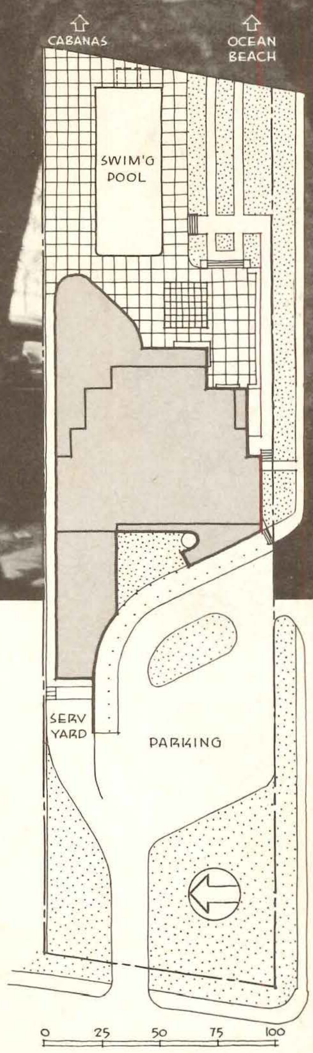
ARCHITECTURAL RECORD • JULY 1941

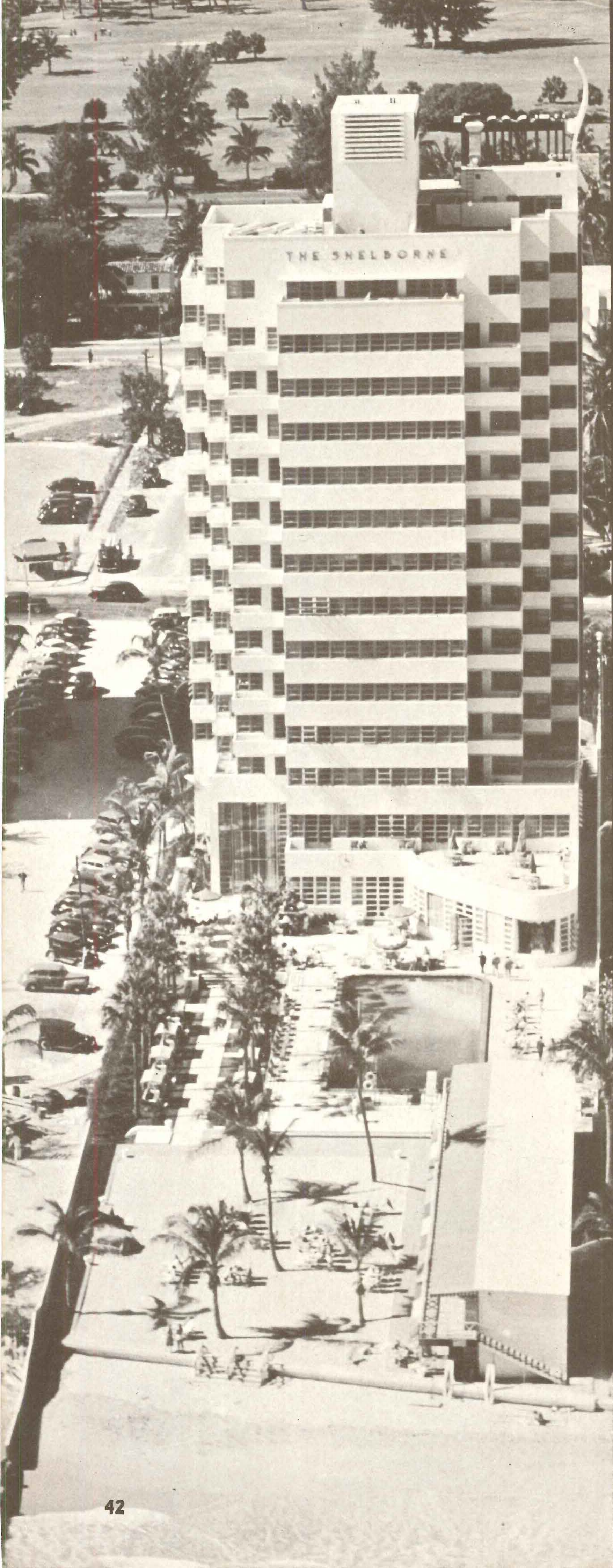
THE SHELBORNE HOTEL, MIAMI BEACH

Ernest Graham

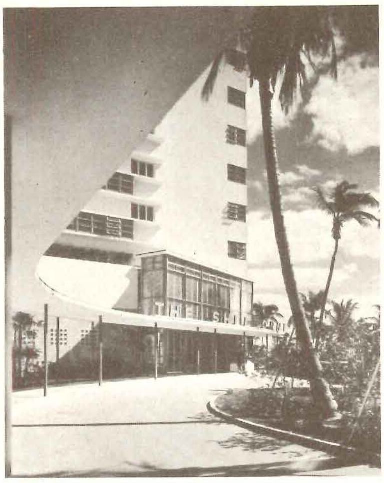


POLEVITZKY and RUSSELL, Architects

ONE OF THE MOST NEWSWORTHY of the 40 or more new hotels built at Miami Beach in the past year, the Shelborne is of very special interest to designers of resort hotels. The architects faced problems that are familiar in such favored locations: land costs were high; the main outlook was in but one direction. The difference in rental value of rooms that face the view and those that do not was a sizable economic—hence design —factor. In planning the Shelborne, an important element in the successful solution of the problem was the choice of a skyscraper scheme rather than a spreadout plan. But particularly noteworthy is the typical floor-plan layout in which the architects contrived to obtain the ocean view for 11 of the 13 rooms on each floor. The high land cost helps to explain erection of so large a building on so comparatively narrow a lot.



Photos by Ernest Graham



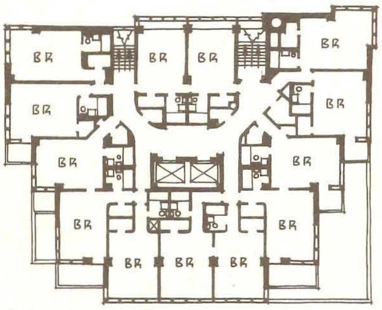
FRONT ENTRANCE

THE ALL-OVER DESIGN PROBLEM was to plan a 140-room resort hotel on an ocean-front property 100 by 400 ft. in area, with the important ocean outlook along the narrow, eastern end of the property. The hotel was projected to serve a clientele demanding such luxury features as a swimming pool, cabana colony and solaria. In evolving the compact plan, with most of the rooms facing the ocean, the architects relegated stairways and as much of the service portion as possible to the west side of the building. Since most arrivals and departures are by car, the main approach is treated primarily as a problem of automobile rather than pedestrian circulation, and parking facilities are as large as space permits.

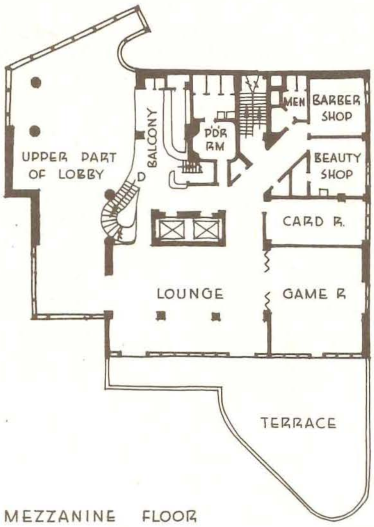
Inside public areas are comparatively limited; but these are amply supplemented by outside decks and terraces, and the whole pool and play area. Placement of the building well back from the ocean provides complete privacy for these outdoor lounging and recreational areas. In the basement of the hotel are both service rooms (under the kitchen wing of the building) and locker and recreation rooms for bathers. A sun-bathing solarium, with massage rooms for both men and women, is located on the roof.

The building is entirely fireproof, placed on wood piling with reinforced concrete foundations, retaining walls, basement and floor slabs. The skeleton is of steel—one of the few steel-frame buildings in Miami Beach. Filler walls are of concrete block, stuccoed on the exterior. The north bay on the west side of the hotel is surfaced with blue-green structural glass. Masonry portions of the walls are a soft gray color. The window trim is painted blue-green to match the glass-surfaced bay.

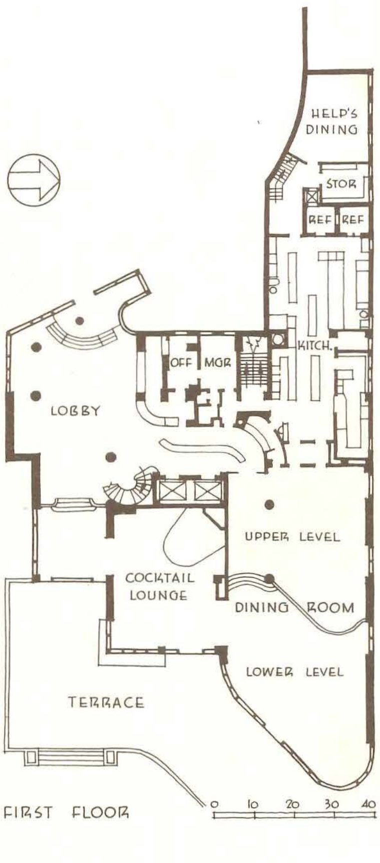
The concrete sky sign at the top of the building was poured in place. The letters were designed as thin reinforced concrete walls and slabs by Engineer Richard Belsham. To give an idea of scale, the "S" is 10 ft. wide and 28 ft. tall. Zeon tubing is centered on each letter for night display.



