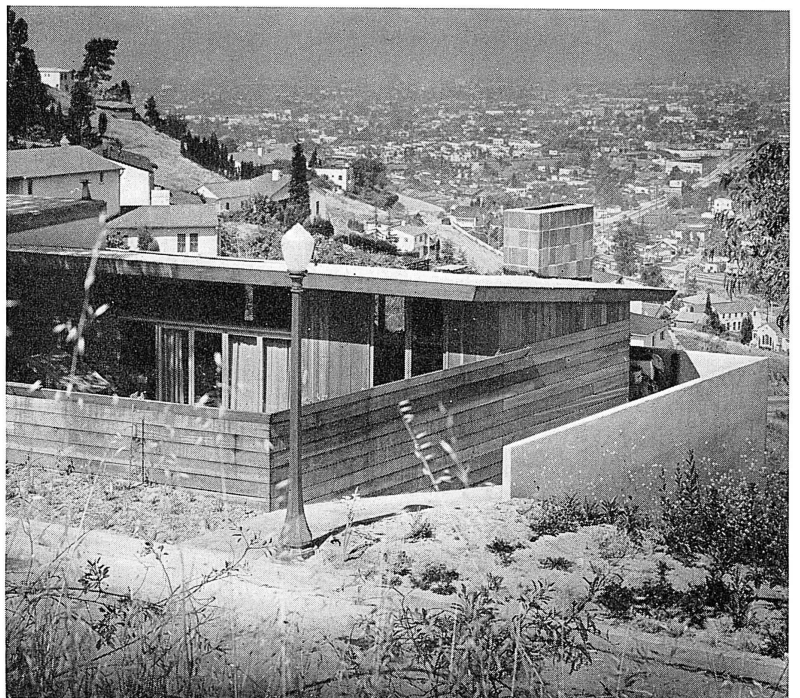
Two views of the same room. The fireplace alcove shown above is a welcome contrast with the openness of the main part of the room, focused on the great window shown at right. (Walter Bogner: house in Lincoln, Mass.)







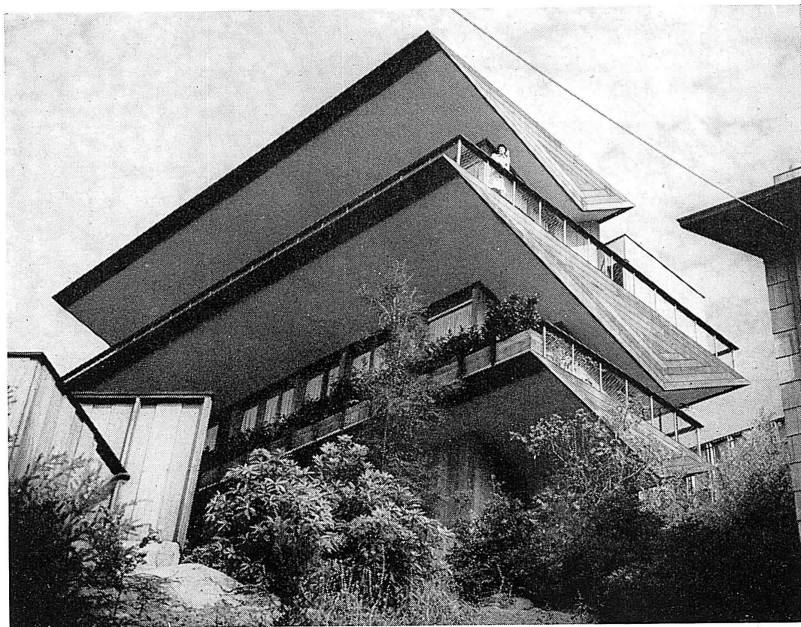
A view is something which one should be able to take or leave. The small hillside house shown on this page offers both possibilities. One side concentrates on the view (above), while the street side opens to a pleasantly limited, very private court. (John Lautner: house in Los Angeles, Cal.)



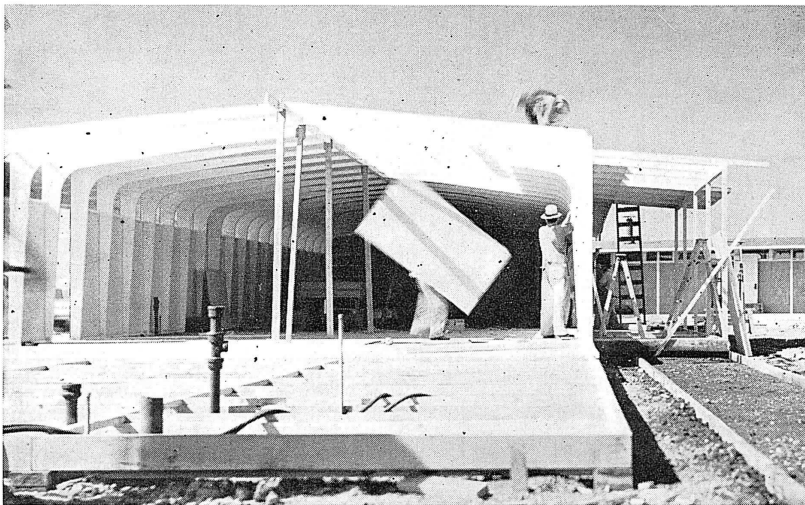
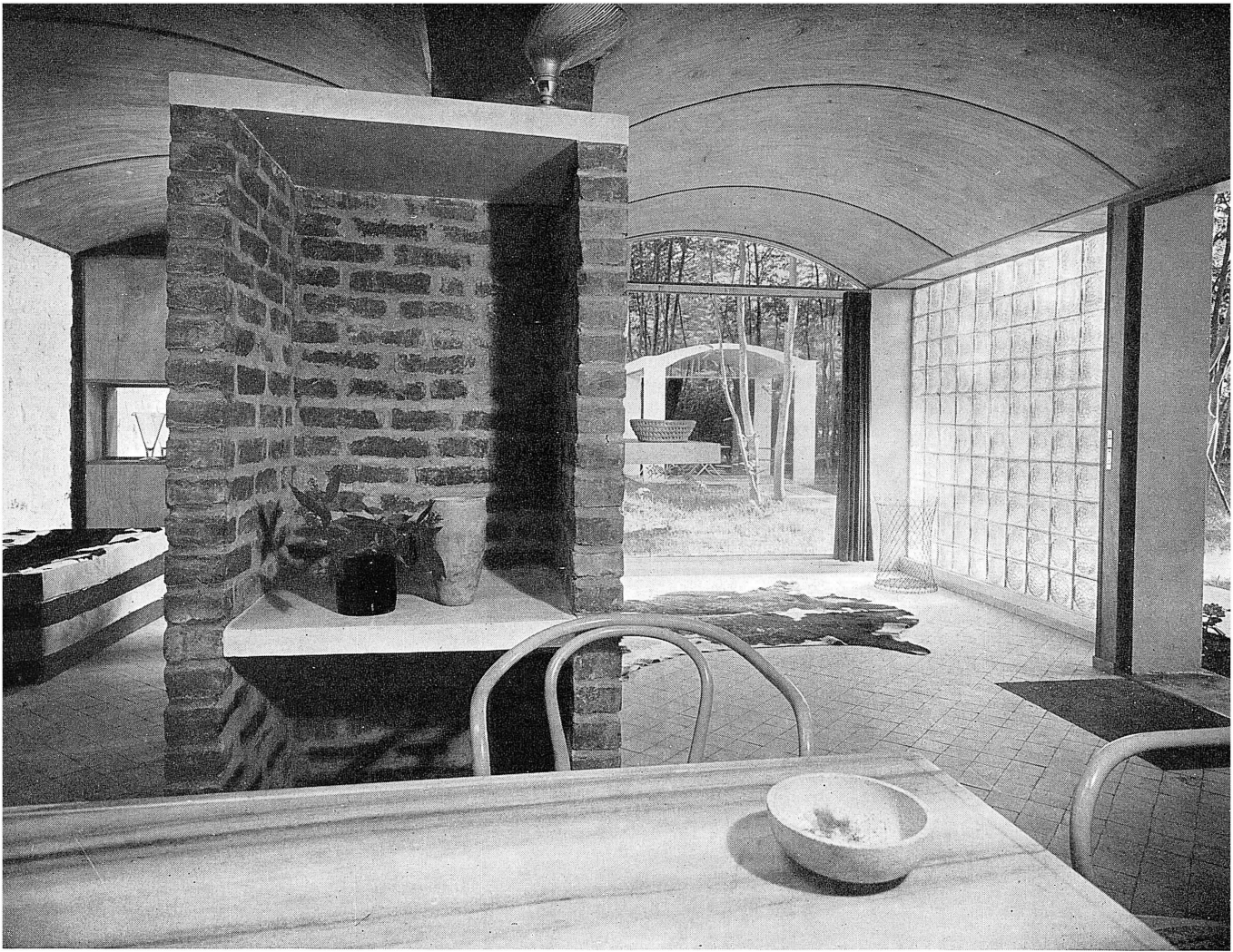
The dramatically poised house at right presents entire walls of glass to the view of San Francisco Bay. But the rear of the house offers the relief of a walled courtyard.

Below is another house by the same architect on the same hillside. Since it was impossible in this case to arrange for a secluded court, the windows are planned to give the view in much smaller doses.

(Harwell Hamilton Harris: two houses in Berkeley, Cal.)







Above. House roofed with narrow vaults of reinforced concrete. Glass block used to form an entire wall, uninterrupted by windows. (LeCorbusier & Jeanneret: weekend house in Vaucresson, France.)

Left. Factory-made panels set between factory-made supporting arches of laminated wood. (Wurster & Bernardi; Ernest J. Kump: system of prefabrication for schools and houses.)



## THE USE OF MATERIAL

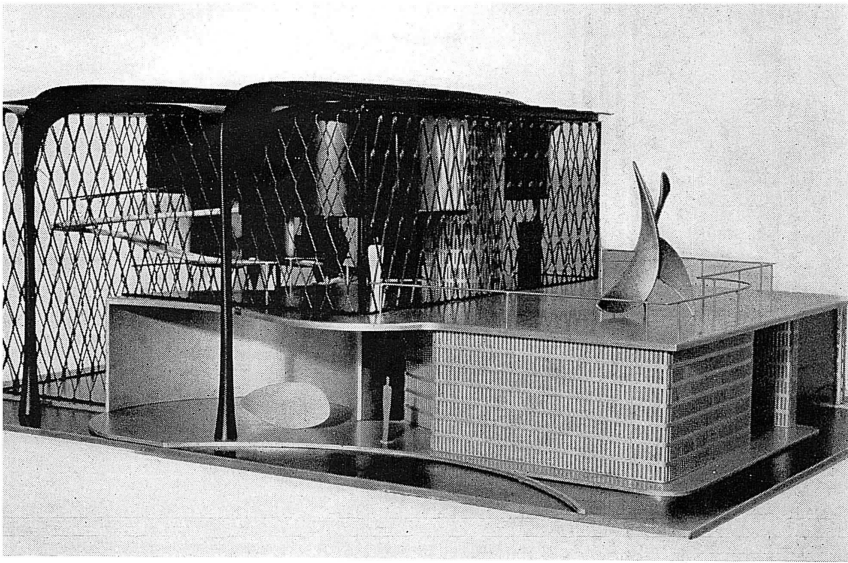
An architect works with the intangibles of space and light, but he defines them with *material*, and it is a basic principle of good architecture that each material be used according to its own inherent nature. Wood and brick, for example, have quite different characteristics, and forms which are suited to the one are false and meaningless in the other. The modern architect accepts these differences as the basis of his design and gives them clean, emphatic expression.

Brick, stone and concrete block are most appropriately used as heavy, unbroken *mass*, for their strength is solely in compression and the only way they can bridge a large opening without extraneous support is by means of the arch. If masonry is used merely as non-supporting, weatherproof curtain walls and the building is actually supported by a steel or concrete skeleton, this qualified function should be made visibly apparent.

Wood is a light material, strong in tension, therefore has a much more varied usefulness than masonry, although it takes considerable upkeep and is easy prey to fire and termites. Long thin pieces are nailed together to form the light netlike framework and the exterior surfacing of most of our houses. Cut into heavier timbers, it can be used as a more pronounced skeleton of widely-set posts and beams. There are not only innumerable ways to use wood in these traditional forms of nailed or notched lumber, but there is the wealth of possibilities opened up by modern techniques. Great rotary-cut sheets can be bonded together with plastic to become tough, flexible plywood, and used as the "stressed skin" of lightly framed structural panels, or steamed and pressed into curved shapes of extraordinary strength. Short strips can be plastic-bonded to form laminated arches of wide span and amazing lightness. Each of these structural techniques will give its own expressive form to the house, affecting the character of walls and roof and openings.

Other materials which lend themselves to infinitely varied use are steel and steel-reinforced concrete. Like ordinary wood, they are well suited to light skeleton construction. Like plastic-treated wood, they can be molded into a multitude of strong and purposeful shapes, and often achieve maximum structural efficiency in graceful curves. Before the war metal was too expensive to find much use in residential construction, but it is likely that this picture will change as armament manufacturers turn to the mass-production of houses and house-parts.

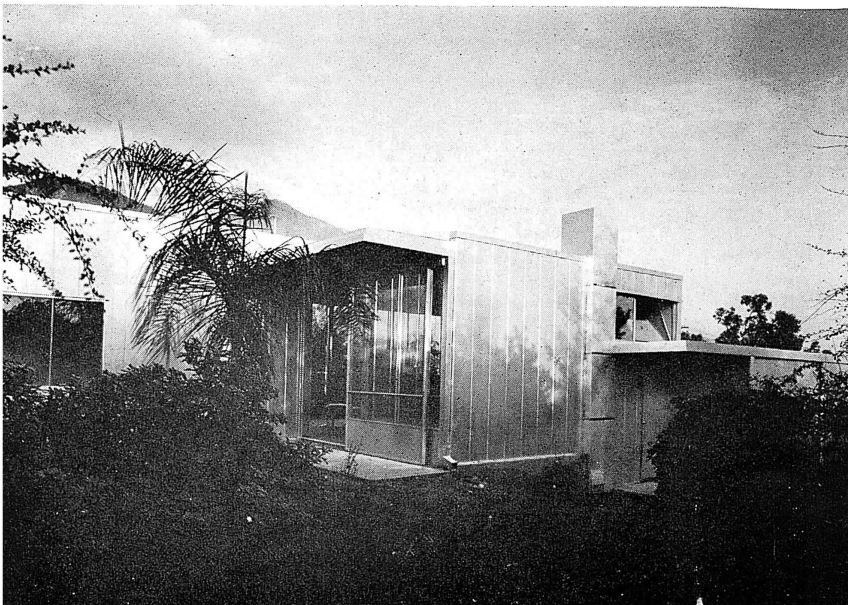
Wood, steel and reinforced concrete can all be used as cantilevers. This simply means the projection of a horizontal member beyond its vertical support,



Scale model of a house in which walls, roof and upper stories would all be suspended from two great welded steel arches. Space could be freely arranged within the air-conditioned external shell. (Project by Paul Nelson.)



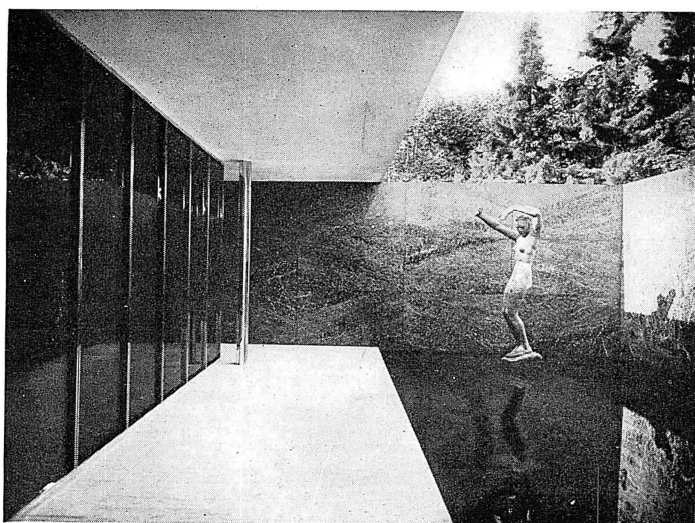
Steel pipes lift the body of the house from the ground. Walls are of standard wood studs with an exterior facing of corrugated iron. (John Porter Clark and Albert Frey: vacation house in Palm Springs, Cal.)