TYPICAL FLOOR



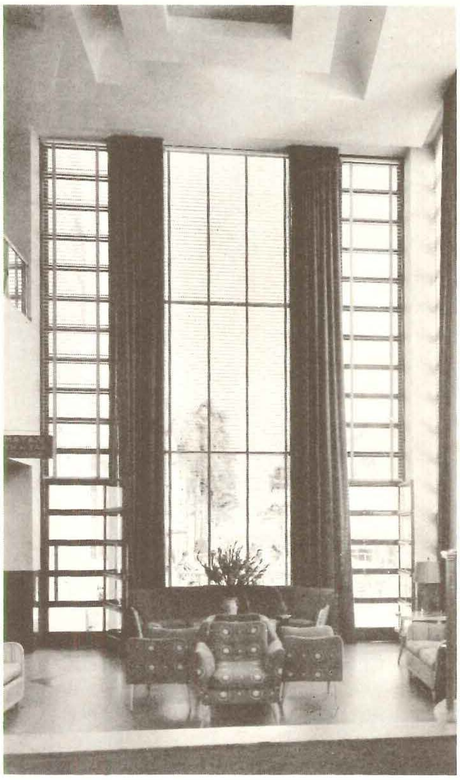
MEZZANINE FLOOR



FIRST FLOOR

FROM OCEAN TO HOTEL

FROM HOTEL TO OCEAN

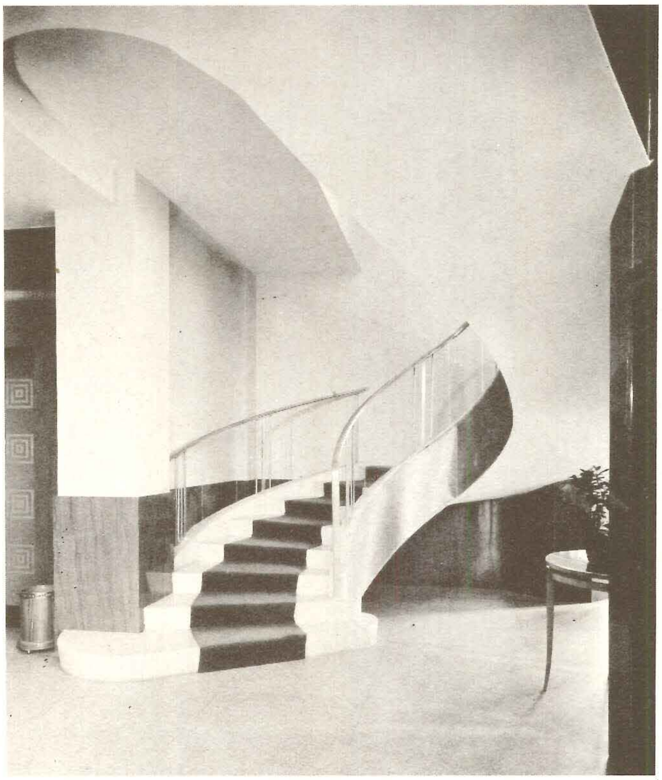


LOBBY WINDOW WALL

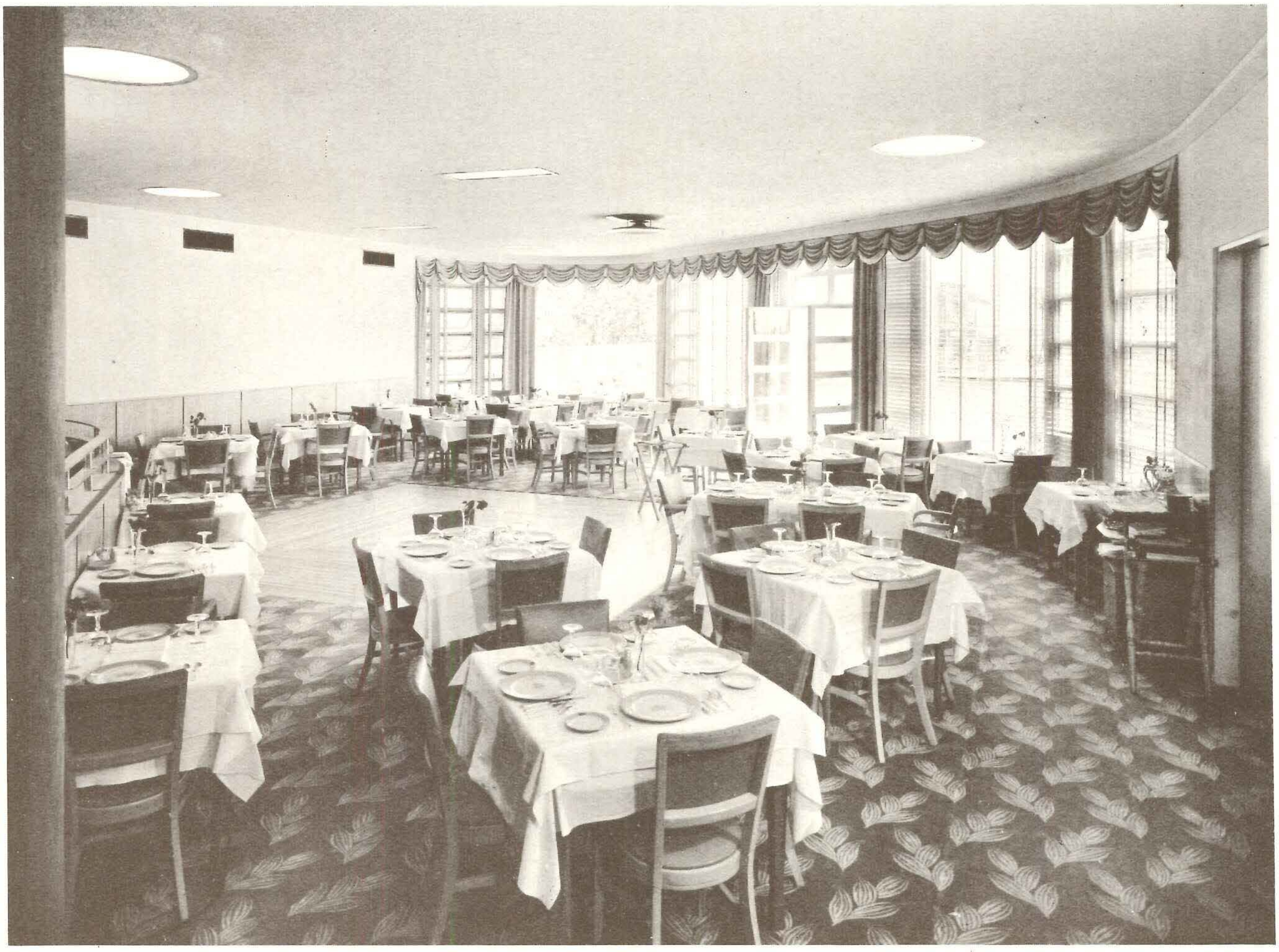
Photos by Ernest Graham

ALTHOUGH the typical floor plans are symmetrical, the lobby floor is planned with a major axis along the south side. This is explained by the architects' conviction that it was essential to provide arriving guests with an immediate and impressive view of the cabanas and beach, which are so important a part of the hotel's attraction. Hence the whole east wall of the lobby at this point is an enormous room-height view window. Elevators and business areas are kept at one side. A dramatic, freestanding stair leads up to the mezzanine. The two-level dining room extends beyond the main face of the building, commanding an extended view of the recreational area and forming the popular outside lounging deck above.

In the lobby, columns are surfaced with dark cedar-colored Tennessee marble; wainscots, desk fronts and walls in the elevator hall are of rose-gray marble. The decorative ceiling light units are equipped with duotone fluorescent tubing.



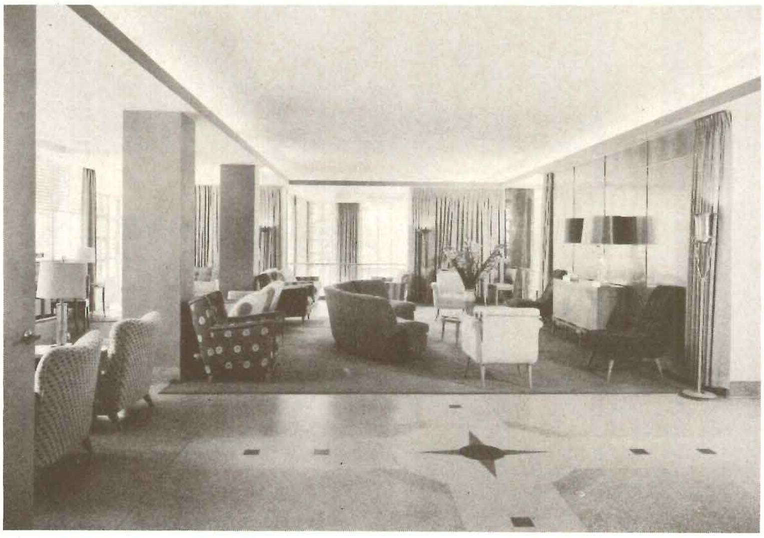
FREESTANDING STAIRS TO MEZZANINE have an etched clear plastic balustrade and aluminum handrail



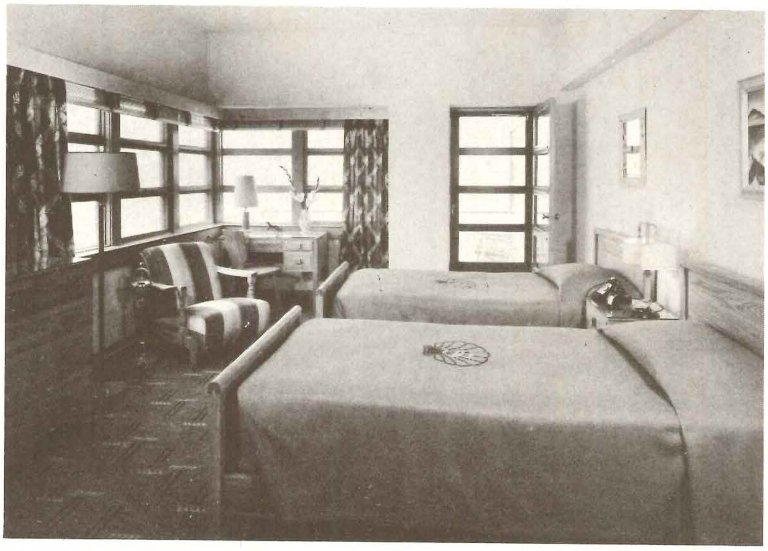
THE DINING ROOM is built on two levels so that those at the back have an unhindered view of the ocean

THE SHELBORNE HOTEL, MIAMI BEACH

THE COCKTAIL ROOM, decorated with Mayan drawings in primary colors



THE MEZZANINE LOUNGE opens onto the open deck above the dining room



Photos by Ernest Graham

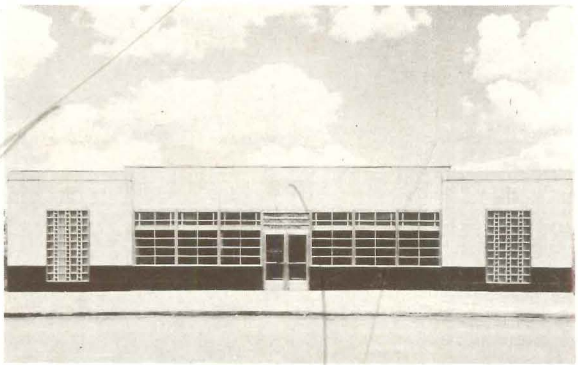
TYPICAL FRONT ROOM opens onto a private balcony—a facility that has proved highly popular with the clientele. Sash are of wood, of the awning type

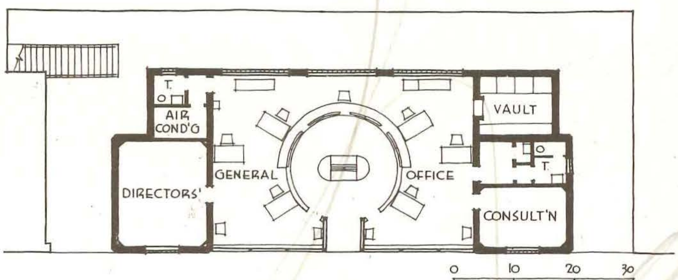
IN THE MAIN ROOM, the woodwork is walnut; walls are smooth plaster; the ceiling is acoustical plaster

Martin's Photo Shop

BANK

TERRE HAUTE MUTUAL SAVINGS AND LOAN ASSOCIATION, TERRE HAUTE, IND. MILLER & YEAGER, ARCHITECTS. An unusually efficient plan distinguishes this modern bank building. Since the entire staff comes in contact with the public, the public space has been made the center of all activities, and each department functions with minimum waste motion. Of fireproof construction, the masonry building is surfaced with buff artificial stone with a black marble base. Window trim, doors and vestibule framing are of stainless steel; glass block is extensively used. The roof deck, supported on steel beams, is insulated with cork and finished with tar and gravel. In the circular public space, the floor is sheet rubber; in the main office, mastic tile; private offices are carpeted. Completely air conditioned, the building is heated and ventilated by a forced air system, discharged through outlets that are integrated with the ceiling lighting fixtures and withdrawn through grilles in the base.

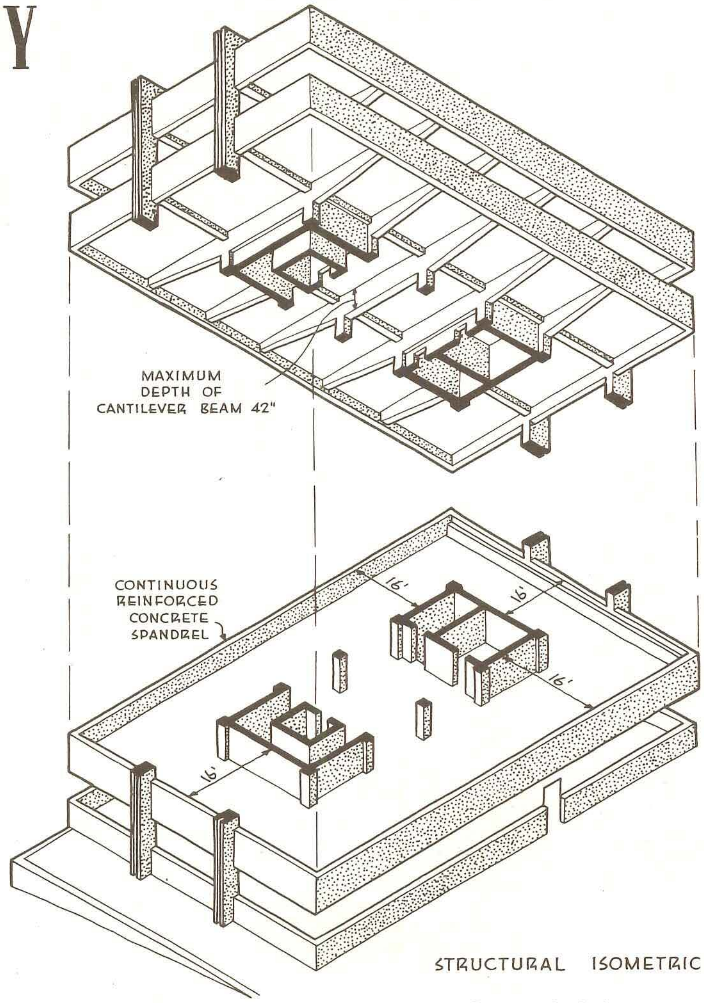




Roger Sturtevant

RESEARCH LABORATORY

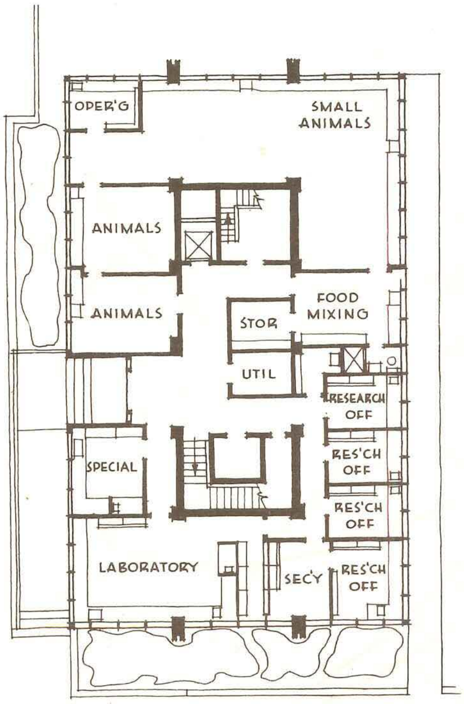
RUTH LUCIE STERN RESEARCH BUILDING, SAN FRANCISCO, CALIF. BIRGE M. CLARK, DAVID B. CLARK, ARCHITECTS. Increasingly architects are called upon to design special-purpose buildings that demand complete flexibility in use. This research laboratory building for Stanford University's Medical School solves this problem with notable success. The unique structural system (see detail) allows for changes in uses of rooms and even of their sizes with a minimum of effort. Steel sash, equipped with double-strength glass, are laid out on 4-ft. intervals, and the interior partitions, of stud and plywood construction, are so secured that the school's own mechanics can readily remove and re-erect them when laboratories are increased or decreased in size. Similarly service lines and facilities are installed for use at any convenient point (see next page). By using the concrete walls surrounding the stair and elevator shafts as bracing elements, a resistance to earthquake forces has been developed to withstand lateral loads up to 10 per cent of gravity—considerably in excess of San Francisco code requirements. The building is steam heated, with a thermostatically controlled ceiling unit heater with fan in each room. There are three separate exhaust systems which exhaust air from all rooms; no air is recirculated. Cost of the building, complete with floor coverings, lighting fixtures, cases, etc. other than the movable equipment was $98,000.



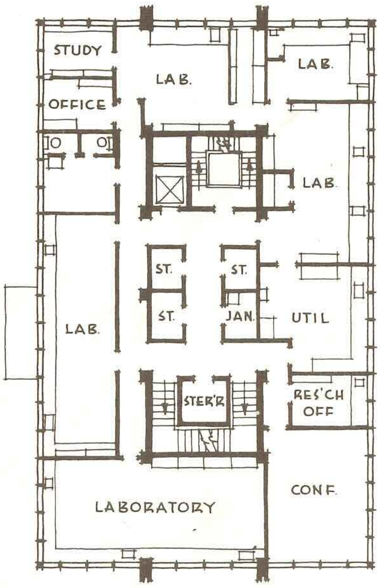
STRUCTURAL ISOMETRIC

STRUCTURE. From the double row of 7 columns which form a central structural core (housing stairway, elevator, ventilating shafts and the main stacks of all utilities), the floors are cantilevered out a distance of 16 ft. Thus, the entire surrounding area is free of structural elements, except for the two columns in front and the two at the rear. Except for the movable partitions, the building is entirely of fireproof construction, with walls of reinforced concrete and glass; concrete floors and ceilings.