House assembled of narrow pre-fabricated panels of insulated steel. (Richard J. Neutra: house in Altadena, Cal.)



When roof and upper floors are supported by a series of regularly spaced columns, exterior walls and interior partitions support nothing, therefore can be freely placed. (Mies van der Rohe: above, house at Brno, Czechoslovakia; below, exhibition pavilion at Barcelona, Spain.)

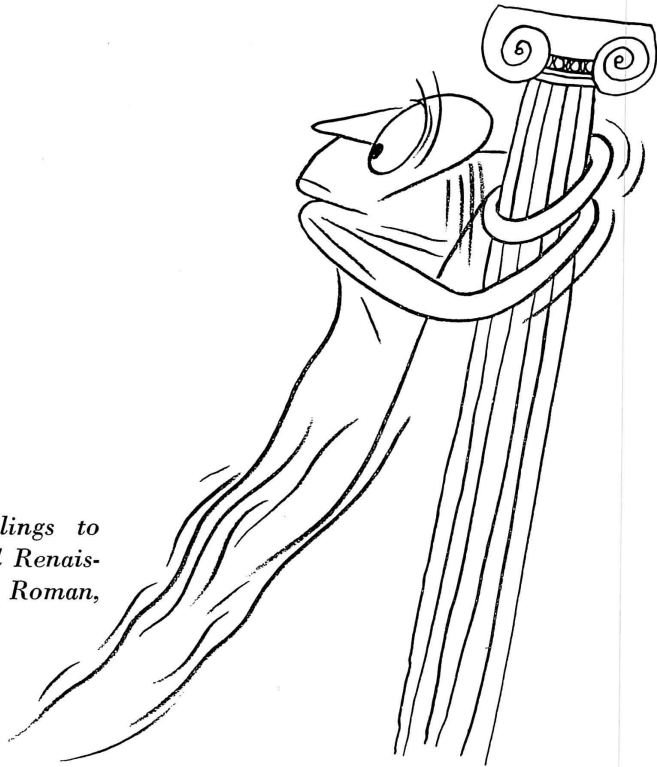






Opposite. Stone is used for the massive vertical piers, reinforced concrete for the great cantilevered balconies which carry the living space out over the water. Each material is given positive poetic expression. (Frank Lloyd Wright: house on Bear Run, Pa.)

*The timid builder who clings to Colonial, which is rewarmed Renaissance, which is rewarmed Roman, which is rewarmed Greek.*



as in a roof overhang. Far from being a purely formal device, it makes solid engineering sense, as a beam is much more apt to sag if it is supported at either end than if the uprights are pushed in towards the center and the ends allowed to project out over them.

With this abundance of materials and structural techniques at our disposal—and we've mentioned only a few of them—why should our houses have to look like ancestral portraits? Must light construction be made to look heavy? Are we to have nostalgic gables and dormers even when a flat or arched roof may make better sense? Must the joints of prefabricated panel-built houses be discreetly hidden from sight? Is the extended cantilever too radically subversive for polite use?

Some of the reluctance to accept new techniques comes from an instinctive dislike of slick surfaces. Their machine-like coldness seems unsympathetic in houses. That is a valid criticism which must be met; nevertheless, there are more suitable ways to avoid smooth shininess in aluminum walls than by covering them up with cedar shingles.

Some of the hesitation has its basis in distrust. If your idea of stability is



based on masonry, therefore on massiveness, the light, attenuated forms which are appropriate to steel and reinforced concrete will seem unstable, restless, dangerous. The more familiar one is with technologically advanced construction, however, the more pleasure one takes in its airiness. Perhaps today's airplane-conscious children will not depend for a feeling of security upon an exaggerated appearance of weight.

The modern architect may hope that some day he will be invited to design a house gaily suspended in mid-air, but meanwhile he will be very happy to give you substantial earth-bound brick walls; and perhaps it is in the nature of a house to be tied securely to the ground. Nevertheless, if you wish to take advantage of the potential economies of the new materials and building methods you will frequently have to make clean decisions between ancient prejudices and sensible construction.

Nor is it enough to use materials economically and with mechanical honesty, that is without actual faking, when one can go much further and give them positive poetic expression. Materials, structure and form can become one, and a building develop as inevitably as the movement of a symphony. This calls for a clearly understandable structural system rather than an opportunistic mixture of elements. It involves avoidance of capricious detail and abhorrence of the empty gesture.

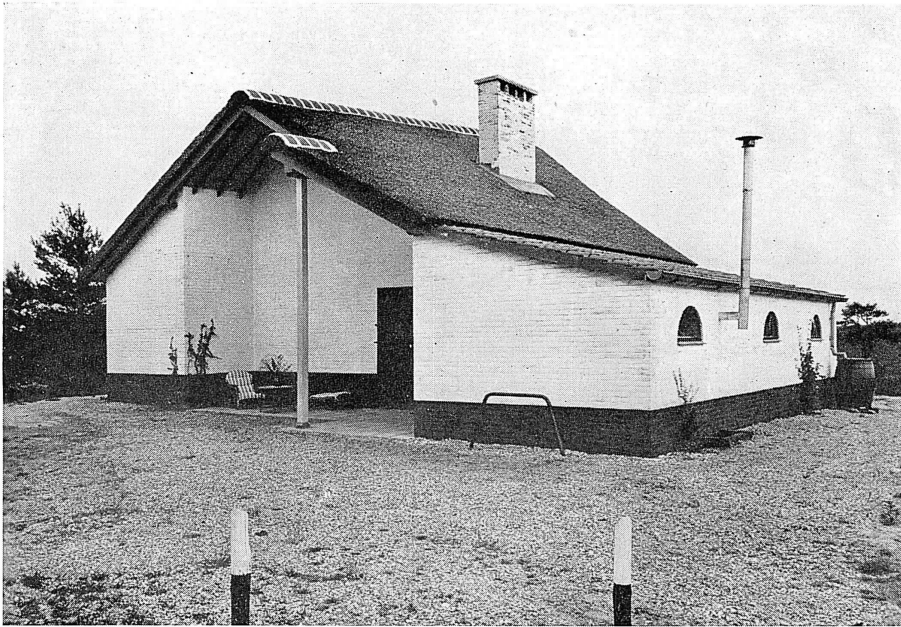
Only a few years ago our run-of-the-mill modern houses, even those of more than ordinary sophistication, tended to look like refrigerators. Their external characteristics were boxy outlines, uniform whiteness, corner-windows, a few free-standing pipe-supports ("lally columns") and a sprinkling of round windows and glass brick. Some architects still find this a convenient formula and dish it out as "modern" in much the same spirit that one might nail a few boards across a gabled, stuccoed house-front and call it "Tudor." All of these elements can occasionally find excellent use, but more often they are the most superficial of mannerisms.

These particular mannerisms are no longer fashionable, but they have to some extent been replaced by a new set. The rich natural texture of wood, brick and stone tends to supplant the smoothly impersonal surfaces of stucco and plaster, but sometimes these materials are misused as chi-chi ornament, devoid of structural significance. In planning, freely curving and diagonal walls supplement the right angle and the straight line, but unless they are closely related to construction and use, they are meaningless.

Good architecture does not strain to be different. It is content to be itself, and it acquires character and personality through self-development and self-discipline, not through affectation.

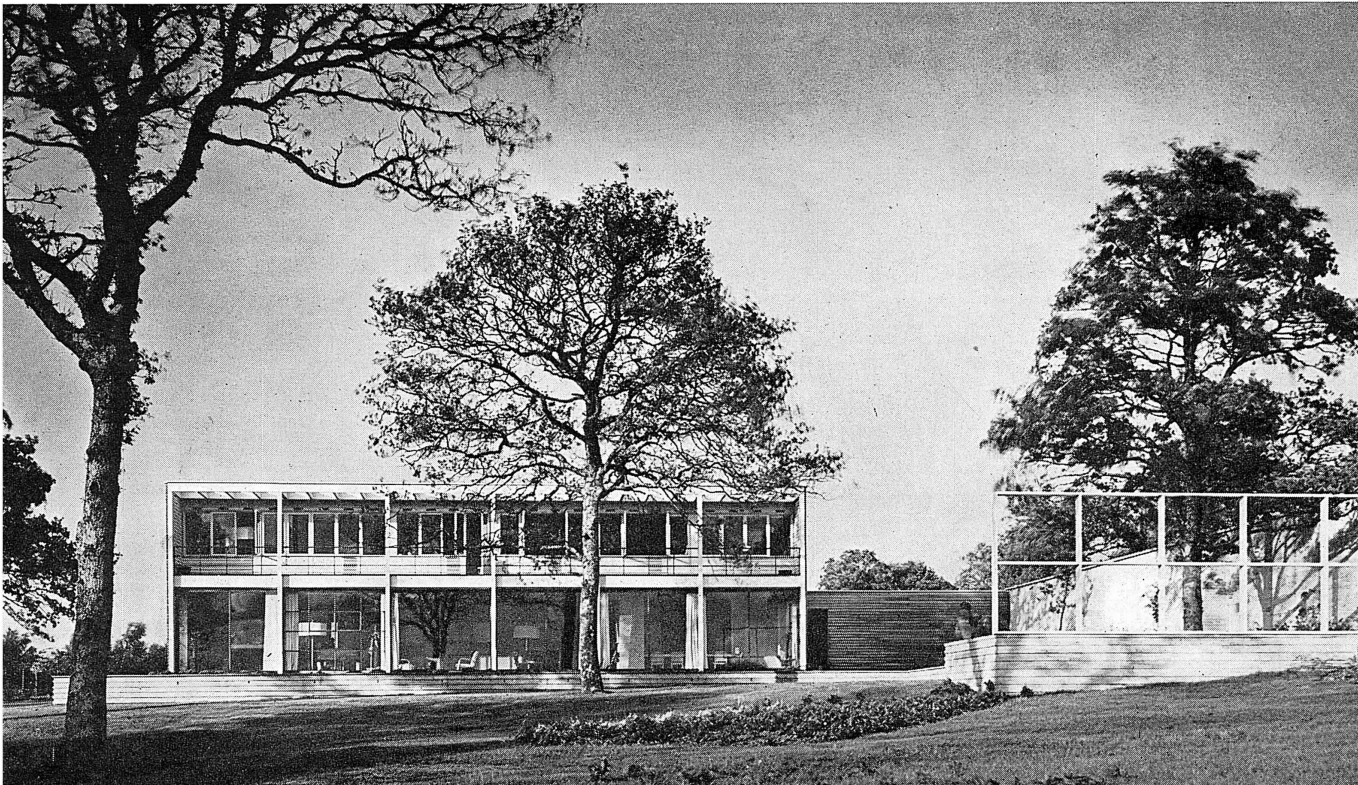


A reinforced concrete canopy, lightly cantilevered from metal columns, steps up the hillside from the main house shown on page 52 to the guest house pictured above. The great window is carried up to the roof, not cut into the wall. (Frank Lloyd Wright: house on Bear Run, Pa.)



The Dutch have always had a way with brick. Notice the massive walls and forthright arched window openings of this recent house by a well-known modern Dutch architect. (G. Rietveld: house in Tongeren, Holland.)

Skeleton of widely spaced wooden posts and beams exposed in a facade of classic regularity and dignity. The brick base of the house is prolonged as low garden walls. (Serge Chermayeff: house in Sussex, England.)

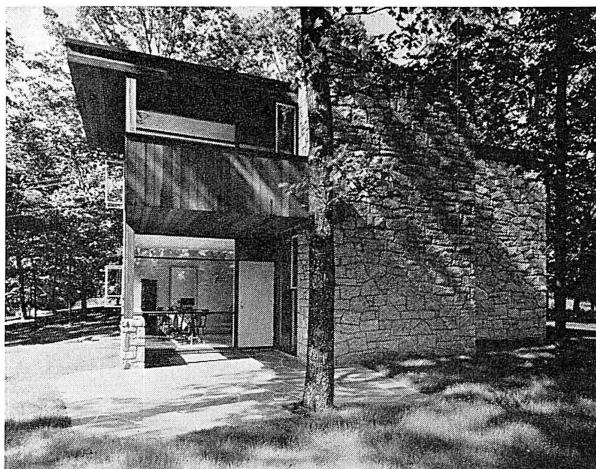






Above. Wood is a material of extraordinary possibilities, and the familiar forms are not necessarily the most satisfactory. (Harwell H. Harris: house in Los Angeles, Cal.)

Right. Stone is used for massive walls, unbroken by windows. Openings are concentrated, and framed with wood. (Marcel Breuer: house in Ashville, N. C.)