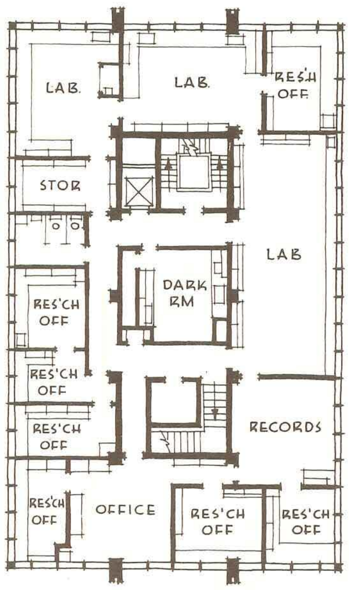
Continued overpage →



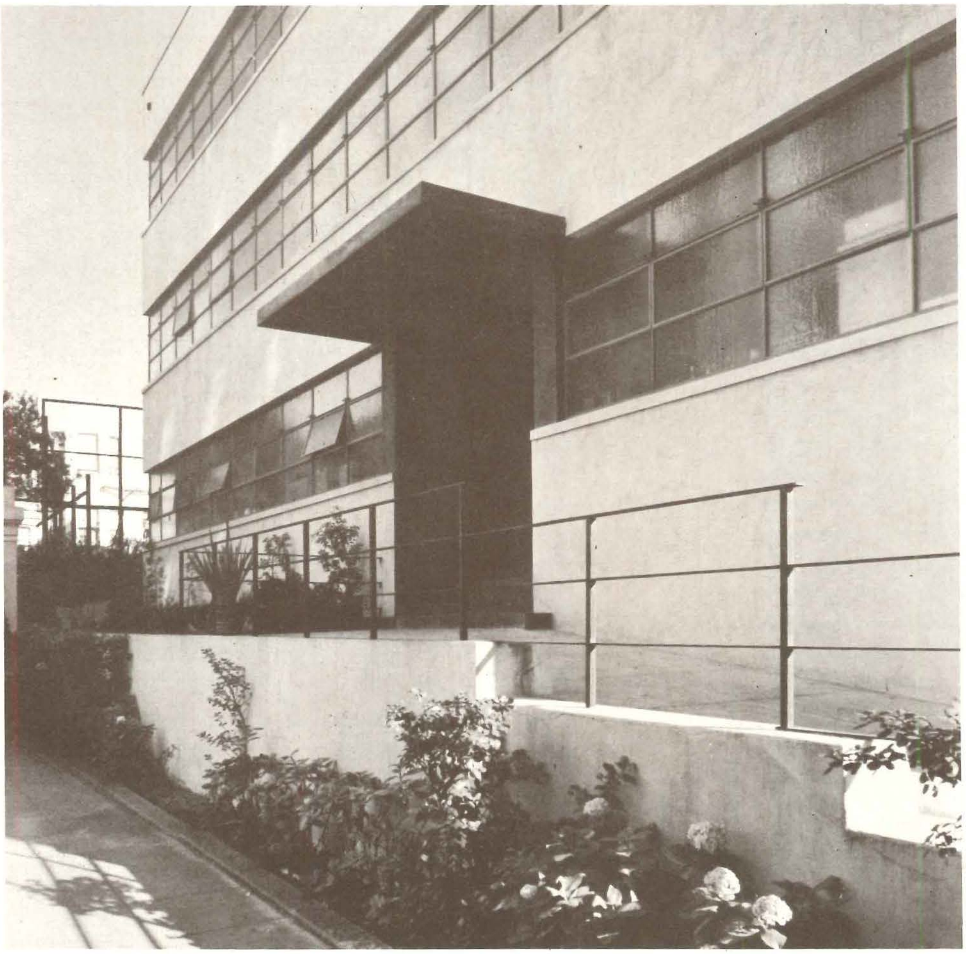
FIRST FLOOR



SECOND FLOOR

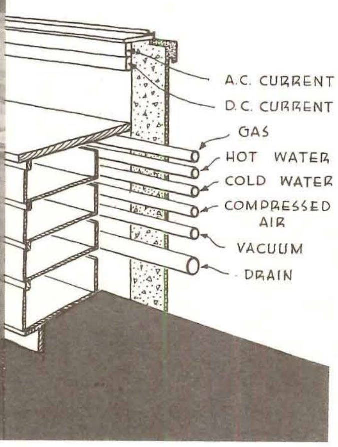


THIRD FLOOR

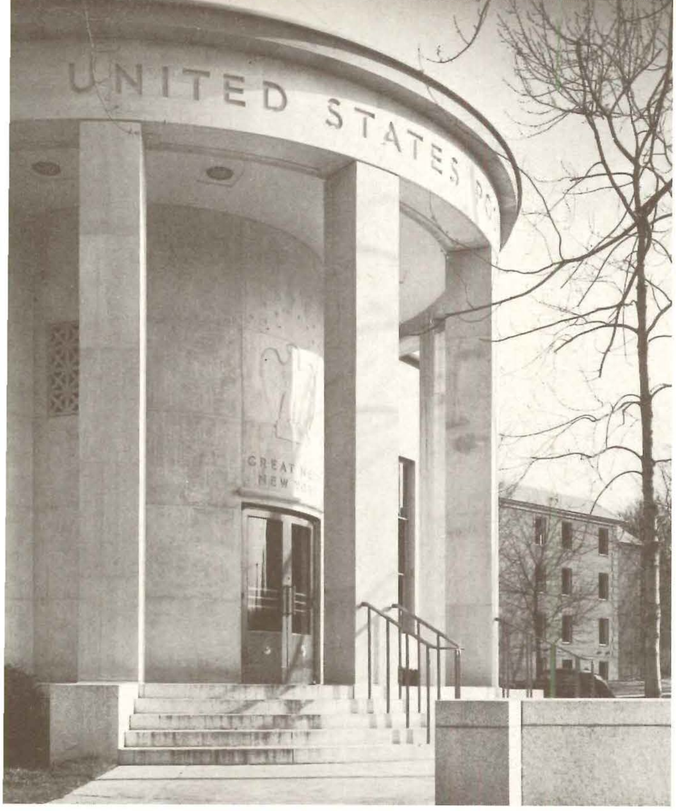


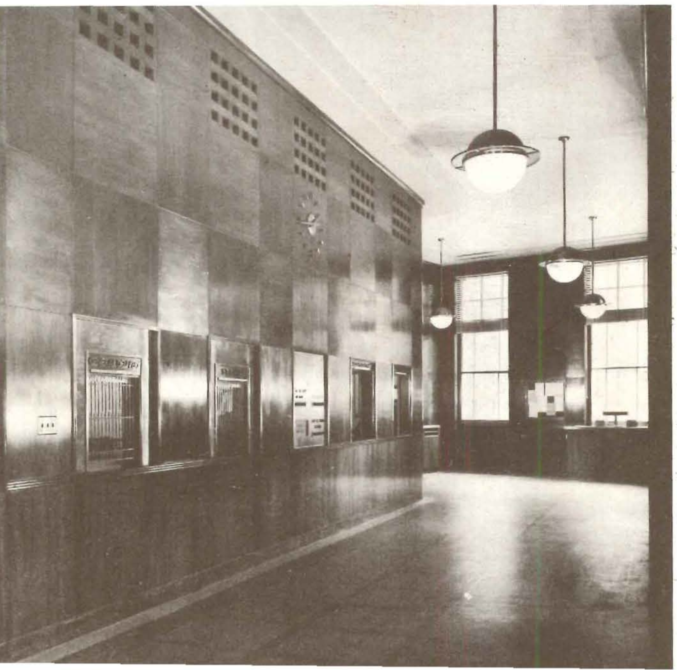
MAIN ENTRANCE

Around the entire building, beneath windows and work counters, run hot and cold water, compressed air, suction and gas pipes. Above the counters are a continuous pair of metal boxes, which carry AC and DC current. Any of these seven facilities may be attached at any point. Steam pipes run up near the ceilings



Photos by Roger Sturtevant



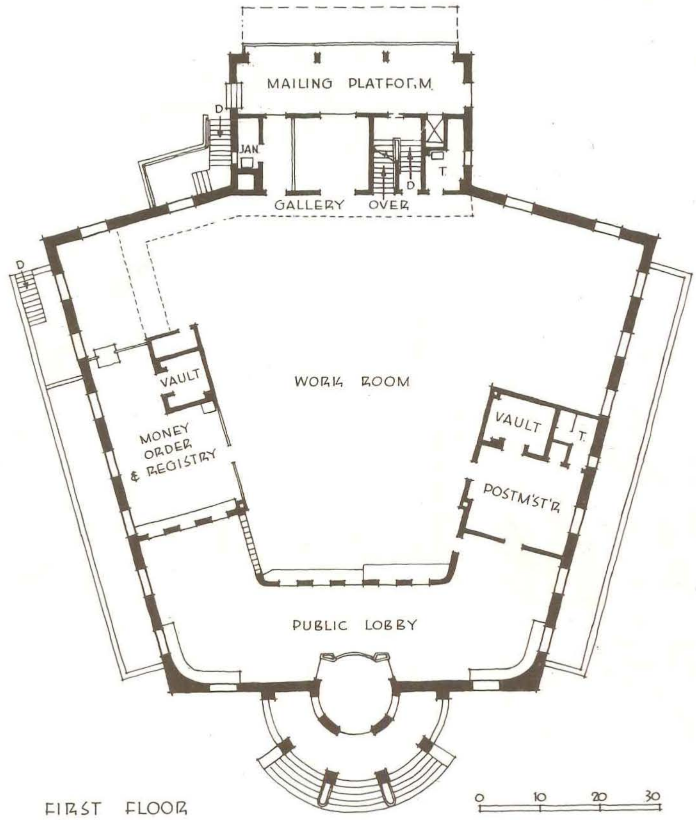


Photos by Sigurd Fischer

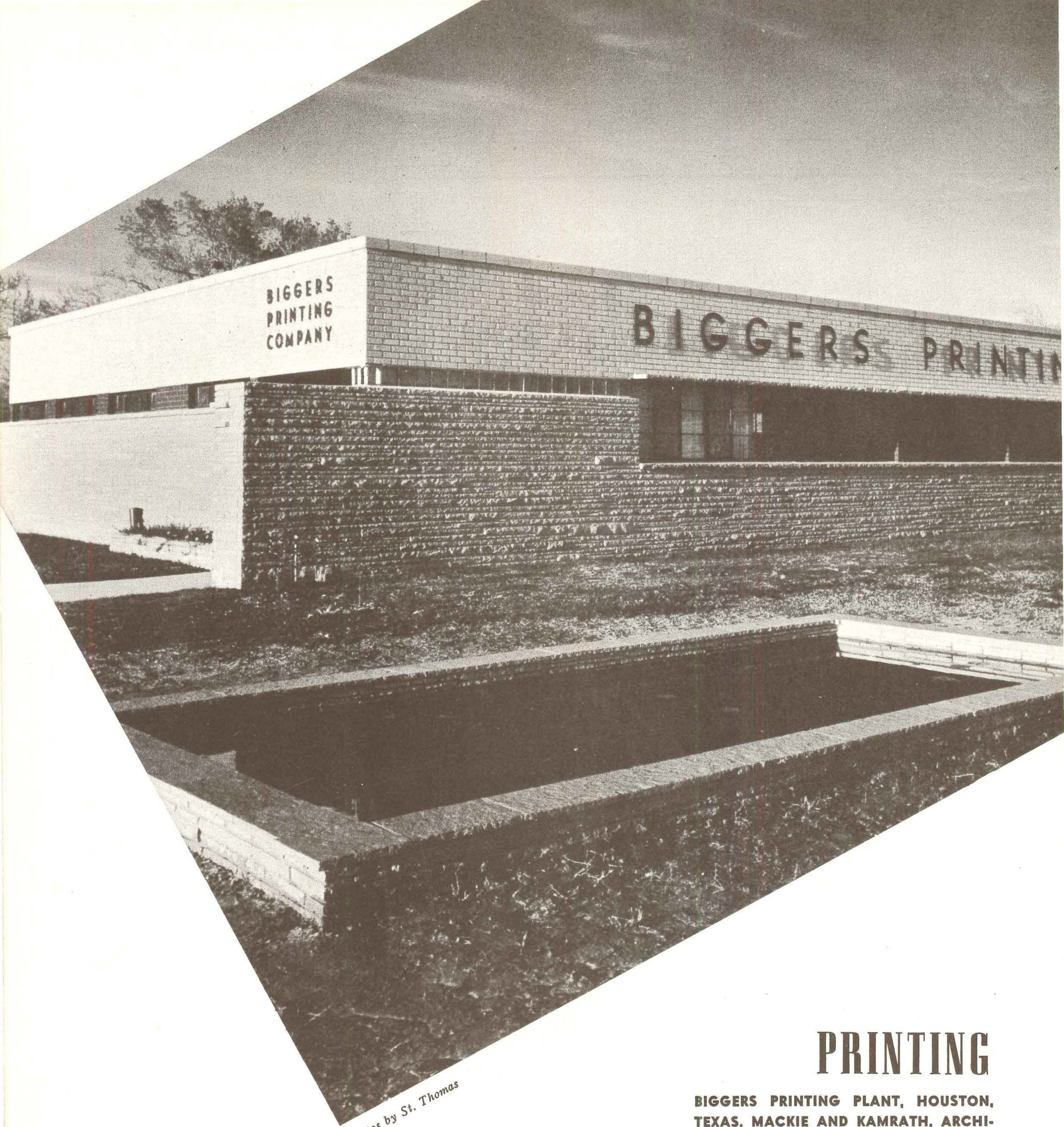
POST OFFICE

UNITED STATES POST OFFICE, GREAT NECK, N. Y. TREASURY DEPARTMENT, PROCUREMENT DIVISION, PUBLIC BUILDINGS BRANCH. WILLIAM DEWEY FOSTER, CONSULTING ARCHITECT.

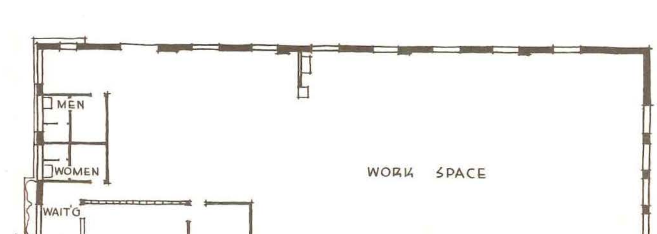
Intersection of two important streets at an acute angle was a primary determinant in the planning of the building. The parti consists of a symmetrical scheme with side walls paralleling the streets. Within this area, the various public, private and work rooms are ordered for maximum convenience in use. At the rear is a concrete drive and areaway connecting directly with the centrally located mailing platform. The masonry exterior walls are surfaced with limestone, with a granite base; steps and platforms are also of granite. Floor slabs are reinforced concrete. The slag composition roof is applied above a roof frame of structural steel. The eagle over the entrance is the work of Sculptor Gaetano Cecere. The public lobby is finished with walnut-veneered panels above a marble wainscot; the floor is terrazzo. In the full basement are the fuel and boiler rooms; an office for the post office inspector, several storage rooms and the large central space which is to be used in the future as an emergency work room.



FIRST FLOOR

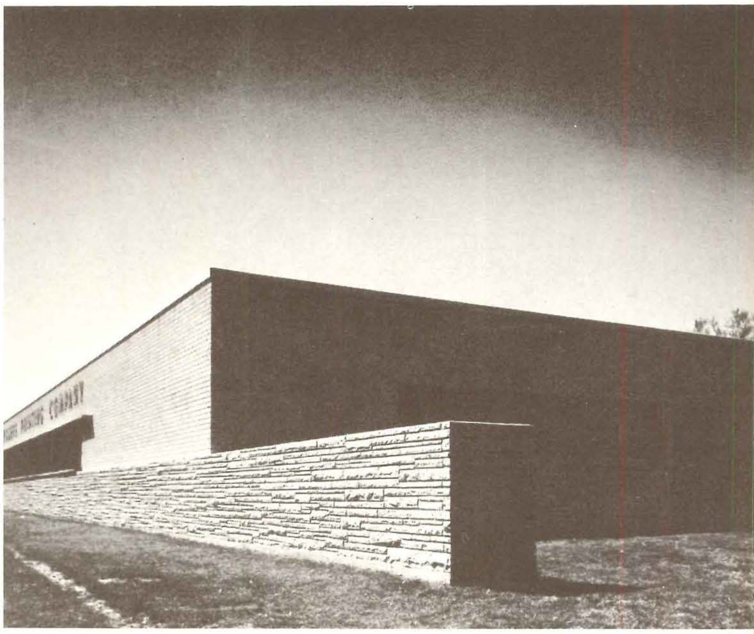


Photos by St. Thomas



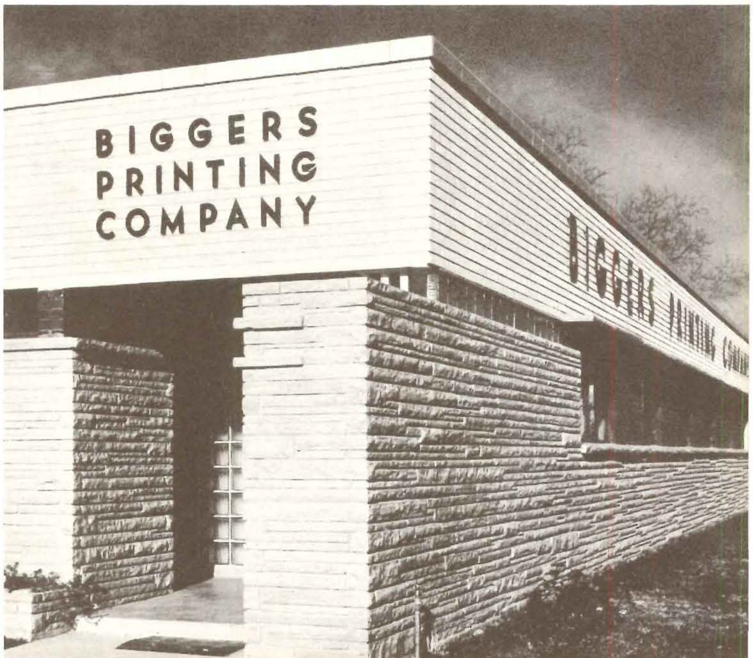
PRINTING

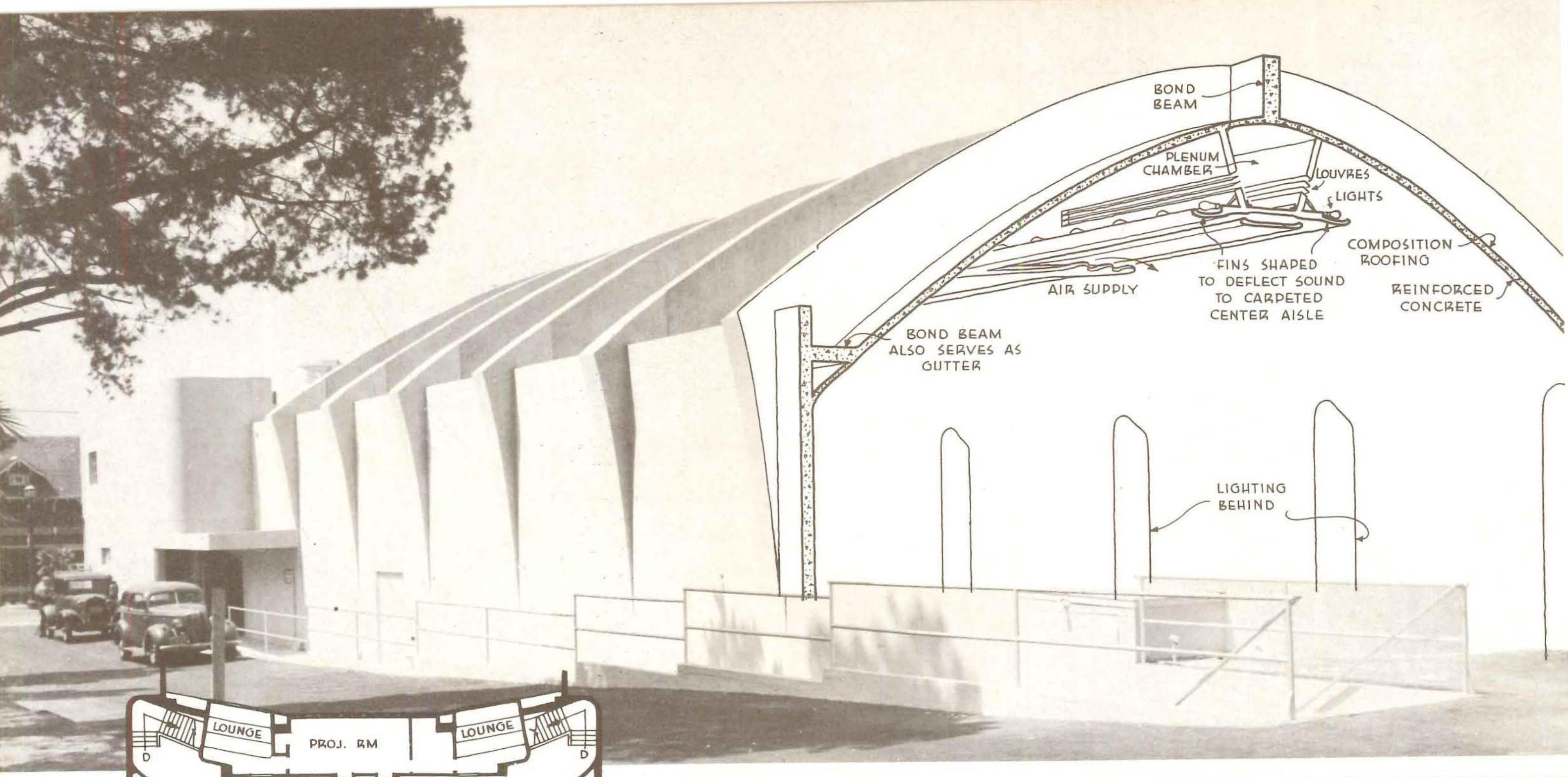
BIGGERS PRINTING PLANT, HOUSTON, TEXAS. MACKIE AND KAMRATH, ARCHITECTS. Architects concerned with the design of industrial buildings will find in this smart new structure a refreshing and challenging solution. An exceptionally prominent industrial site, beside a bayou and not far from downtown Houston, prompted architects and owners alike to demand a building that would do honor to its surroundings. The final design was selected only after fabrication of a complete, accurate scale model. The building is so located on the site that it is seen to good advantage both from the street on

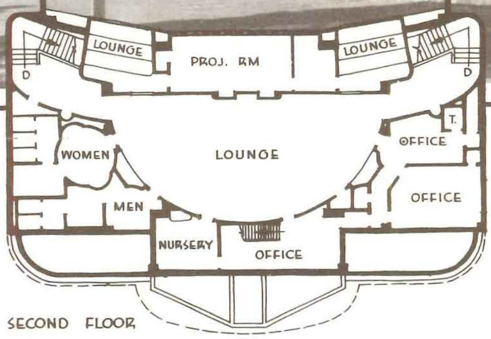


PLANT

which its narrow front faces and from a busy traffic artery on the far side of the bayou that runs parallel with the broad side of the building. The plan provides all necessary offices and ample work space in back. Space is reserved for future installation of air conditioning equipment. Built on a concrete slab, the main walls are of Colorado ledge stone and buff brick, with deep-brown panels of brick between the windows. The stone-course heights range from ¾ in. to 5 in.; lengths of individual stones run up to 9 ft. Steel sash and panels of glass block make up the extensive window areas.