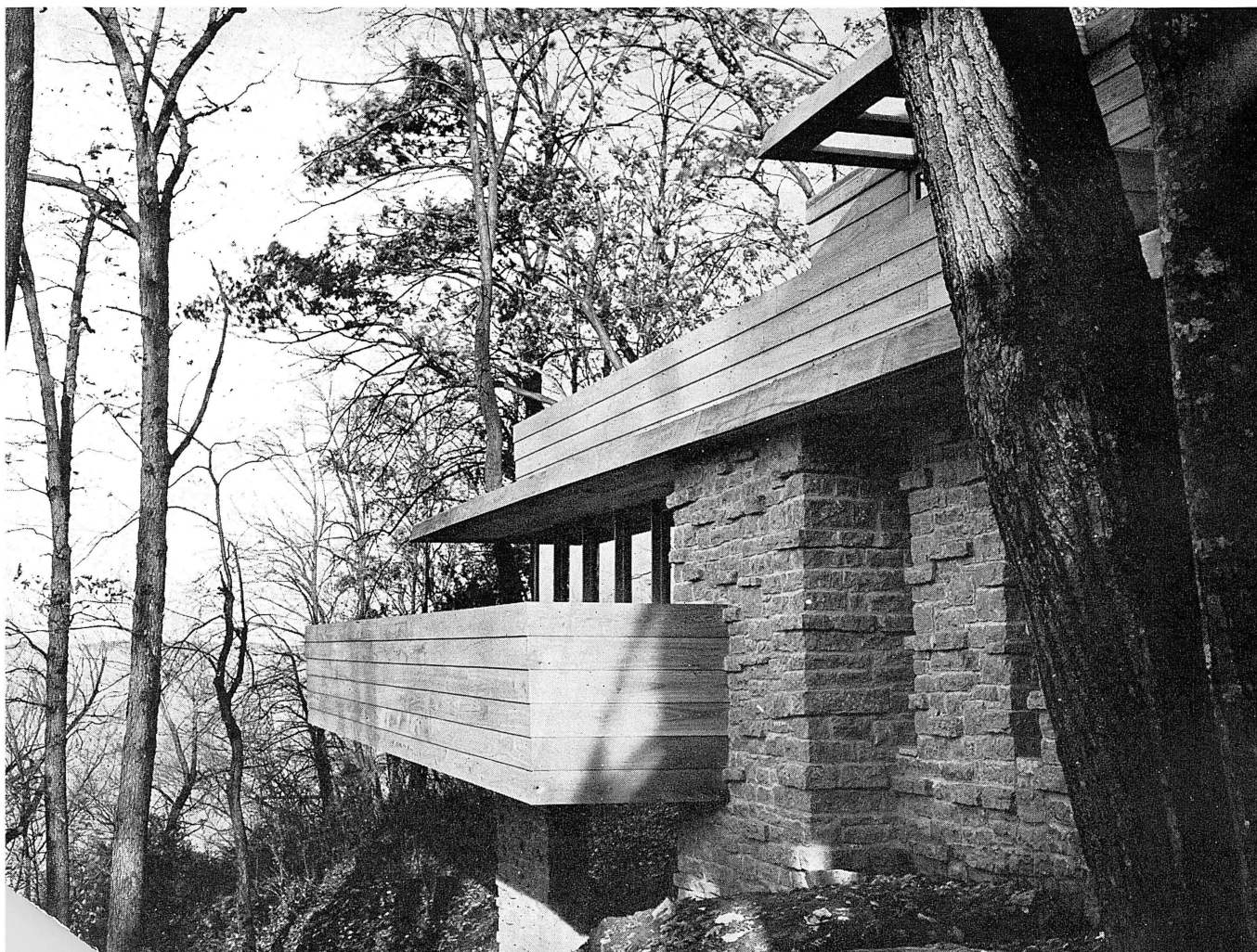


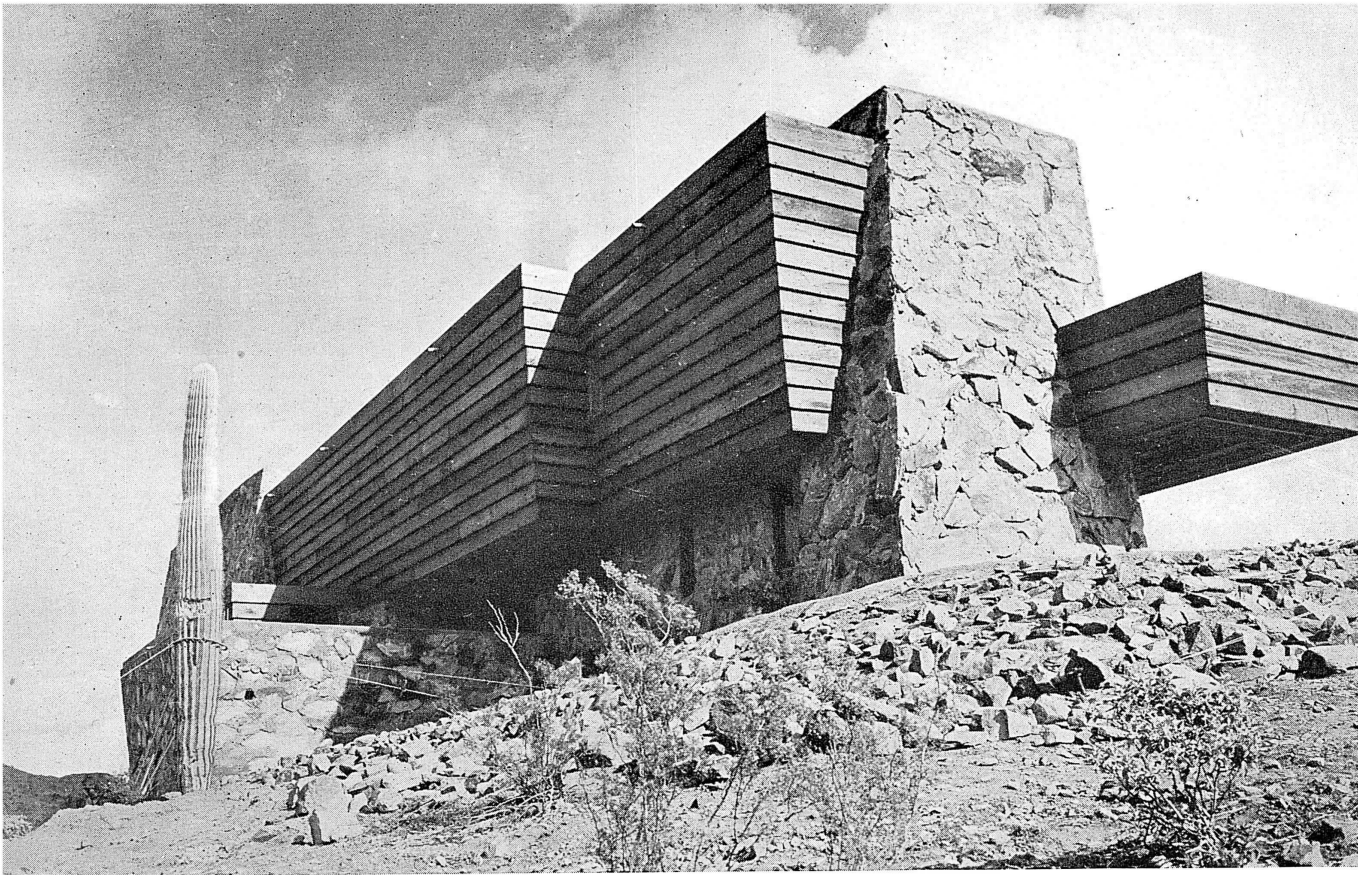




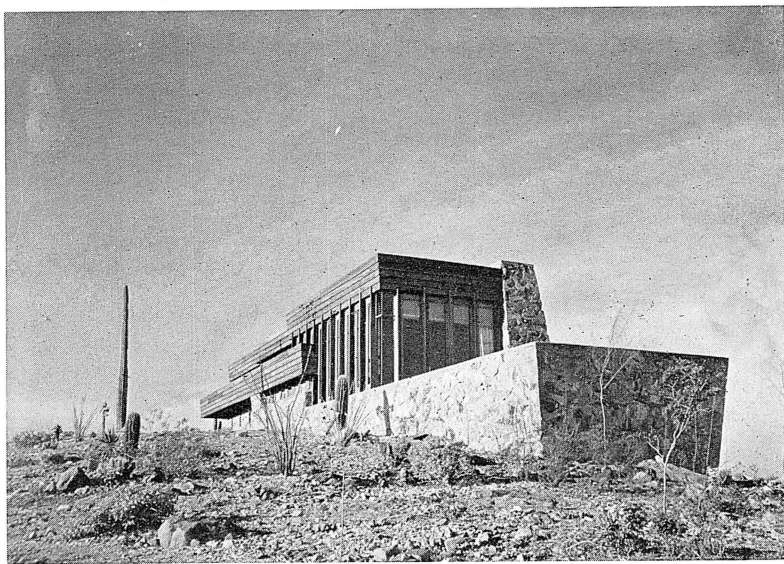
Left. Rocks from the surrounding desert were piled in rough wooden forms, and cement poured over to form the waist-high walls. Above this heavy base is a superstructure of wood and canvas-covered flaps. (Frank Lloyd Wright: desert camp near Phoenix, Ariz.)

Below. Massive stone piers, unbroken by windows, are effectively contrasted with light wooden cantilevered balconies and overhangs. (Frank Lloyd Wright: house at Madison, Wis.)

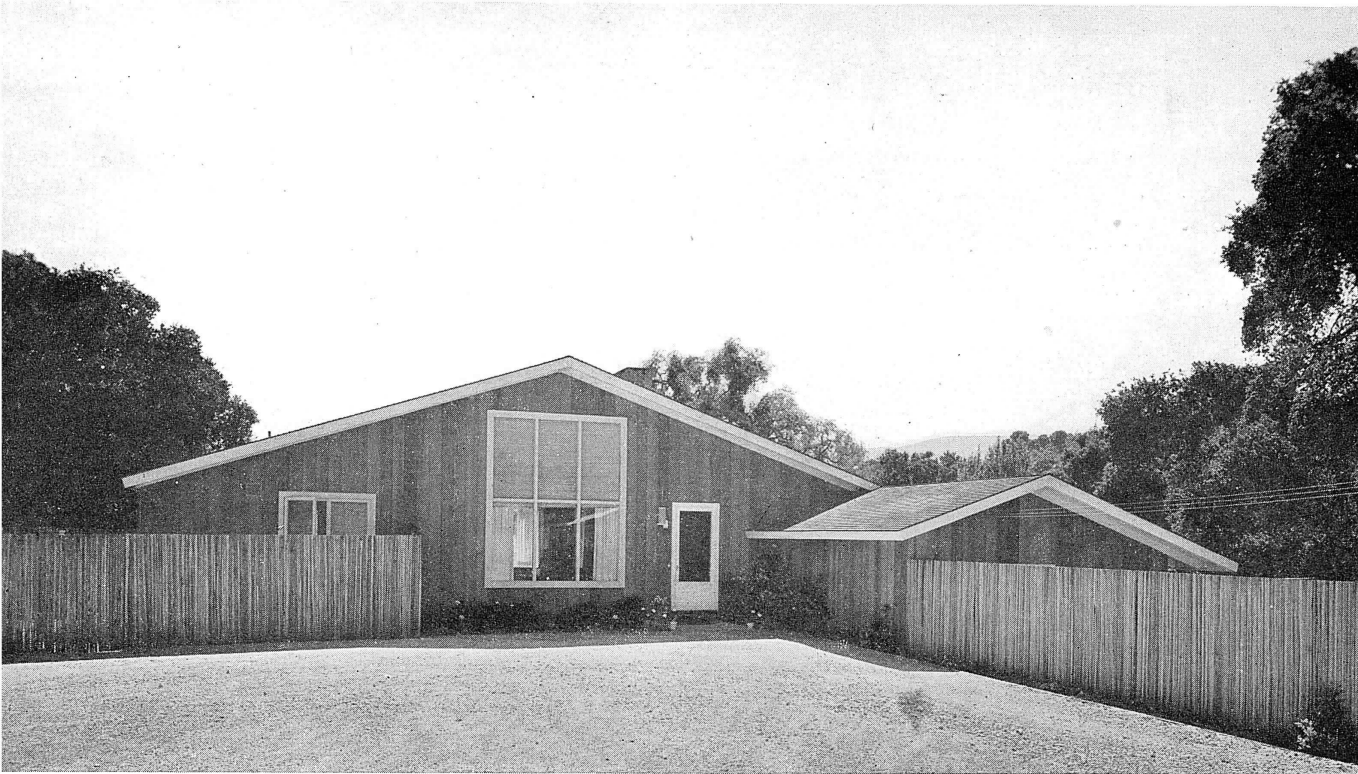




A statement of the nature of stone and the nature of wood.  
(Above and below. Frank Lloyd Wright: desert house near Phoenix, Ariz.)



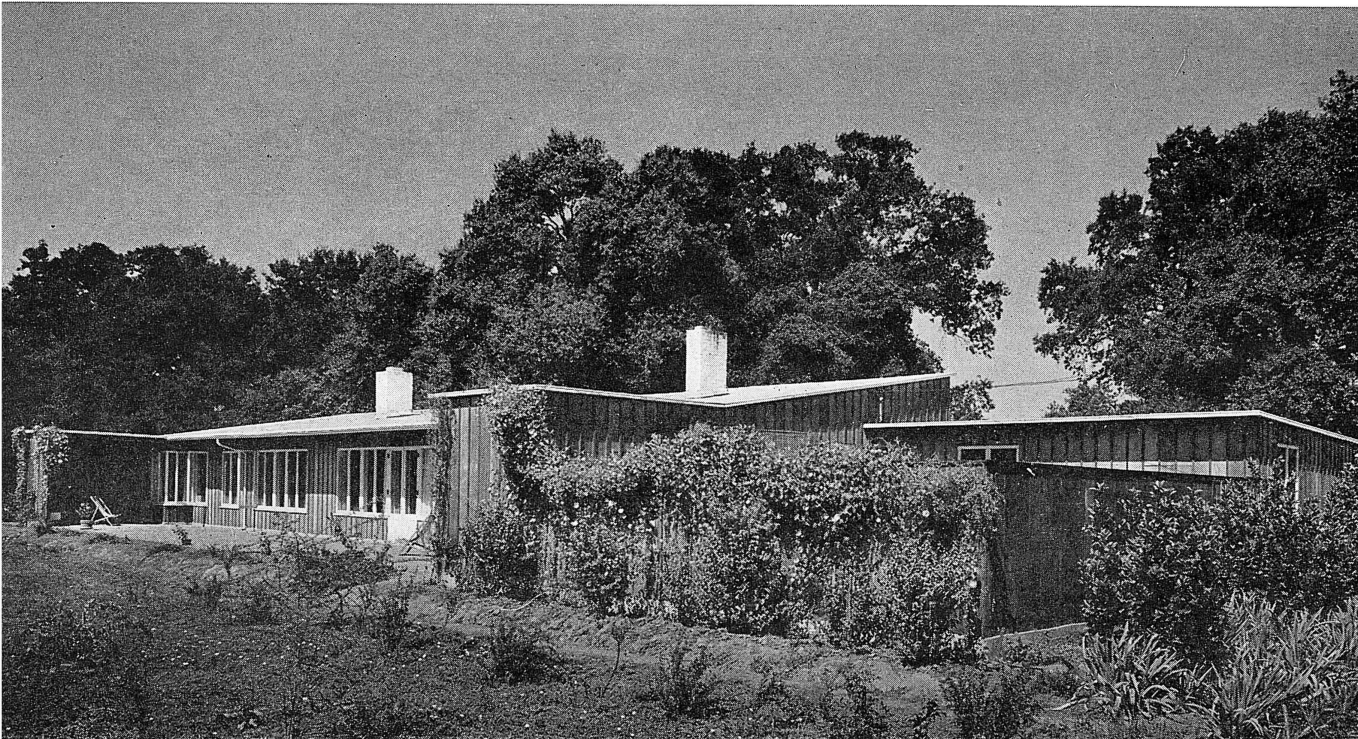


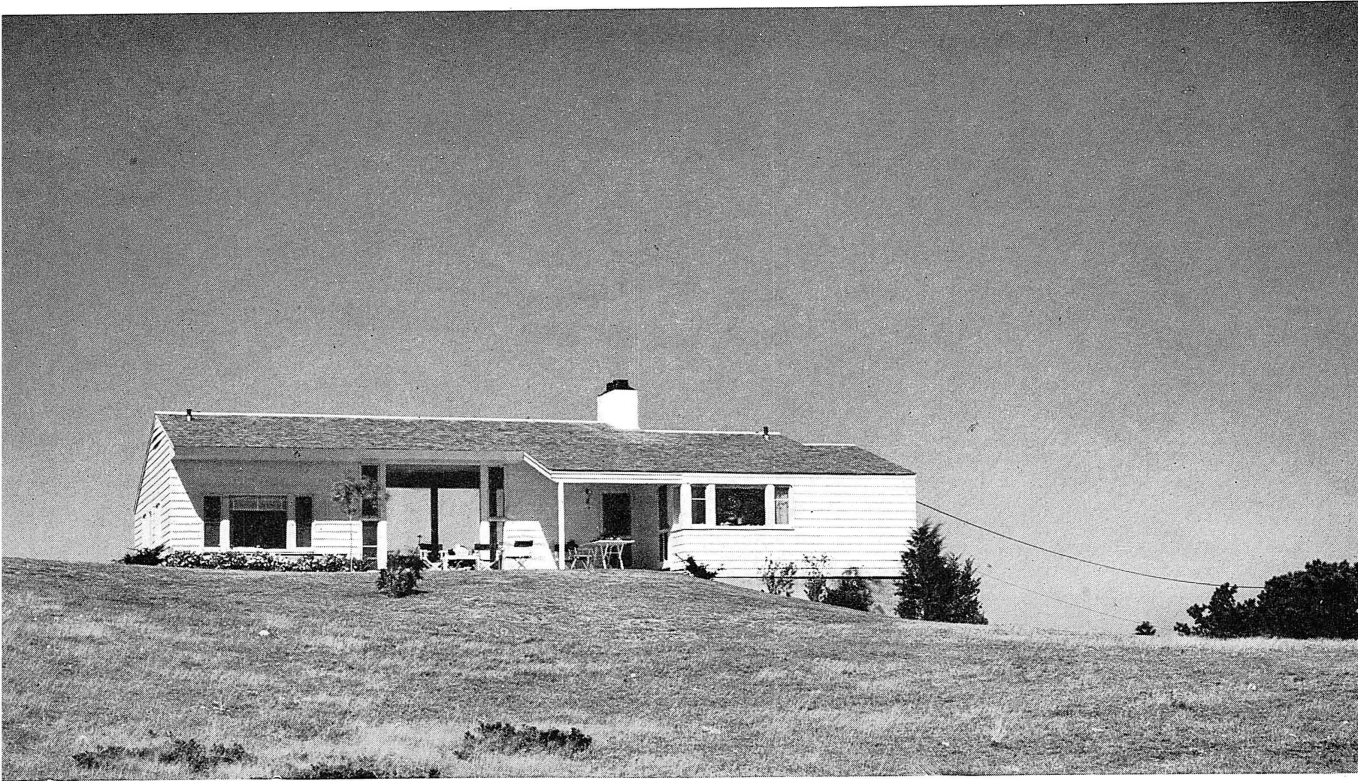


But the standard wood stud frame is still an excellent possibility, and demands no startling new forms.