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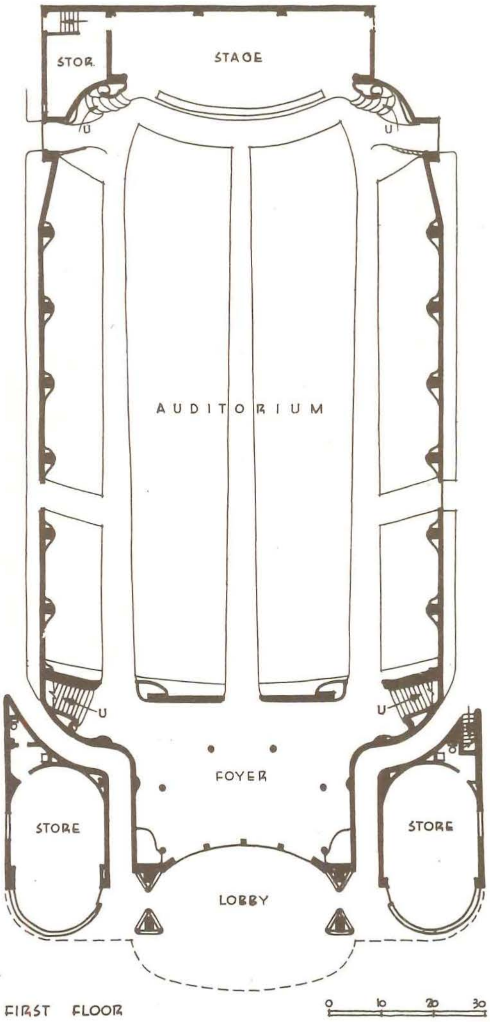
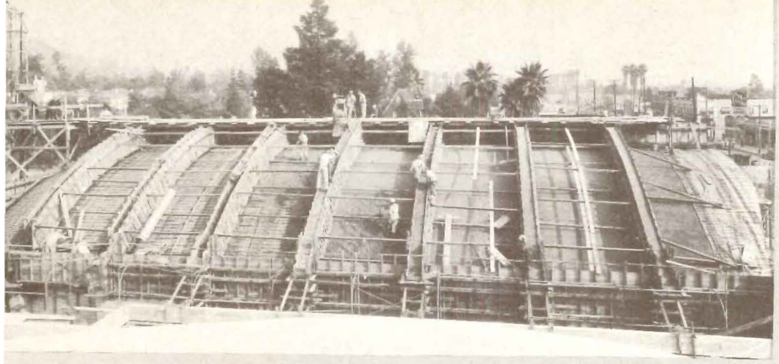


FIRST FLOOR

MOVIE THEATER

HAWAII THEATER, HOLLYWOOD, CALIF. CARL G. MOELLER, INDUSTRIAL DESIGNER; CLARENCE J. SMALE, ARCHITECT. This theater is a good illustration of what careful planning and ingenuity in structural design can accomplish. It was originally scheduled as a Class C structure, seating 900. But the collaborators produced—at no increase in cost—a Class A building with a seating capacity of 1,100. In essence, the structural system consists of a series of outside the-envelope arches or portal frames tied together by bond beams at five points: lateral bond beams or lintels at ground level; bond beams at the arch spring lines, and the tie beam joining the crest of the arches. The resultant strong structure is highly resistant to earthquake stresses. The exposed arches expand under atmospheric pressure at the same rate as the shell, obviating internal stresses which occur when structural arches are insulated from outside temperatures by roof and walls. Sizable economies result from the fact that structure and "architecture" are one and the same; in almost every case, elements serve two purposes. The bond beams at the top of the side walls are also the gutters; structural walls serve also as interior walls, with decoration directly applied; the structural beams are the ornamental beams, and ornamental features are both integrated with and serve as adjuncts to the lighting or air conditioning system. An example of the latter is the multiple-use fixture of light steel frame, with metal lath and acoustical plaster furring, which is suspended from the crown of the arch and extends down the center of the auditorium ceiling. In this single element are integrated the air conditioning plenum chamber with louvers at the side; light source and service catwalks. The fixture is also important acoustically. It not only breaks the continuous arch, eliminating reverberations characteristic of barrel structures, but the angle of the air-deflector fins at the bottom is so calculated as to deflect sound down to the carpeted aisle on the floor, where it is killed. The auditorium ceiling and the greater part of the walls are finished with acoustical plaster. Sound is further broken up and controlled by the curved furring around structural columns along the sides.



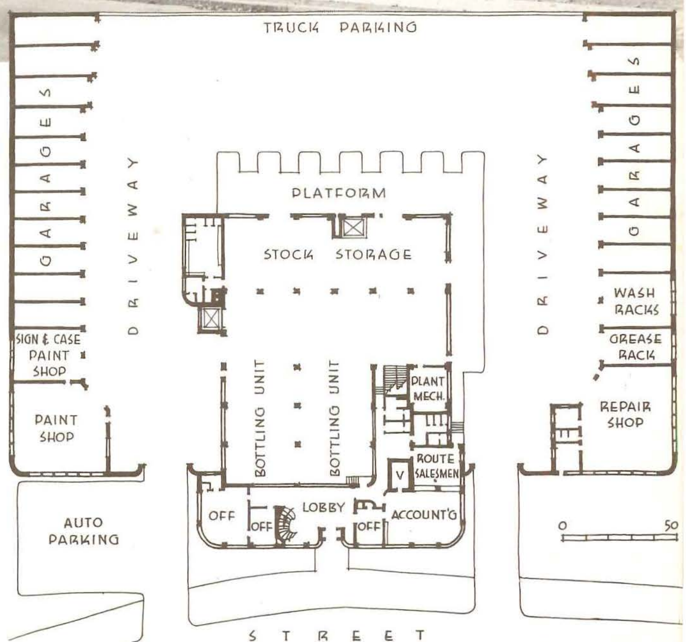
CONSTRUCTION. Economies were effected in construction work by pouring the floor slab first. This was used as the base for the scaffolding, which, with a little additional bracing, was first used as shoring for the structural moulds. When pouring was completed, the scaffolding was left in place to be used by all the trades—electricians, plumbers, painters, etc. Pouring was in three stages: first, walls and columns up to the bond-beam line; second, arches and roof slab to a level two-fifths of the distance from the spring line at each side of the arches; third, central portions of the arches and roof slab, and bond beam at the crest. Pouring was also sectionalized vertically in units comprising two portal frames and the connecting wall or roof slabs, with cold joints between the units.

Photos W. P. Woodcock, and Luckhaus courtesy L. A. Times

Continued overpage →

BOTTLING PLANT

COCA COLA BOTTLING CO., ASHEVILLE, N. C. HENRY IRVEN GAINES, ARCHITECT. This sparkling beverage-bottling plant is newsworthy on two counts in particular: 1. It makes extensive use of one of the newest of building materials—a glass-surfaced, load-bearing masonry unit (see next page). 2. It is planned not only to function with maximum efficiency but to impress the public favorably and thus, in itself, to do service as a good-will medium for the product.



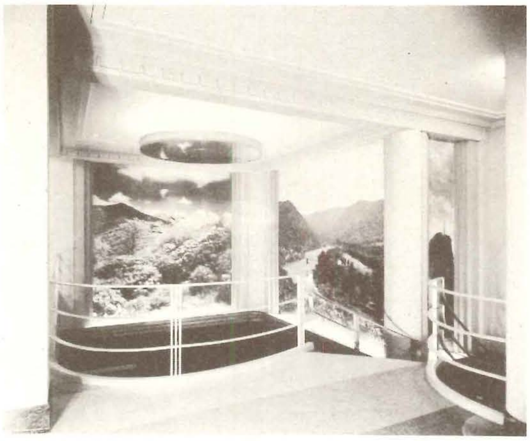
Interior photos by Elliot Lyman Fisher

THROUGH LOBBY WINDOWS at right the public views the process

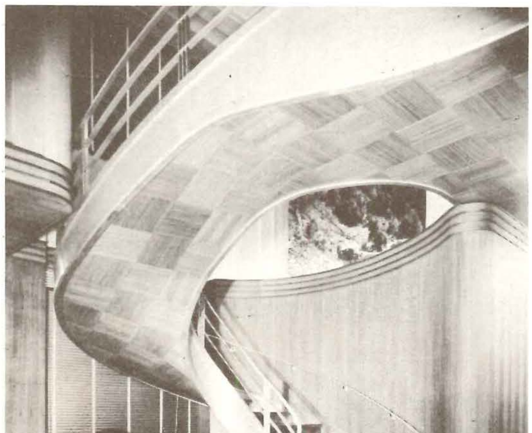
IN THE INTERIOR PLANNING of the building, also, public relations play an important part. One whole wall of the wood-surfaced main lobby is of plate glass. From this window wall, the public may look down on the assembly-line bottling process, which is located on a floor level three feet below. The terrazzo floor of the lobby contains a map of the territory served by the plant.

The bottled product is distributed by company trucks; hence the series of garages and large repair and maintenance shops. The fact that each route salesman is responsible for his own truck explains the use of individual garages instead of a large open storage space. A sizable loading dock is located behind the main work area. Advertising offices, storage rooms, a syrup room and an assembly room with pantry and kitchen occupy the second floor.

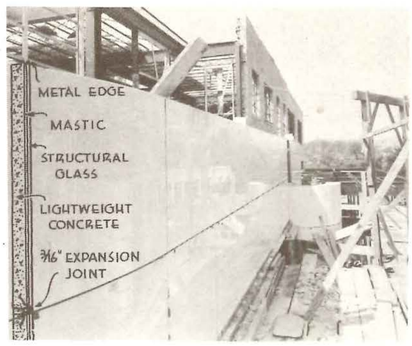
The building has a structural steel frame, concrete joists with removable metal pan floor construction, and metal roof joists with an insulated roof slab. The exterior is largely of the glass masonry (detail below). Windows are either steel sash or glass block; trim is stainless steel.