(Gardner A. Dailey: house in Woodside, Cal.)

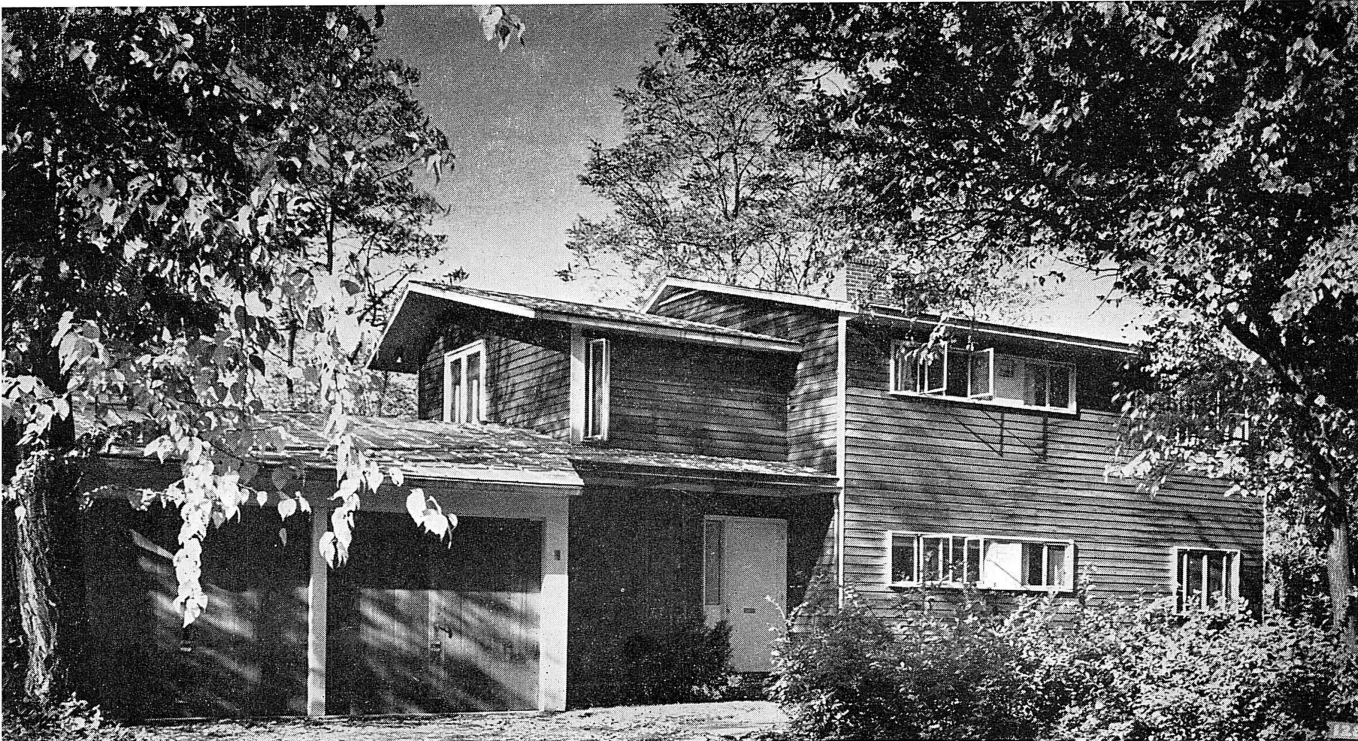
(William W. Wurster: house in Stockton, Cal.)





(Carl Koch: cottage at East Sandwich, Mass.)

(Rudolf Mock: double house in Princeton, N. J.)







Pattern and texture are lively, but their concentration in well proportioned, precisely defined surfaces makes the room seem spacious. Molded plywood furniture designed by Marcel Breuer. (Gropius & Breuer: house in Lincoln, Mass.)

## FURNITURE

The extent to which your architect will be responsible for the interior is up to you. If you've taken the trouble to find someone who is able and imaginative, and if the house is good, it would be foolish not to consult him, as you will want the furnishings to underline the positive architectural character, not deny it or compete with it. Don't in any case go to an interior decorator without first getting the architect's advice: the feud between architects and decorators is well-founded, as the "decoration" of a modern interior is too often its desecration as well.

Sometimes a house is designed with such architectonic completeness as to limit the owner's freedom of action. The architect's hand is so omnipresent that it would seem an affront to move a chair or hang a picture. If the architect is a *great* architect, the house a masterpiece, and the tenants appreciative, then the joy of living there may compensate for the frustrations which are involved.

It happens that there are many good architects, but very, very few great ones. And if your architect is merely good, not great, then there is probably a limit to the extent to which you will want him to surround you. But he will probably be no more eager to surround you than you are to be surrounded. When the modern architect was a lone voice in a wilderness of Colonial false-fronts and reproduction Chippendale, he tended to be something of a prima donna. Now that he is recognized as a supremely useful citizen, his tones are less shrill and there emerges a new and very becoming humility.

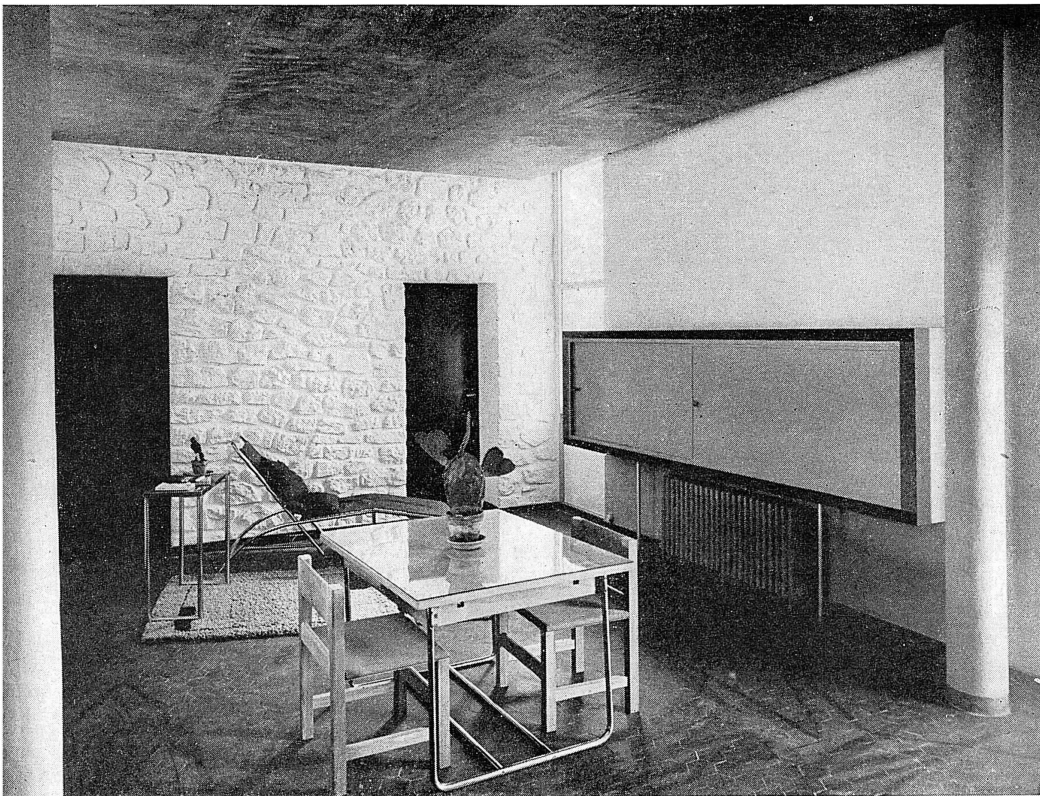
Ideally, a house should be a unified whole rather than an aggregation of separately designed façades and separately "decorated" rooms. Inside and outside aren't separate elements, but different aspects of the same thing, often composed of the same materials. Unity can be over-emphasized, however, as the best interiors are not the most obviously harmonious, but those in which one feels most at ease. Some of the most distinguished rooms are a little on the shabby side.

Objects of varied age, style and parentage give a fine sense of use and continuity, while a conventional assortment of standard modern pieces can be just as tiresome and characterless as the "period suite" of the department stores. Delicately scaled antiques can easily be combined with modern furniture, and if the house is elegant, spacious, and rather austere, it can even take an occasional elaborate, important piece to great advantage. But authenticity is important. Old furniture is like old houses in that the more one respects the originals, the more one despises a copy. If you can't have the real thing, settle for something frankly contemporary.



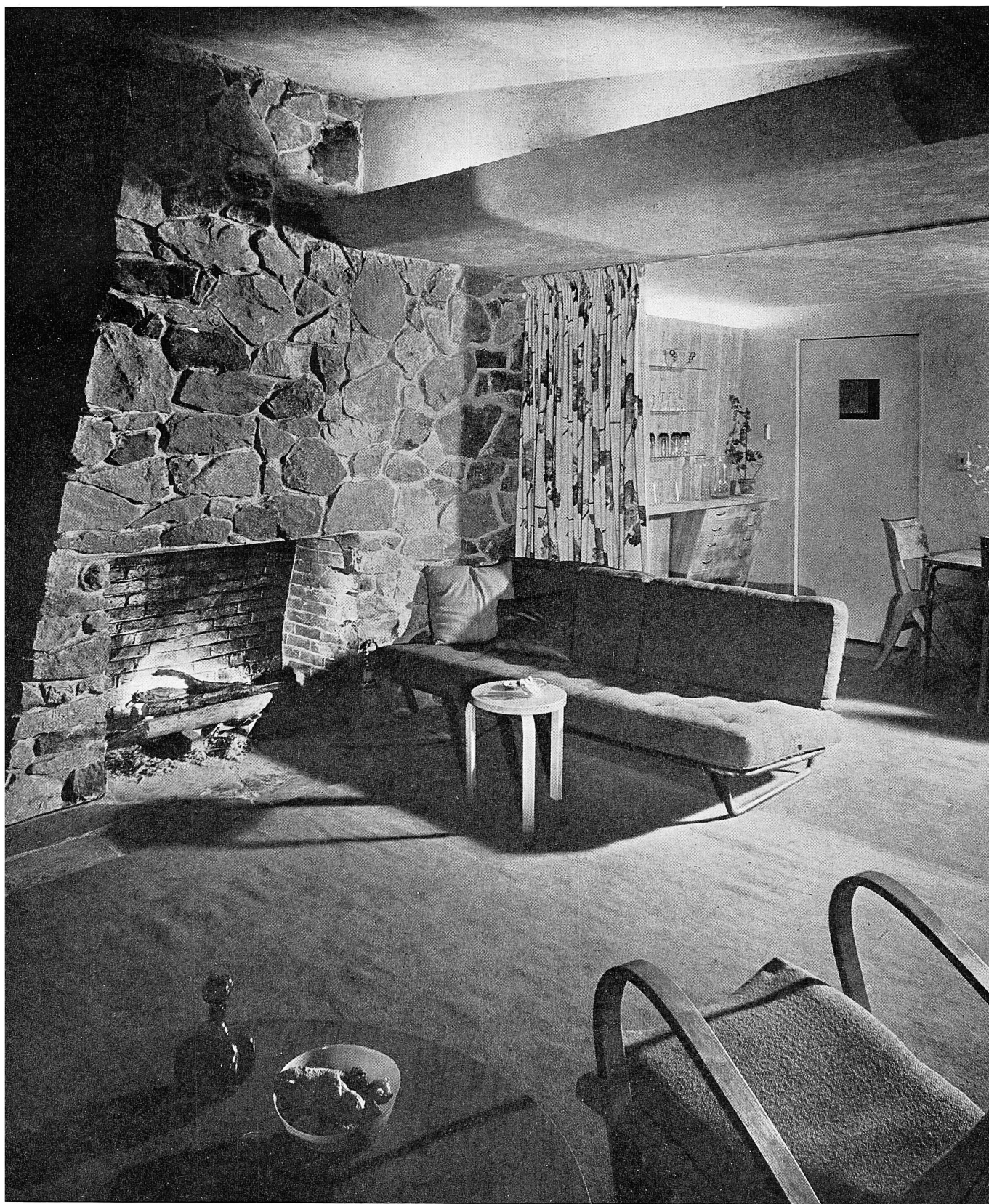
Opposite. A boldly patterned curtain separates living and dining space. (Carl Koch: house in Belmont, Mass.)

An architect's own living room. Casual ease sacrificed to formal elegance. Furniture by Mies van der Rohe. (Philip Johnson: house in Cambridge, Mass.)



An early and influential experiment in the combination of rough and machine-smooth materials. (LeCorbusier & Jeanneret: house near Hyères, France.)





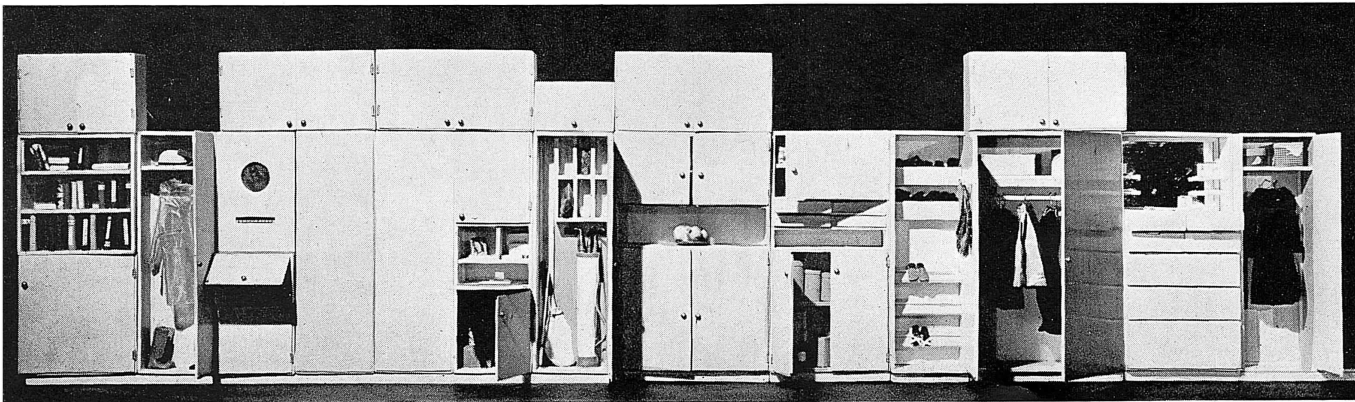


Much of what passes as modern furniture in the department stores is modern only in the negative sense of being non-traditional. The notion that good modern chairs and tables are rectangular, massive, and "simple" could scarcely be less true. Most of the best chairs are curvilinear, for they follow the lines of the body. And they are delicate and complex in form, as their structure is usually revealed and dramatized, not hidden beneath literal or figurative slip-covers. The properties of new materials—laminated wood, for example—are exploited in construction of daring lightness, and the results are naturally quite different in appearance from the stick-built chairs of the past.

Structural elegance is occasionally pursued for its own sake with a result considerably more beautiful than comfortable, and that over-specialization which is a regrettable tendency in kitchen equipment is also evident in modern chair design. Too often they are designed for one particular posture and that alone. If you like to curl your legs under, or sling them over chair arms, there are few answers as good as the ugly, ponderous, old-fashioned club-chair.

Since most of the chairs and tables give an effect of line rather than of mass, they seem to occupy very little room. Spaciousness is furthered if cabinets, desks and shelves are either built in or purchased as related standard-dimensioned sections which can be grouped together in various ways, added to, subtracted from.

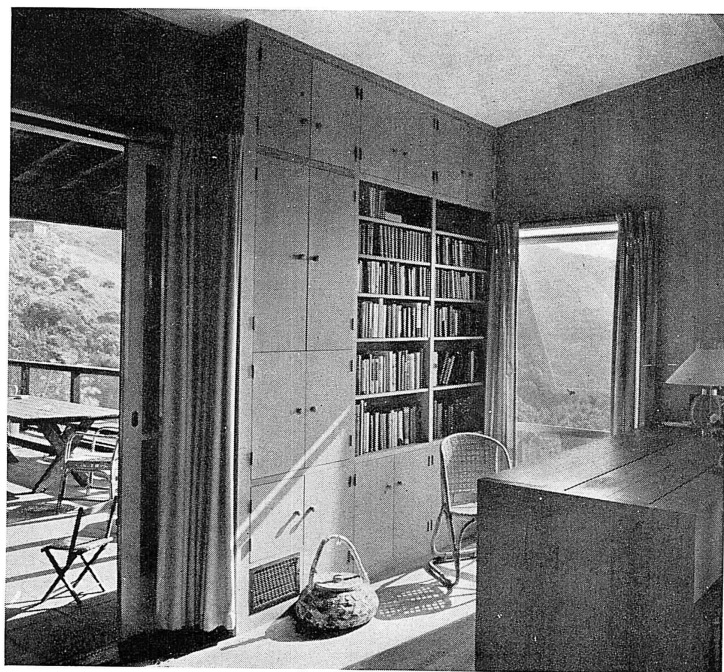
Maintenance and cost are no casual considerations. Good modern furniture is easy to care for, as it is free of dust-catching ornament and often topped with washable materials such as linoleum, plastic and glass. But it is generally rather expensive, partly because large-scale production has not yet been possible. As the demand increases, prices should go down. If you can't afford to buy modern furniture, and must get along with furniture which is neither really old nor really attractive,





Above. Chair of plywood, fitted with rubber and fabric, molded to give continuous support to the sitter. The sectional cabinets may be combined in any fashion on benches of various lengths. The two-legged table ties in with other units to form a desk. (Furniture by Eero Saarinen and Charles O. Eames.)

Right. Built-in desk, cabinets and shelves. (William W. Wurster and Theodore Bernardi: house in Berkeley, Cal.)



Opposite. "Storagewall" composed of prefabricated cabinet units which may be grouped as desired, and used as a partition between rooms. (Designed by George Nelson and Henry Wright.)

it will be no more of a disadvantage in a modern house than elsewhere, and it is possible that the setting will stimulate you to reconstruction and repainting.

For upholstery and curtains there are wonderful richly textured woven fabrics, and fresh modern prints which are a delight in themselves and which can be used to contribute to whatever feeling of space and scale and intimacy may be desired in a particular room. The more distinguished textiles are usually high in price, but one can often do very well with commonplace muslin, corduroy, sailcloth and printed dress goods.

Lighting fixtures are conspicuous by their absence, as the wall or ceiling "fixture" tends to be replaced by less ostentatious devices, often designed by the architect for incorporation in the structure of the house. When wall brackets are used, or floor or table lamps, the fact that they are *electric* is frankly recognized in form and finish. They resemble neither flaming torches nor candle sconces, but they are often remarkably handsome.

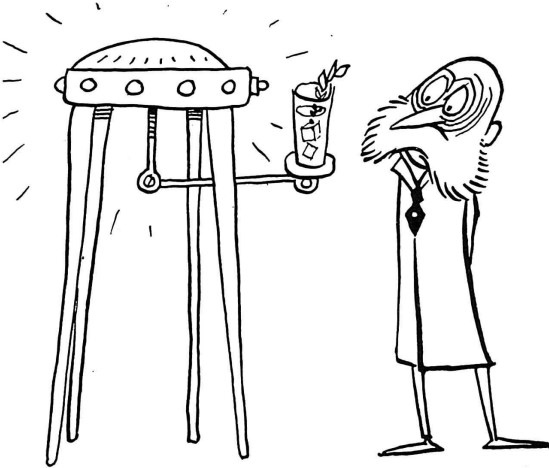
Not so very many years ago it was possible to accuse the typical modern interior, here and abroad, of cold impersonality, even asceticism. Smooth white walls and empty space were insistent and the shiny furniture, though often beautiful in itself, was small concession to the demands of the flesh.

The picture has changed. Walls have taken on a new liveliness as architects have rediscovered the warm subtle color, the naturally varied texture and the solid durability of wood and brick and stone. Furniture, too, has become more friendly, largely through the influence of the Swedes, a wise people who know that humanization is quite a different thing from vulgarization. They saw that the more intimate material, wood, was as good an answer as metal to the need for light, mass-produced furniture, and they found that their bold handwoven and printed textiles and hand-made pottery appeared to great advantage in the new interiors.

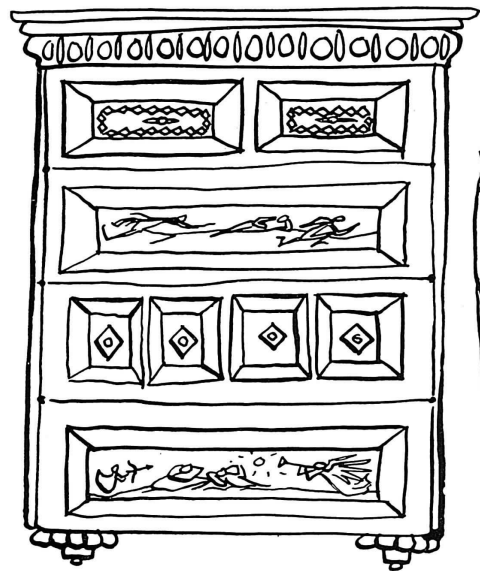
Most people are happy to welcome into their houses not only natural materials but nature itself. The result may be anything from a few potted plants or vines to an entire wall of greenery, a room built against an exposed cliff, or an inside-outside garden, perhaps complete with pool or stream.

Your house, then, can be a snug retreat or a startling approximation of a rocky bower. It can be formal or casual, elegant or homespun, bare or busy, bold or discreet. The choice is your own. There is only one dogmatic rule: make sure that each thing is a pleasant authentic object which you honestly like, and that nothing is included *merely* because it came in a set, or because it's new and chic, or because it's expensive, or because it's a hundred years old.

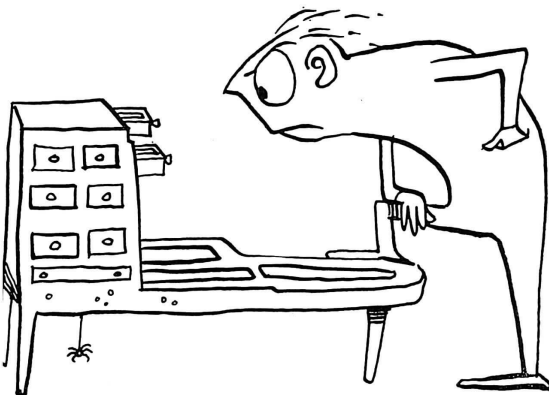
*They came in a set*



*It was once chic*



*It was expensive*



*The ancient object*





(C. Koch, H. Jackson and R. Kennedy: house in Belmont, Mass.)

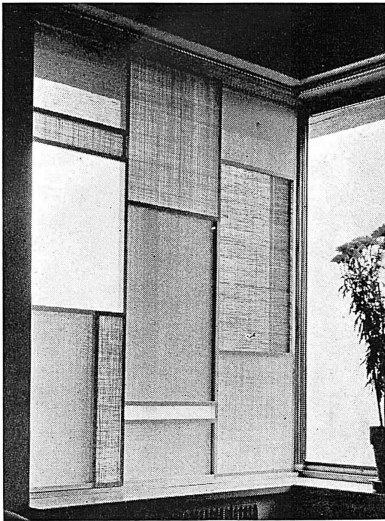
(J. P. Richardson and Huson Jackson: house in Charles River, Mass.)



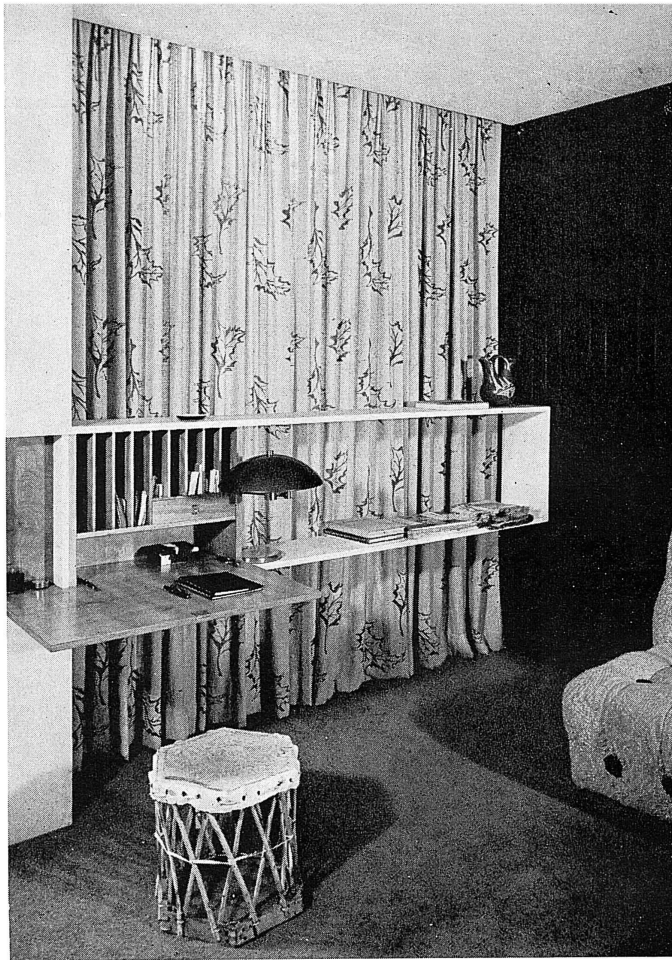


Antique dining furniture. (W. Curt Behrendt and John Spaeth, Jr.: house in Norwich, Vt.)





Window-screen of fabric in various textures and colors. Designed by Xenia Cage.



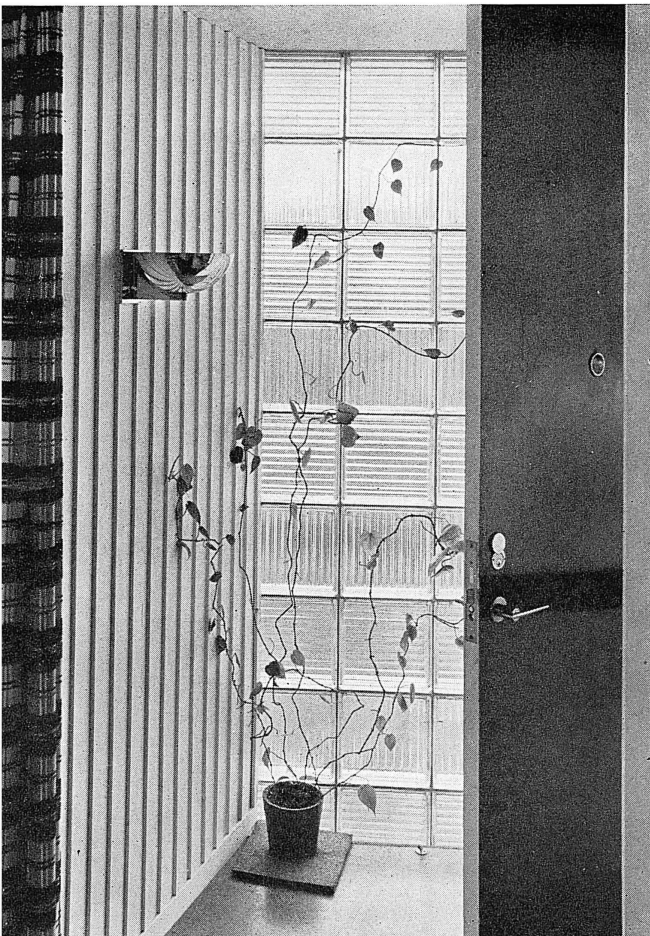
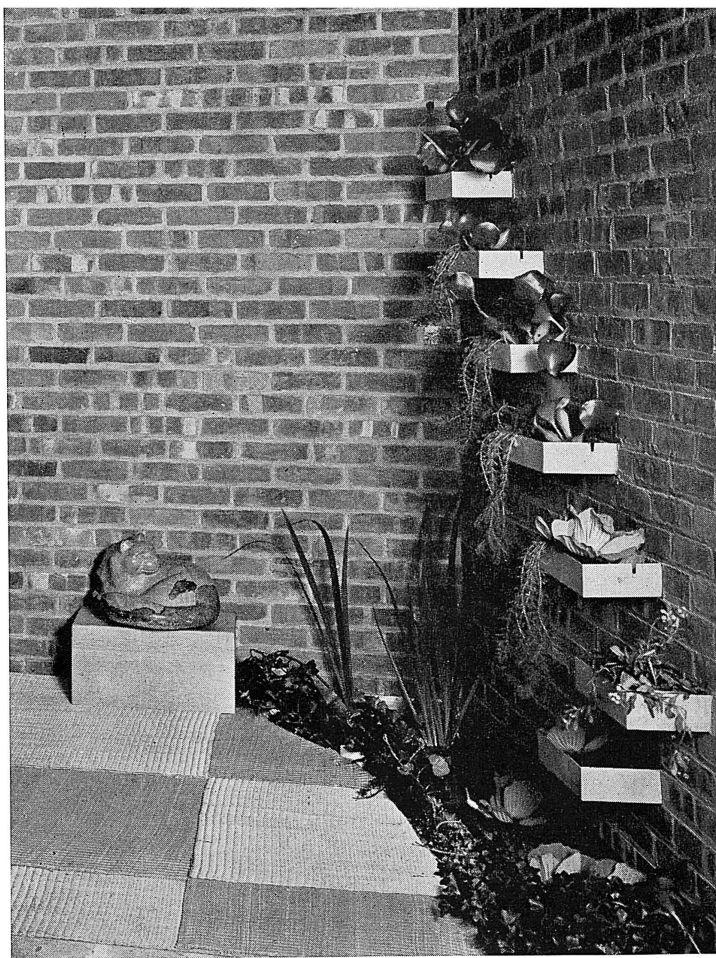
Above. Desk and shelves suspended before a printed curtain. Each wall is treated as an independent plane. (L. L. Rado: showroom in Boston, Mass.)



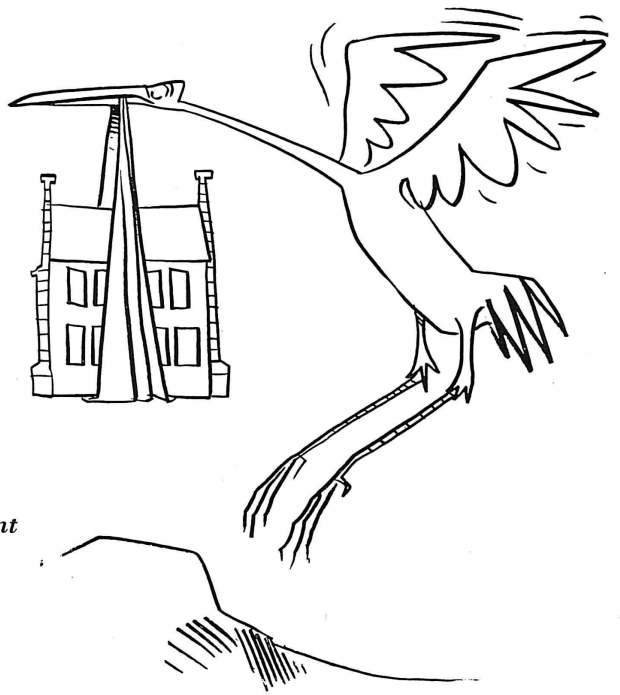
Left. Conversation group. Chairs by Bruno Mathsson. (Philip L. Goodwin: apartment in New York.)



Right. Water can be used inside as well as out, and a small amount can be as effective as a torrent. Here a series of planted water-boxes is arranged against a brick wall to allow water to drip from one to another. (Edward D. Stone: exhibition room.)



Left. A wall of glass brick gives light and privacy to this entrance hall and throws into sharp relief the texture and pattern of the plaid curtain, the vertically boarded wall and the wood-panel door. (Walter Gropius and Marcel Breuer: house in Lincoln, Mass.)



*the house that arrives by accident*

A house which belongs to its site. (Frank Lloyd Wright: house in Palo Alto, Cal.)