PHOTOMURALS decorate upper lobby



ALUMINUM HANDRAIL; wood veneer ceiling



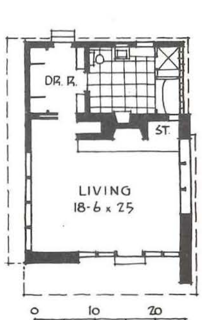
GUEST LODGE AT GRAVELLY VALLEY, CALIF. MARIO CORBETT, Architect, ALEC YUILL-THORNTON, Collaborator

VACATION HOUSES

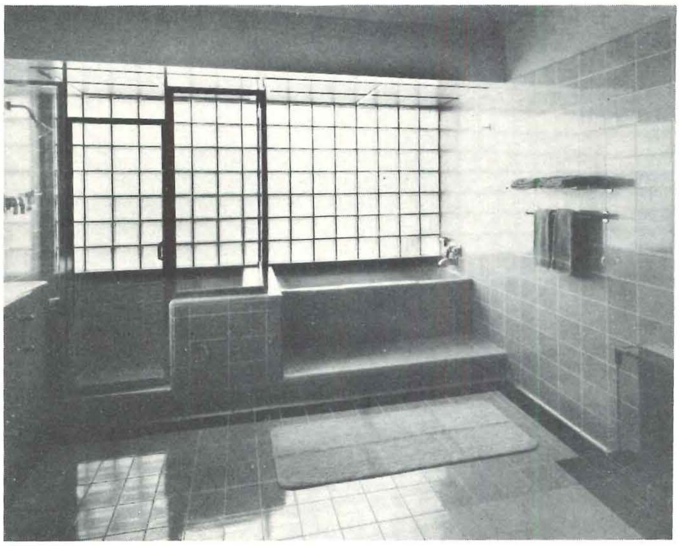
The design of houses for special or seasonal occupancy presents many problems to the architect—necessity for low cubic costs, scarcity of many modern building materials, difficult site conditions; at the same time, such projects ordinarily offer wider scope for imaginative solutions than the typical suburban location. Shown in the following pages are a number of such houses from various parts of the country.

VACATION HOUSES

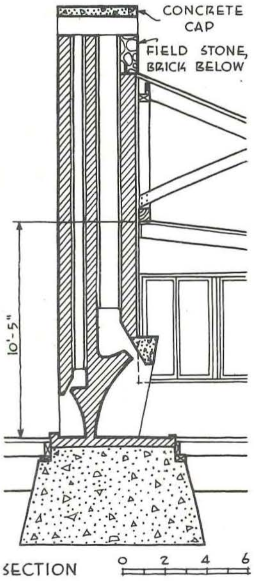
MARIO CORBETT, Architect ALEC YUILL-THORNTON, Collaborator

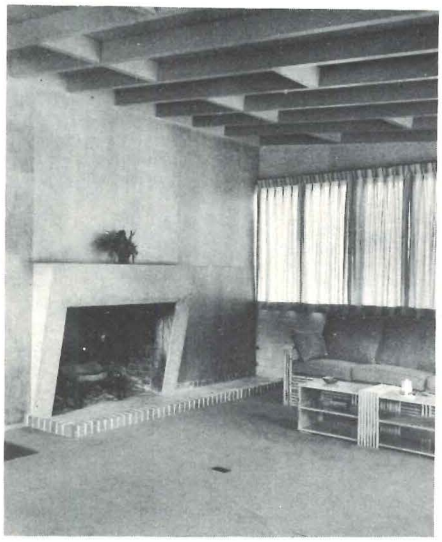


GUEST LODGE AT GRAVELLY VALLEY, CALIF. The bold use of natural and processed materials combines to give this house for George Pope Fuller an indigenous character. Masonry is local stone, gathered on the site, its ruggedness relieved by the juxtaposed surfaces of natural redwood, log-oil finished. The roof is of handhewn redwood shakes. The house has no kitchen, as all meals are served in the adjoining main house. Bedroom and living room are combined, at the owner's request. This is compensated for by the large dressing room and bath, which provide ample storage space as well. The large living room opens onto a covered terrace which overlooks a polo field and has a magnificent view of the surrounding mountains. Walls of this room are finished in English harewood and grass cloth. A. Wilbur Woodruff was the decorator.



LUXURIOUS BATH has its own fireplace



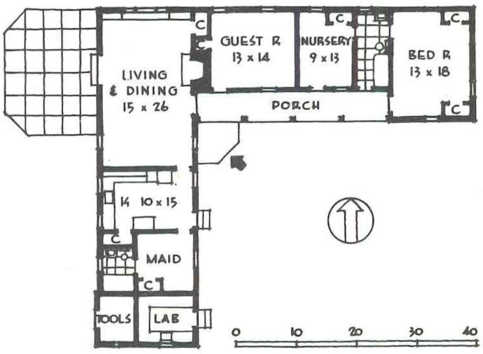


DETAILS of living room fireplace

LIVING ROOM looking towards terrace

Photos by Philip Fein

VACATION HOUSES



WILLIAM F. DOMINICK, Architect

SUMMER COTTAGE AT NORFOLK, CONN. A fresh adaptation of traditional forms, the L-shaped plan of this small house is admirably adapted to the site, and has the additional advantage of segregating the three main areas—living, sleeping, and service. The exterior is of white clapboards with green trim and shutters. Bedrooms open off the porch, and have cross ventilation. Note provision of tool room next to dark room laboratory. The interiors are simple; walls and ceilings are finished in wallboard, painted white.

Photos by Gottscho

HOUSE, from garden side

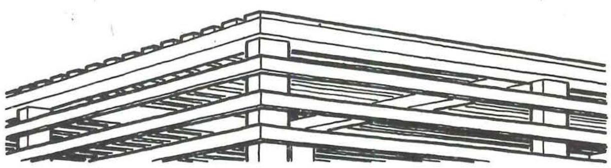
TERRACE, opening off living room

LIVING ROOM

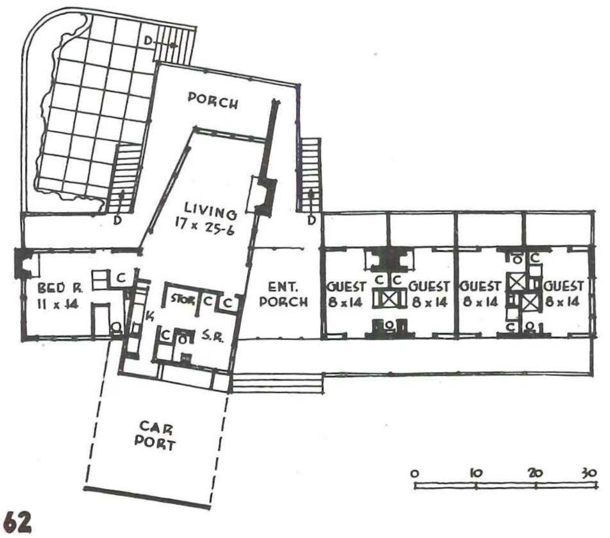
DINING ROOM, showing door to kitchen

VACATION HOUSES

1"x3" SLATS, 3" O.C., 15" ABOVE ROOF, RUNNING EAST AND WEST
FRAMEWORK 2"x4"s, 4'-0" APART, RUNNING NORTH AND SOUTH WITH 1"x3" CROSS BRACING APPROXIMATELY 4'-0" APART
2"x 4" POSTS ON 4"x6"x8" BLOCKS AT EACH INTERSECTION



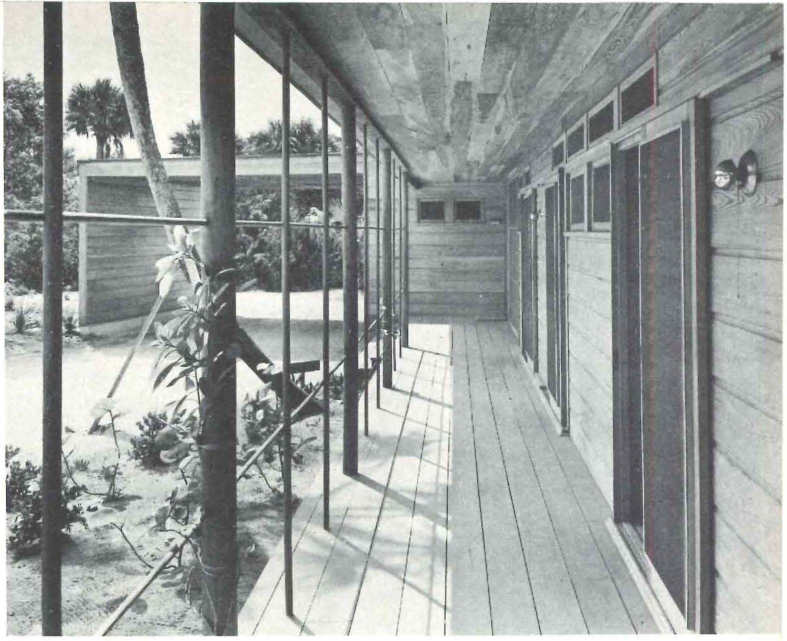
An ingenious wood lattice, 2 ft. above built-up roof, extends over entire house and deflects sun's rays like florist's "lath house"



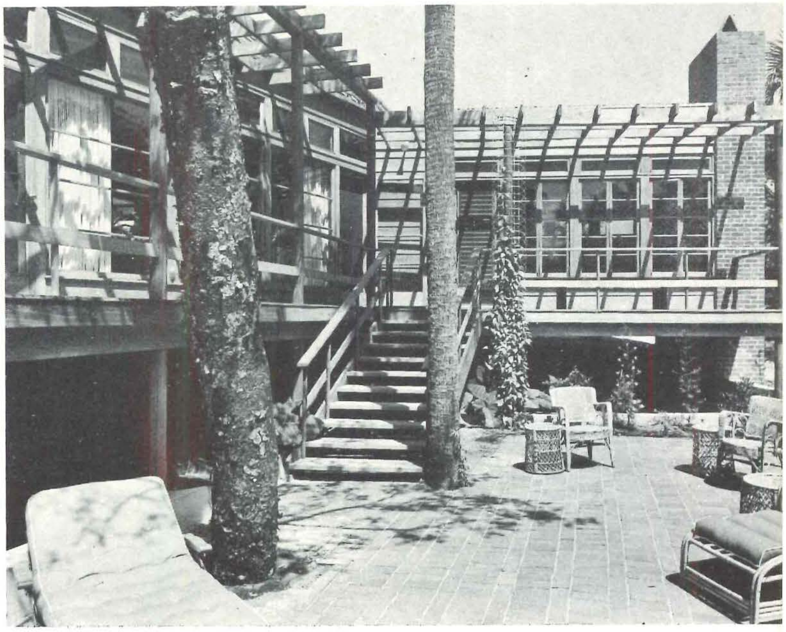
ALICE MORGAN CARSON, Designer
VAN DER GRACHT and KILHAM,
Associated Architects

VACATION HOUSE ON INDIAN RIVER, HOBE SOUND, FLA. This two-unit plan resulted from the owner's request for a guest wing separate from the rest of the house. To connect the two units the traditional southern breeze-way was introduced and this forms a pleasant living porch. Since most meals are taken at a nearby club, housekeeping arrangements are kept at a minimum. Beyond a desire for something simple but "different," the owner had no preconceived ideas for the design of the house. Construction is frame except for foundations and chimneys; exterior siding is cypress, and interiors are finished in cypress and southern yellow pine. To protect against dampness and termites the house is raised from the ground.