## HOUSE AND SURROUNDINGS

We've been talking about houses as though they were castles in the air, whereas one of the best things about them is the very fact that they are earth-bound. A good house looks as though it belongs to its site, not as though it arrived there by accident, and many are so intimately related to specific sites as to be unthinkable without them.

### choice of land

It would be wise to consult your architect on the choice of land, as he is better able to assess its advantages and disadvantages in terms of relationship to street, utilities, sun, wind, view, neighboring buildings and incipient blight. This last is an important point, too often overlooked. If the neighborhood deteriorates you will soon find yourself with a sadly depreciated investment. If you are buying land in a subdivision, make sure that it is a progressive development which offers traffic-free streets and convenient places for shopping, and for education and recreation for every age. Even if you wish to keep yourself to yourself and aren't interested in community life, your house will be easier to sell if it has these assets.

Don't buy a lot forty or fifty feet wide, as it will be impossible to put up a decent free-standing house. A detached house may be a worthy symbol of family independence and self-sufficiency, but it's an empty gesture on a narrow lot. Your side windows will peer into neighboring houses and the land between will be practically useless. Even a 60-foot lot is difficult.

If you can afford only a narrow frontage, you will do much better to put your money into a well designed row or double house—if you can find one. Good examples are scarce. Or you might find other people with similar needs, form a cooperative, engage an architect and build a row of houses. Intensive land use and shared walls make the row house much more economical than the free-standing house, yet it offers similar advantages of independent entrance and private garden.

It isn't necessary to avoid steep or rugged land. Digging and filling are expensive, but an imaginative architect will welcome the special character of the site and will adjust the house to the land, rather than the land to the house. Very little grading will be necessary. He will step the house down the hill, getting extra stories on the steep side, or he may set it on posts, or even project it out into space.

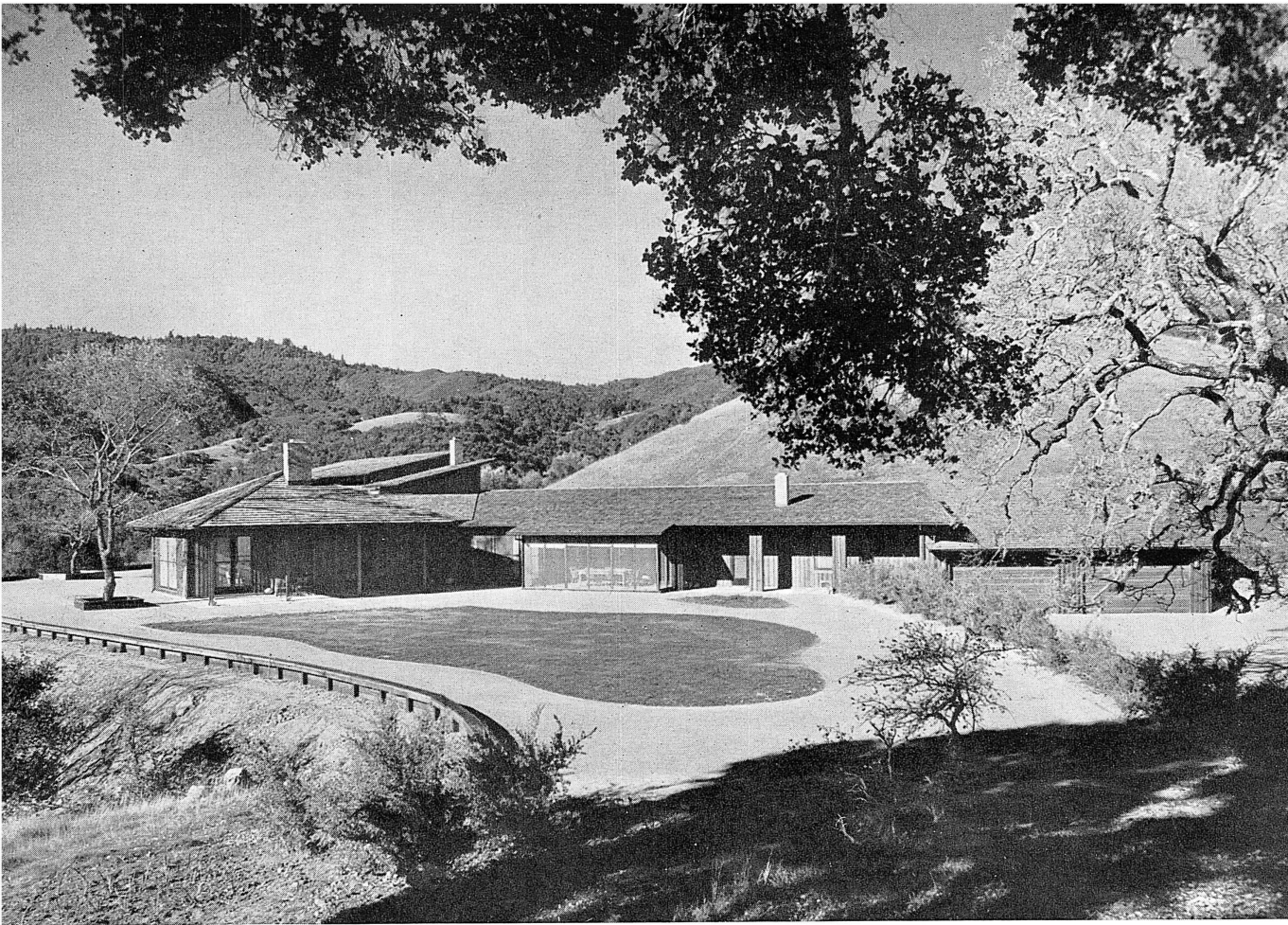




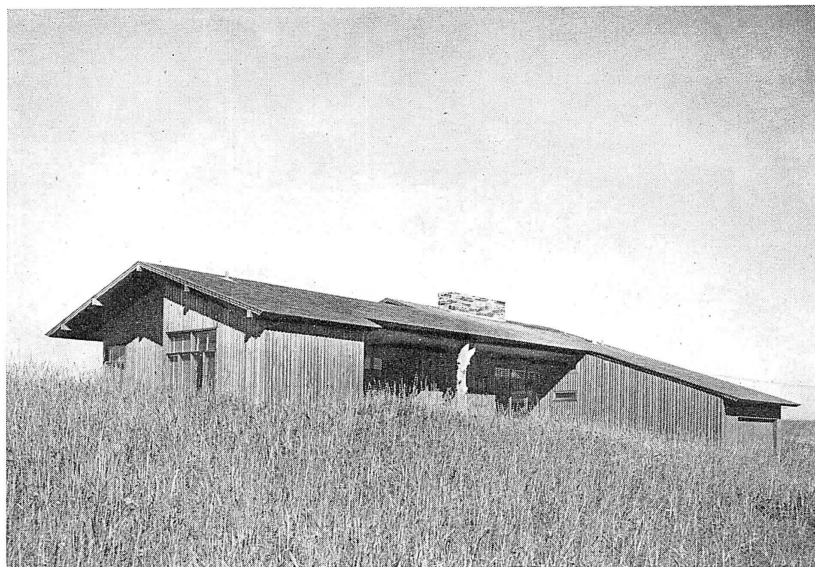
Left. A house which fits easily into its flowering hillside. (Richard J. Neutra: house in Palos Verdes, Cal.)

Below. A romantic intermingling of architecture and nature. The living room floor is below the surface of the pond. (Alden B. Dow: house in Midland, Mich.)



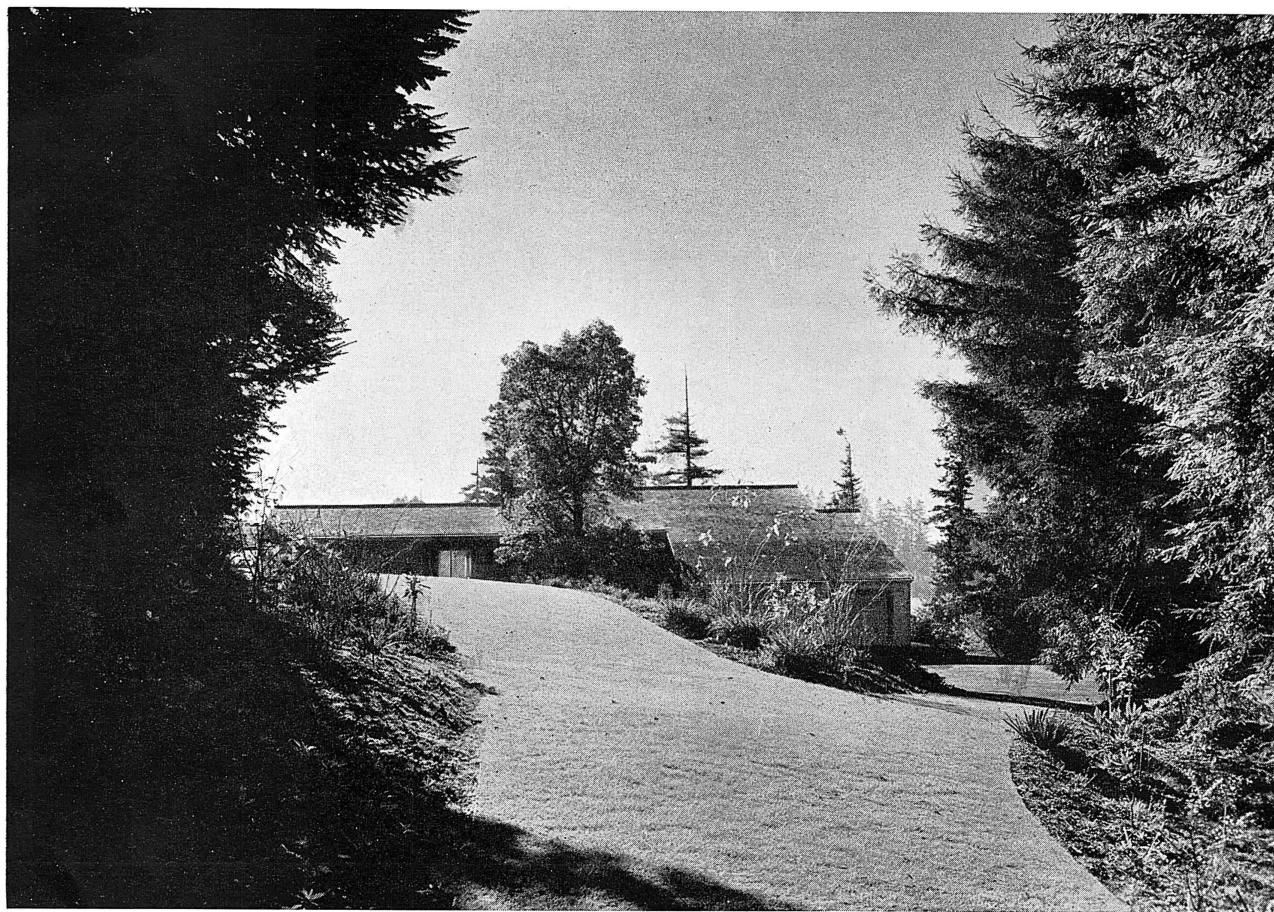


Above. A low, horizontally extended house on an irregular site. (William W. Wurster, architect; Thomas D. Church, landscape architect: house near Gilroy, Cal.)

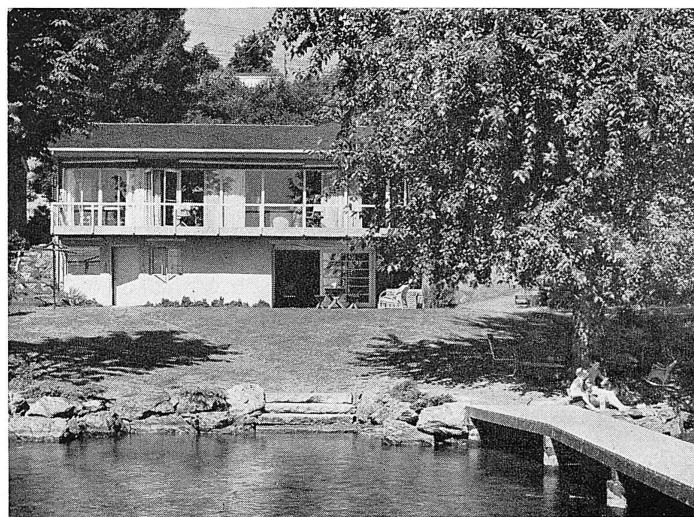


Right. Sweeping roof, weathered wooden walls and beach grass. (Pietro Belluschi: cottage at Gearhart, Ore.)





Above. A house built against a slope. The landscaping, designed by the architect, accents the natural contours. (John Yeon: house in Eureka, Cal.)



Left. Built into the hill, this house gains a pleasant garden room on the steeper side. (Paul Thiry: house in Seattle, Wash.)

(Opposite. Frank Lloyd Wright: house in Pasadena, Cal.)







"If the house is set close to the ground . . ."

(Frank Lloyd Wright: house in Minneapolis, Minn.)



"it can extend into the garden as terraces and courts . . ."

(William W. Wurster and Theodore Bernardi: house in Mill Valley, Cal.)



"and the garden, in its turn, may penetrate into the house."

(Joseph P. Richardson and Huson Jackson: house in Charles River, Mass.)

## a livable garden

Leave on the street what belongs on the street: garage, entrance, perhaps an enclosed kitchen yard. Otherwise think in terms of sun, view, domestic privacy and outdoor living.

The land should be just as carefully planned as the house itself. The two problems are really one and the same, as house and garden together constitute the living space. Questions of utility, space, light and upkeep are as important in the one as in the other, and the modern landscape architect works very much like the architect in his choice and arrangement of materials, but with the handicap that the full effect of his labors is not so immediately evident. Thinking in terms of maximum usefulness and minimum maintenance, the landscape architect likes to pave large portions of the garden with brick, gravel, asphalt or wood block. Such materials require little upkeep and are a splendid foil for concentrated areas of plants or flowers, grass or ground cover. The amount of greenery would depend upon your personal taste and your interest in gardening. You may want a lush growth or you may be happiest with a paved court and a few vines and trees.

If the house is set close to the ground and intimately related to the natural contours, it can extend into the garden as terraces and courts and the garden, in its turn, may penetrate into the house.

Architects have rediscovered the walled courtyard. They use it as an antidote to a sweeping view. They use it to give privacy on a suburban street, or shelter from a prevailing wind. Sometimes they let each part of the house open to its own specially flavored garden court. They use them as outdoor rooms for sitting, dining, playing, sleeping. They surround them with walls, or with light fence or lattice. Sometimes they leave openings for a discreet glimpse of the street or the surrounding countryside. Since an opening to the street also adds to the pleasure of the passerby, some European cities stipulate the percentage of a street front which can be solidly walled.

Architects use courtyards because courtyards are useful, but mostly because they like them. You probably will too.

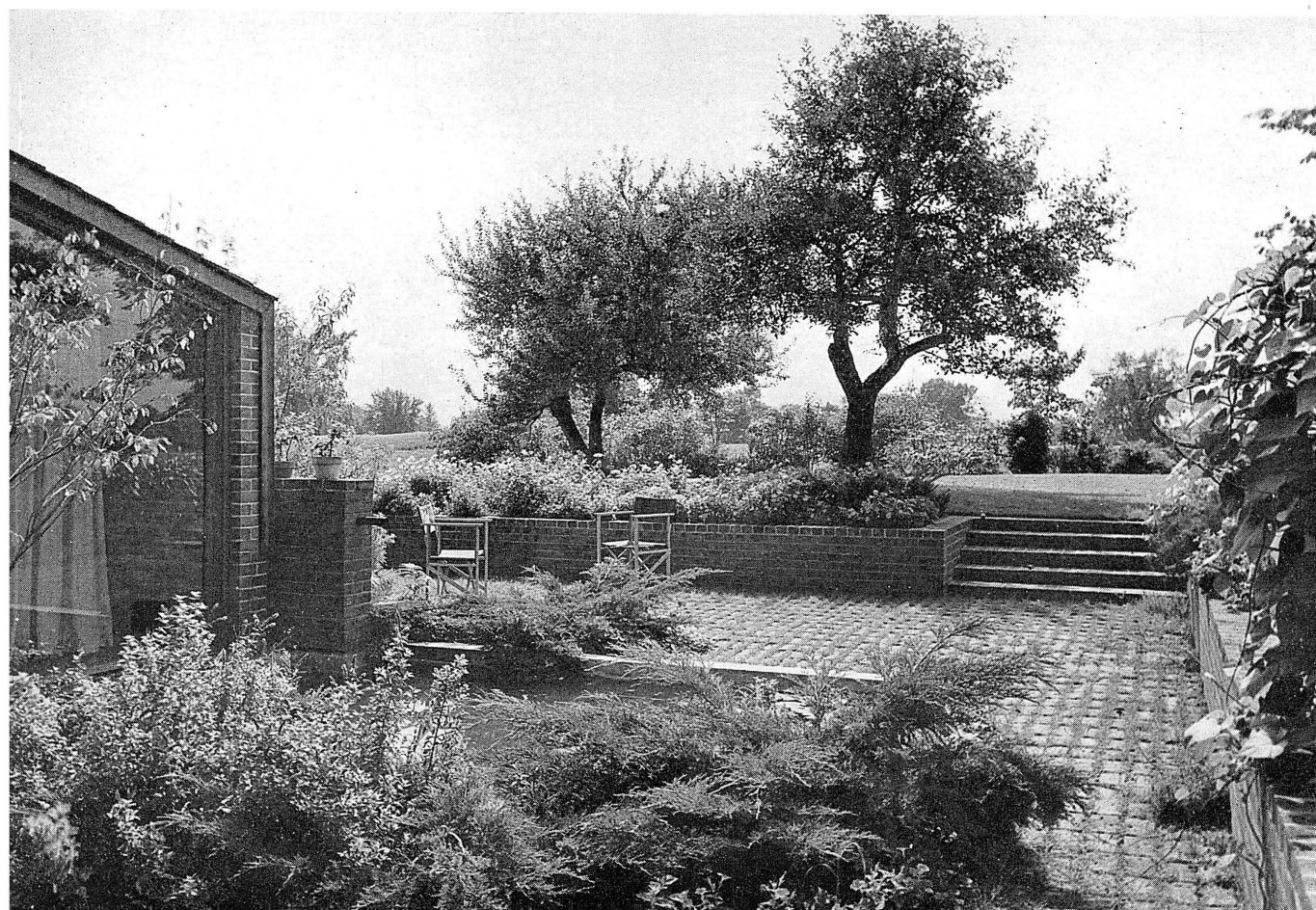
But think seriously about how much privacy you want from street and neighbors, as there is a wide range of individual preference. Some people like total seclusion; others feel frustrated if they can't see everything that goes on; and most people seem to like both possibilities. There should be some present-day counterpart of the old front porch, where one could survey the world from a rocking chair.

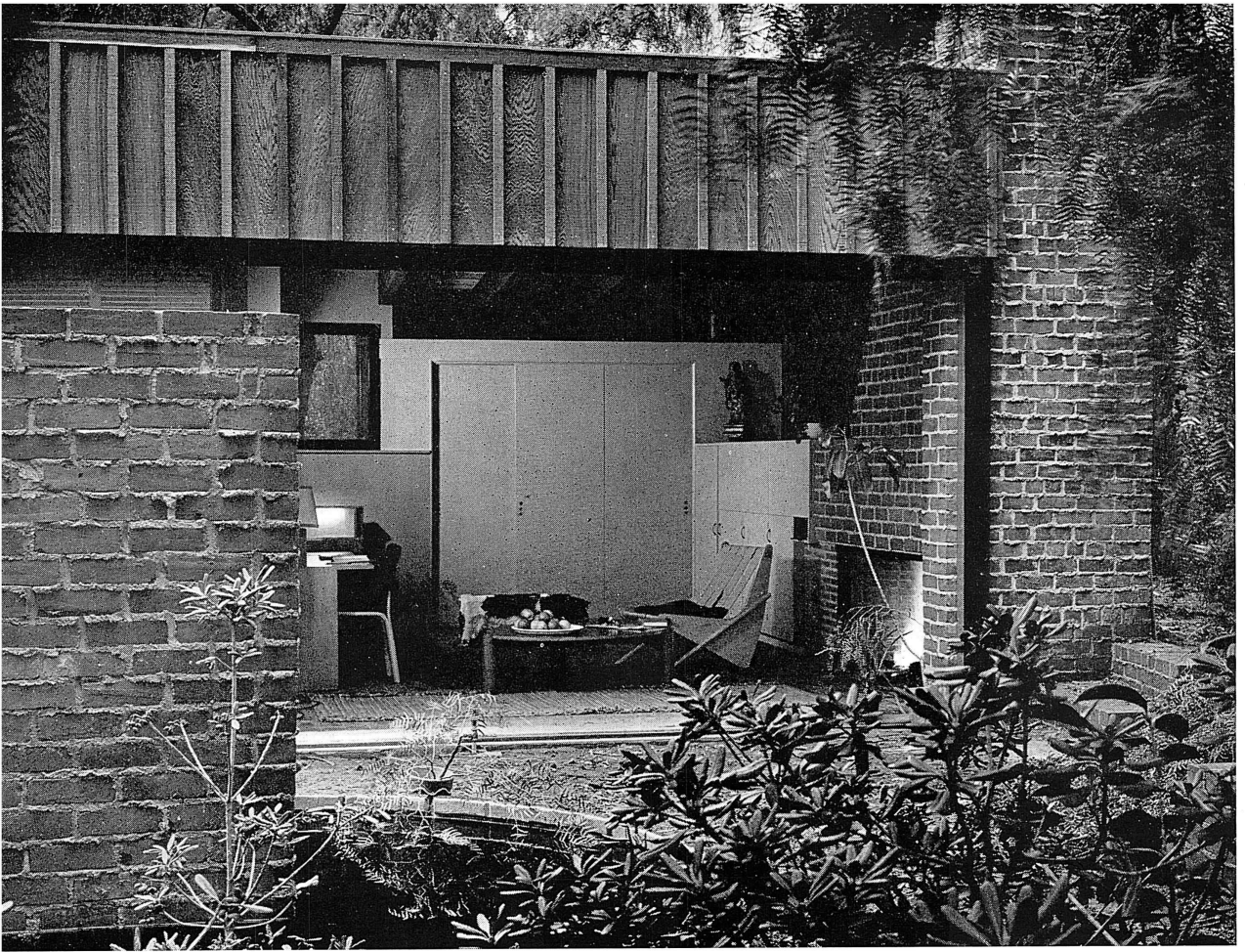




Left. Another view of the house by Richard J. Neutra which is illustrated on the opposite page.

Below. Terrace for dining and living. Landscaping by the architect. (Alden B. Dow: house in Midland, Mich.)

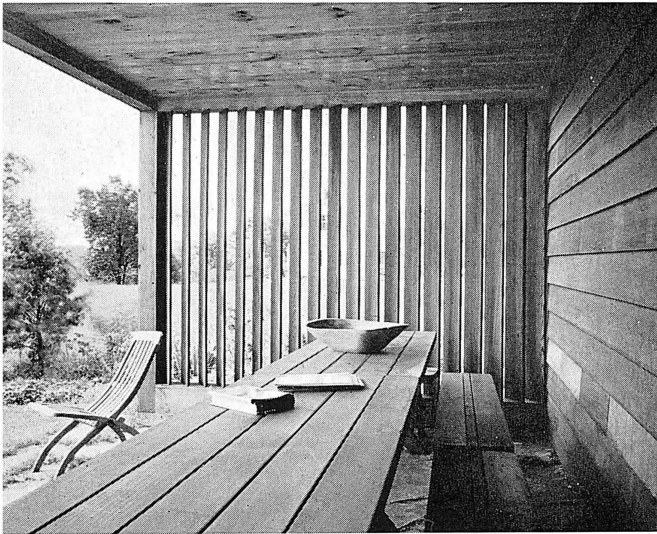




Two views of a house which takes gracious advantage of the Californian possibility of year-round outdoor living. Inside and outside are joined by sliding glass doors, and the brick floor continues out into the garden as paved terraces. The garden was designed by the architect. (Richard J. Neutra: house in Brentwood, Cal.)





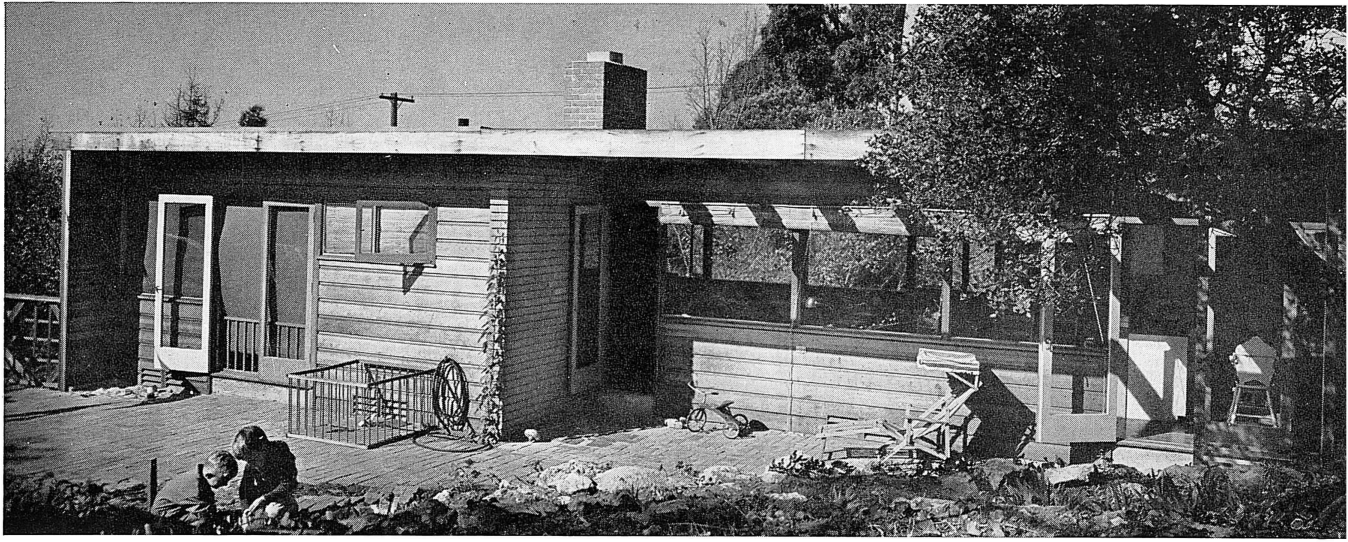


Terrace sheltered by wall of staggered boards.  
(W. Curt Behrendt and John Spaeth, Jr.:  
house in Norwich, Vt.)

Below. Terrace secluded from house and passersby. (Richard J. Neutra: house in Palos Verdes, Cal.)



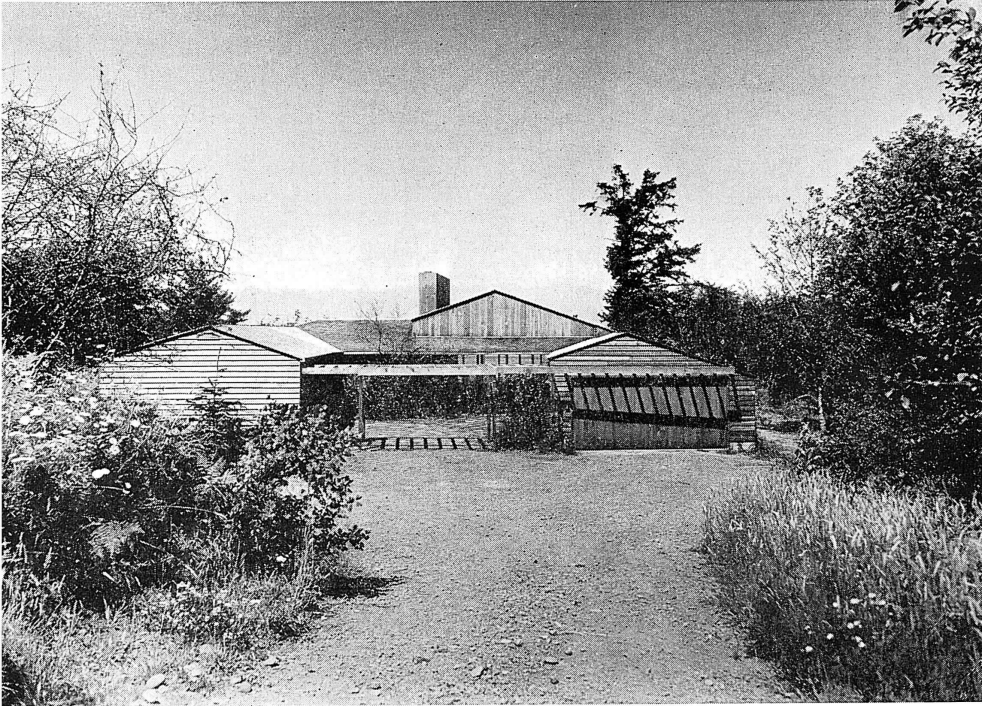




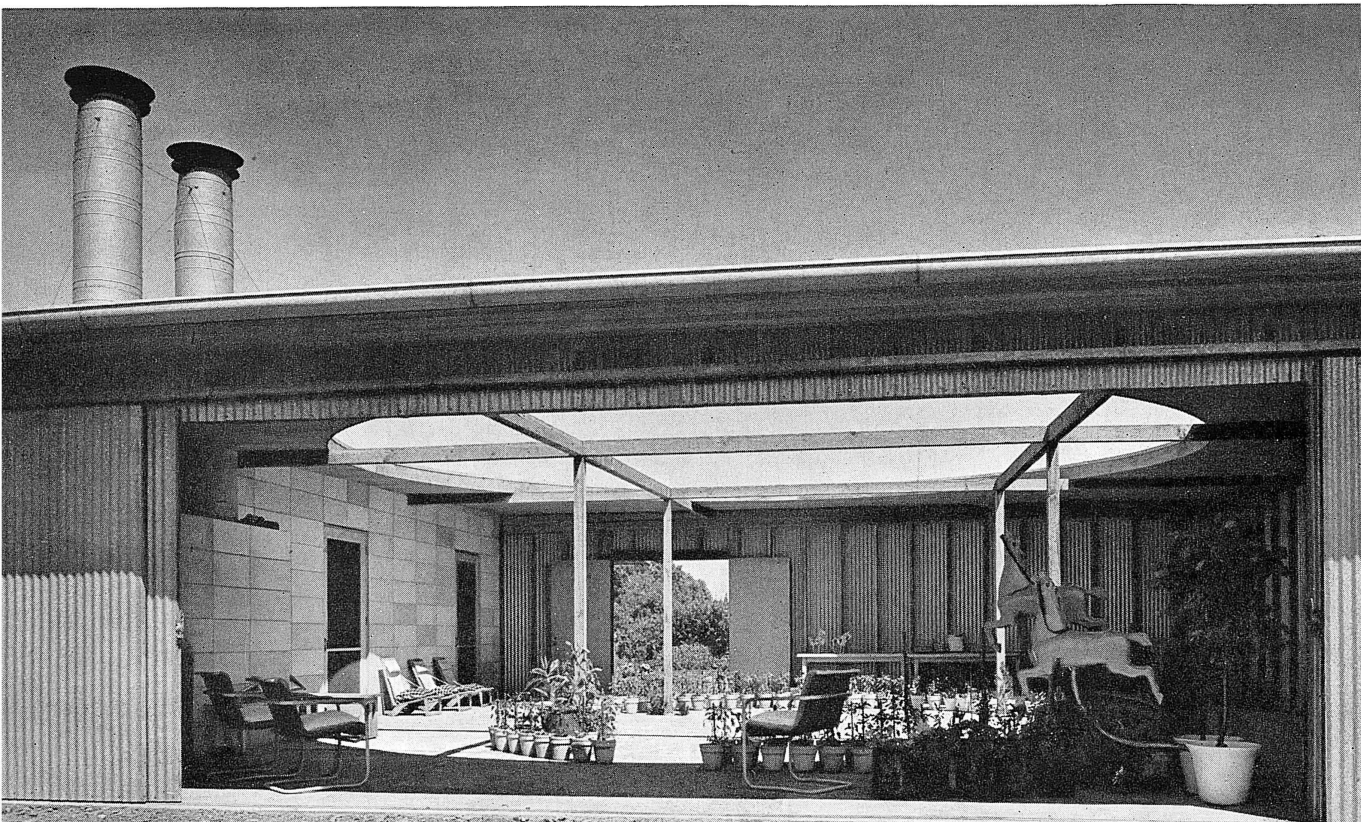
Every room opens widely to the sunny terrace. (F. J. McCarthy: house in Berkeley, Cal.)

Below. This paved and planted terrace is unusually handsome, although one might prefer to sit against a solid wall rather than expose one's back to windows. (Gardner A. Dailey, architect; Thomas D. Church, landscape architect: house in Modesto, Cal.)





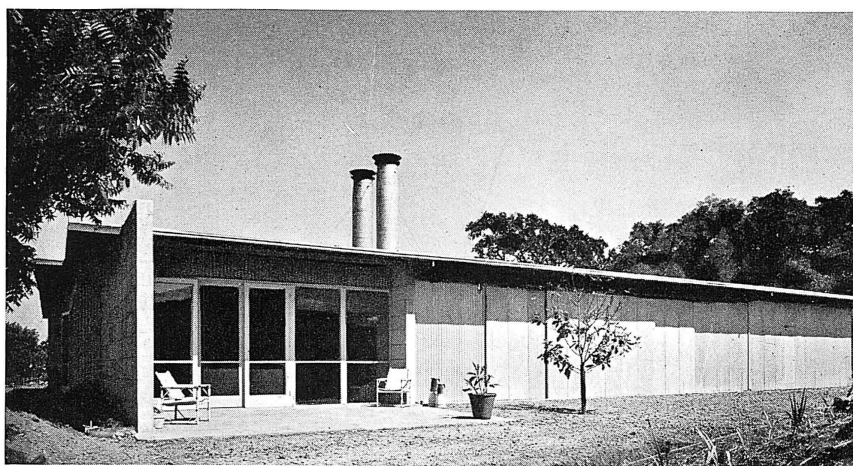
Left and opposite. Distant and close views of a house planned around a courtyard. Notice the sheltering loggia and the pavement of redwood blocks. (Pietro Belluschi: house near Tillamook, Ore.)







Right and opposite. Two views of a courtyard-house designed for a sunny, windy climate. In good weather the sliding corrugated metal doors are pushed back (left) for a view into the surrounding countryside. When it is windy, the doors are closed (right), but the court still receives ample sun and air through its great round hole-in-the-roof. (William W. Wurster and Theodore Bernardi: house in Orinda, Cal.)







Left. Bedrooms and living room open to a board-walled court. (Frank Lloyd Wright: house in Okemos, Mich.)

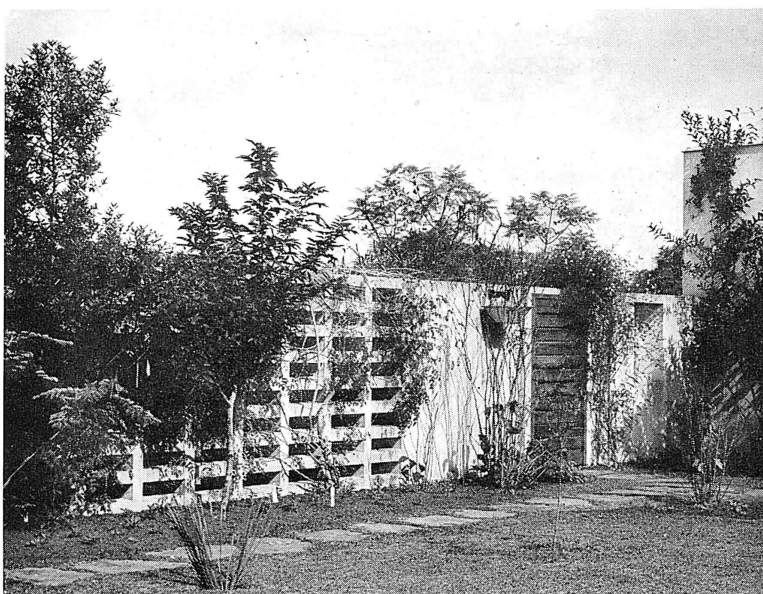
Below. A small house which opens widely to a fenced garden and swimming pool. (Joseph P. Richardson and Huson Jackson, designers; Diedrich F. Rixmann, associate: house in St. Louis, Mo.)





Above. The closed garden as an outdoor room. Sliding glass doors unite interior and exterior, but the garden wall gives a feeling of enclosure, rather than of infinitely prolonged space.

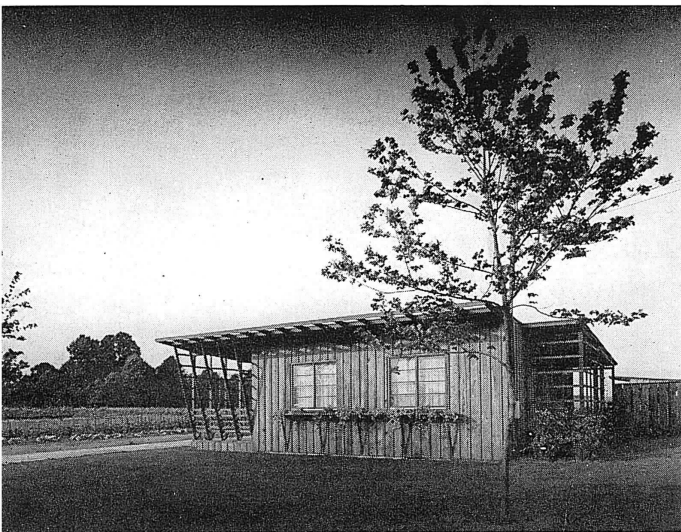
Right. Another courtyard of the same house. Here the garden wall is partly solid, partly perforated. (Bernard Rudofsky: house in São Paulo, Brazil.)







The reticence of the walled garden is tempered by the balcony and the inviting entrance.  
(Oscar Niemeyer: house in Rio de Janeiro, Brazil.)



(V. & S. Homsey: gate lodge at Hockessin, Del.)



(Mario Corbett: house in Menlo Park, Cal.)



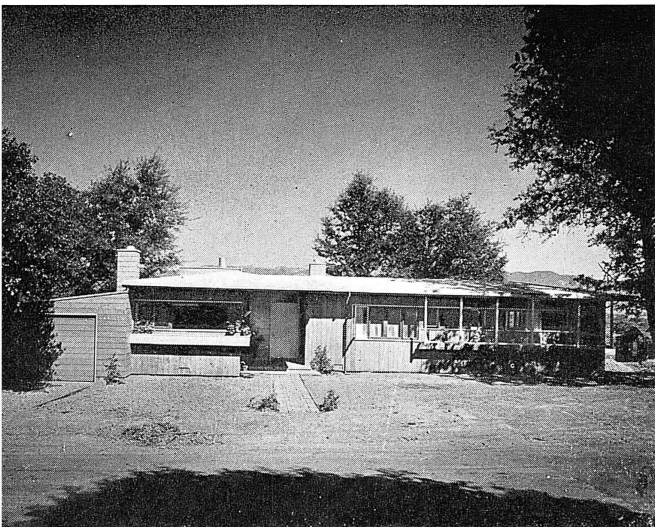
## house and street

The emphasis of the average traditionally styled house is largely upon the face which it presents to the street, and this façade is made as impressive as possible. Modern houses, on the contrary, are not designed for ostentatious display. They open widely to their gardens at side or rear and concentrate their lavishness where it can best be appreciated by the people who live in them. But sometimes they turn a rather unfriendly back to the street.

An inviting entrance is a fine gesture of hospitality which needn't be relinquished. The modern architect can go even further, and through the decisive horizontals of projecting roofs, trellises and balconies, can give an emphatic sense of shelter which is as attractive to the passerby as to the inhabitants. These horizontal extensions, solid or semi-open, also give a lively contrast of light and shade and a bold plastic interest.

The relation between house and street is a complicated one, particularly if you have a social conscience. If the street has a good and positive character, as in many New England towns, a new house should be an integrated addition rather than a disruptive explosion. It certainly need not ape the architecture of its neighbors, but it might respect them in its choice of material and color, in its scale, perhaps even in the amplitude of its front lawn, although this often means a real sacrifice. There is a quixotic generosity in the American front lawn—too public for use yet making a fine expanse of green as it continues down the street, uninterrupted from one house to the next.

Below and opposite. Four small houses which present pleasant faces to the street.



(P. Joseph; Dinwiddie & Hill: house in Ukiah, Cal)



(Pietro Belluschi: house in Seattle, Wash.)



The bold horizontals of this entrance facade give a decisive sense of shelter. (Frank Lloyd Wright: house in Okemos, Mich.)

## QUESTIONS OF QUALITY

The modern house, like the "Colonial" house, can be sterile and imitative. Those vices aren't peculiar to the traditionalists. Unless architect and client keep their wits about them, the modern house can be downright bad. But it also has a chance to be wonderful and vital and deeply individual, inside and out.

The judgment of quality is never easy, for it requires both sensitivity and experience. But actually it should be less difficult for the average person to pass a valid judgment upon modern architecture than upon the historical styles. In Colonial architecture, for example, whether real or forged, it takes some training in archeology to tell the mediocre from the fine.

A non-traditional house can be judged much more directly. Many of the considerations which affect its quality have already been suggested. Is the house planned to encourage a good, rich life? Are its space and light pleasant in character? Is it a collection of separate pieces or a unified whole? Is it a bald statement of fact, or does it offer welcome variety, even surprise? Does it make the most of its site? Does it look attractive from the street? Does it make good use of its materials and is it free of mannerism? There is also the question of proportions, just as important in a modern house as in a Georgian house even though there is no one recognized code of rules. The more you look at modern houses, the more quickly you will accustom yourself to their language, and the better you will be able to distinguish between good architecture and bad.

After a half-century of enslavement to a multitude of arbitrarily imposed styles, the architect has finally freed himself to answer your needs directly, imaginatively, without prejudice. If you choose a good one, he can give you a house which is both livable and beautiful. Quality of design isn't a luxurious extra. It's either built into a house or it isn't, and it has very little to do with cost.

Good design is not just a matter of personal advantage, but of social responsibility. You owe it to your neighbors. It is up to you and your architect to work together towards the development and enrichment of twentieth-century American architecture.



## **POSTSCRIPT—MUST HOUSES BE EXPENSIVE?**

*A modern house will give you more for your money because you pay only for what you want, and because every inch of space and material is made to count for as much as possible in terms of living.*

*Remember that the modern architect is passionately interested in using his materials directly and economically. That's part of his credo. He will often invent effective new ways to use cheap, common-place materials, and he will often think up shortcuts through the wastefulness of standard building procedure. He will also be eager to exploit new and more efficient materials and structural methods. Occasionally his more ingenious plans will cost more than they theoretically should, as contractors are prone to bid high on unfamiliar construction, but the economies of straightforward contemporary design are still substantial. What is more, the resale value of good modern houses has proved to be excellent. It seems that vast numbers of people, all over the country, are not at all interested in the quaintly pre-war "Colonial" cottages which the complacent speculators evidently expect to build and sell by the million. Even the banks must finally recognize this fact and cease their present hostility towards modern architecture in certain parts of the country.\**

*But soundly built houses, no matter what their style, are still expensive. Unnecessarily expensive, as the building industry has lagged far behind other industries in developing new and better methods of organization, production, financing and distribution.\*\**

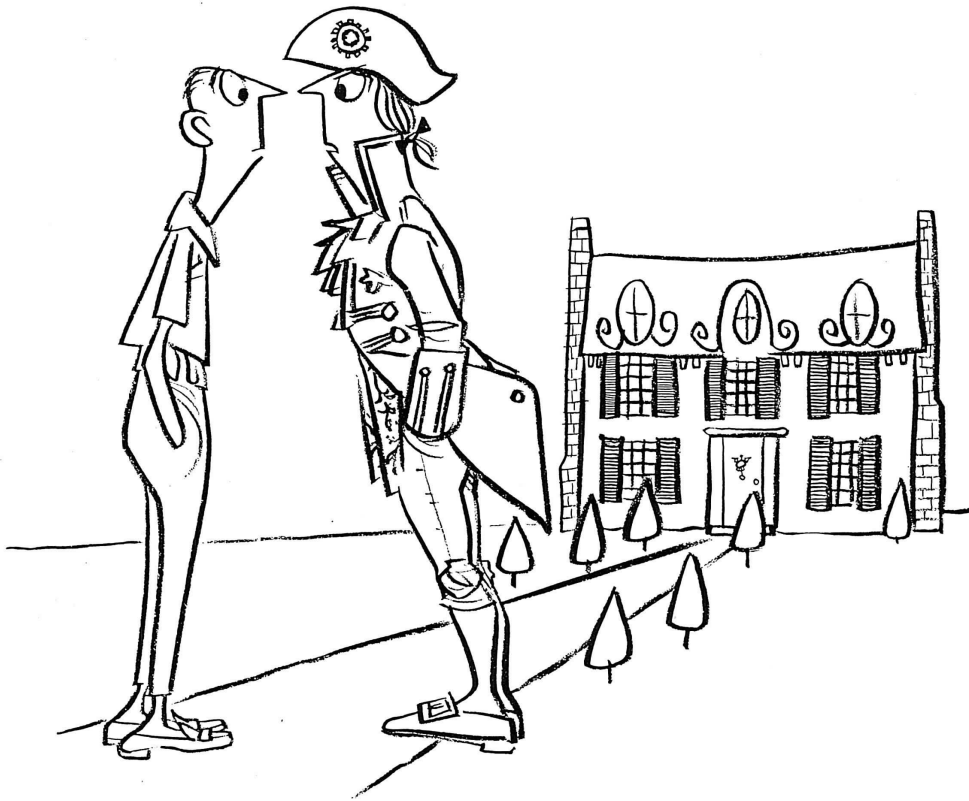
*Certain parts are mass-produced, but houses must still be classed as hand-made objects. Modern production methods have done little to lower the price of building materials, and this is partly due to inefficiency, partly to monopolistic restrictions by dealers and manufacturers. Another factor in the high cost of houses is the high cost of labor, accounted for by seasonal unemployment and restrictive practices rather than by any exaggeration of annual earnings.*

*Obviously, prefabrication is only one of the ways by which we must seek to*

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\* Actually it is the local banks which finally control the lending policies of the Federal Housing Administration and sometimes make it difficult to get an FHA-insured loan on a non-traditional house. The central office of FHA has published a wise and sympathetic pamphlet on "Modern Design" which might be waved in the faces of uncooperative local officials. (FHA Technical Bulletin 2, sold for five cents by the Superintendent of Documents, Washington 25, D. C.)

\*\* A good analysis of this problem is the pamphlet "Housing Costs," prepared by Harold Denton and the National Housing Agency. (National Housing Bulletin 2, sold for ten cents by the Superintendent of Documents, Washington 25, D. C.)



bring down building costs, but it is an important one. Savings in original outlay are quickly wiped out, however, unless the product is durable, and anyone who contemplates the purchase of a prefabricated house should demand specific guarantees as to cost of upkeep and length of life. Many of the houses which are now offered at seemingly low prices are actually very expensive, as their life expectancy is no more than ten years. Let the buyer beware.

The main virtues of the prefabricated houses now on the market are speedy erection and, in some cases, easy demountability. Neither of these assets is of any great interest to the average home-owner, and until durable, flexible systems are offered at low prices prefabrication will be of little use to anyone who wants a solidly built house, tailored to fit his own personal needs. Rather than pre-built house-shells, it may be the prefabrication of mechanical equipment as standardized "cores" and utility units which will be of most immediate benefit to such people.

There has been a great deal of romantic talk about the miracle of prefabrication, but little attention has been paid to the solid gains which would be made possible by cheaper building money. The FHA has already been responsible for a lowering of the general interest rate on mortgages, but it should be possible to reduce the rate well below the present minimum of 5%. Houses which are soundly built and well planned, not only in themselves but in relation to their neighborhoods, are a sound investment which should not need the inducement of high interest.

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