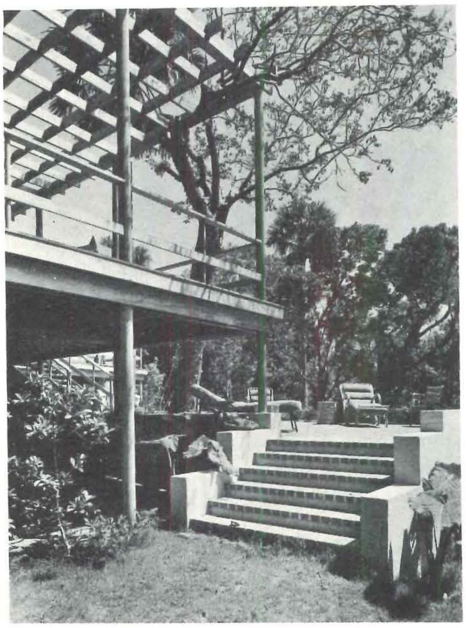
Photos by Gottscho



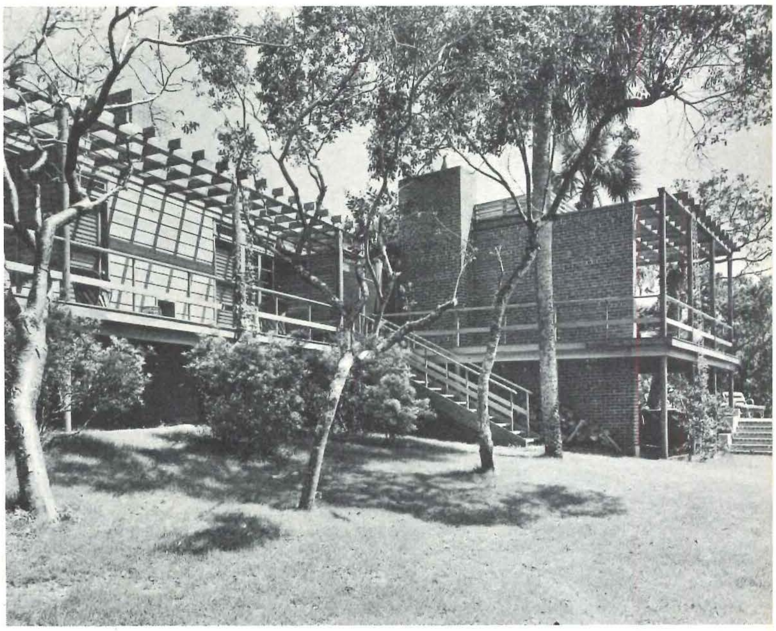
GUEST WING: Note louvered sliding screen doors



LIVING ROOM angle determined by river view

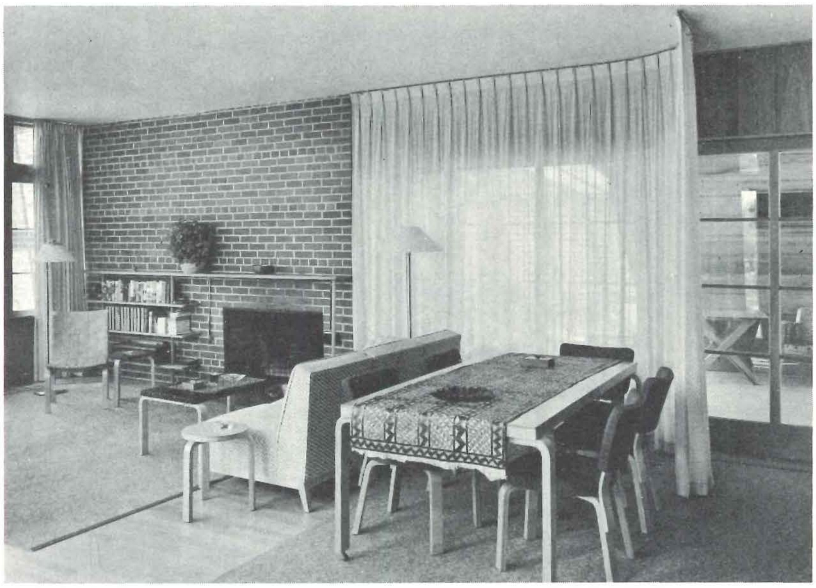


DETAIL of TYPICAL framing

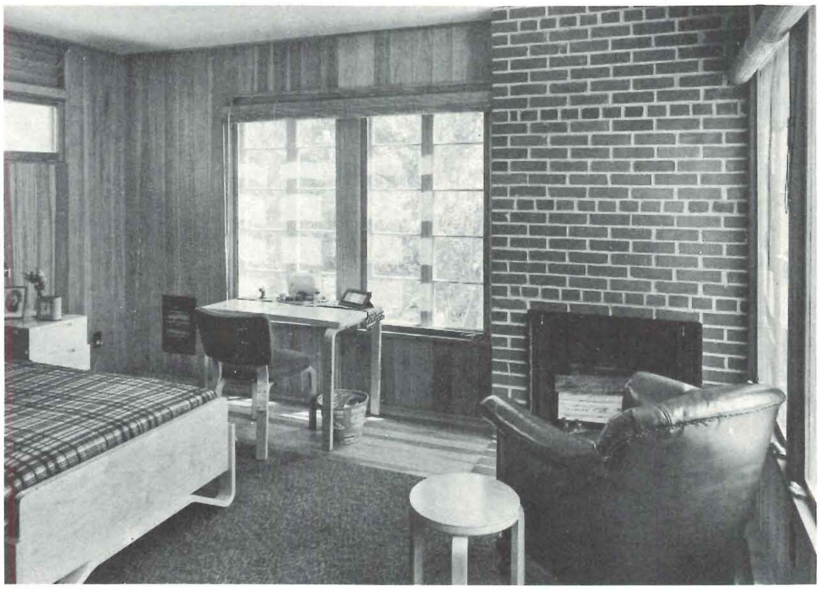


WING WALL of terrace cuts off cold winds

Interiors overpage→



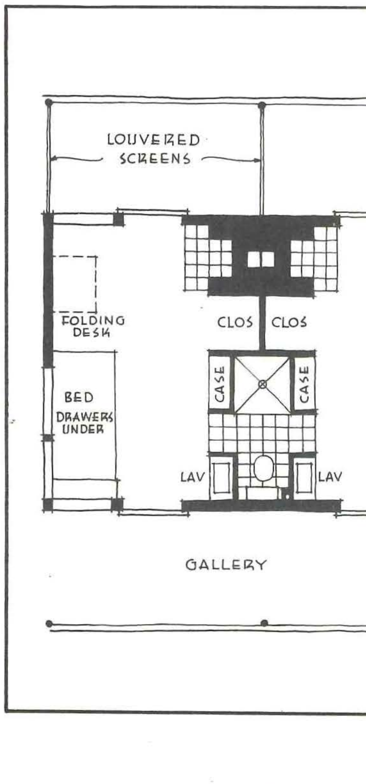
FIREPLACE wall of living room



MASTER BEDROOM in main wing

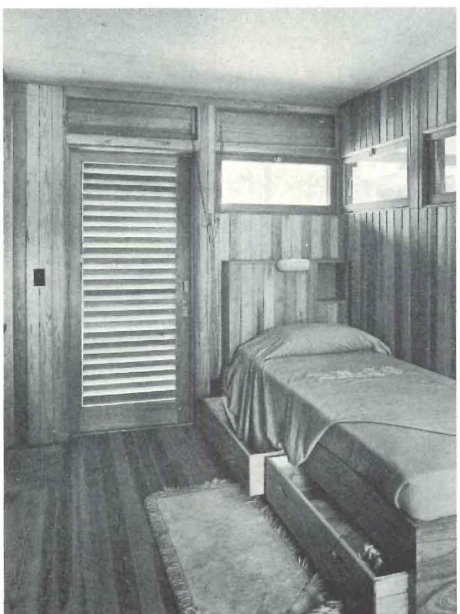
Photos by Gottscho

BREEZE-WAY is screened and roofed

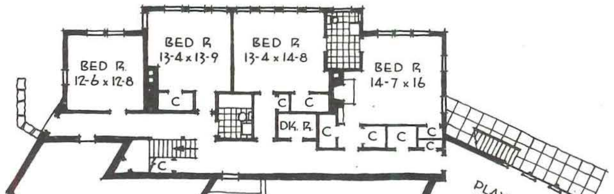


LIVING ROOM commands view of river

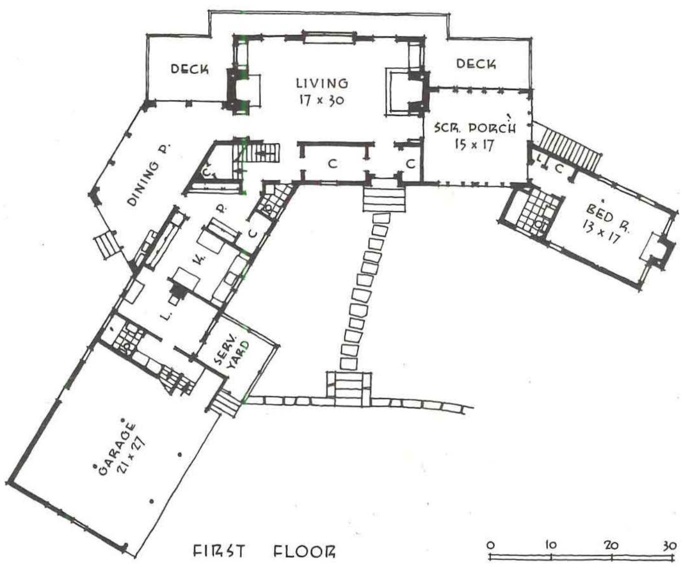
GUEST WING provides accommodation for four guests in minimum area



Photos by Richard Garrison



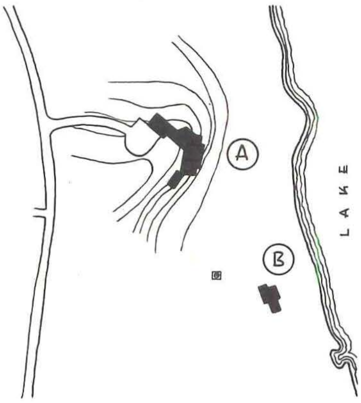
LOWER FLOOR



FIRST FLOOR

0 10 20 30

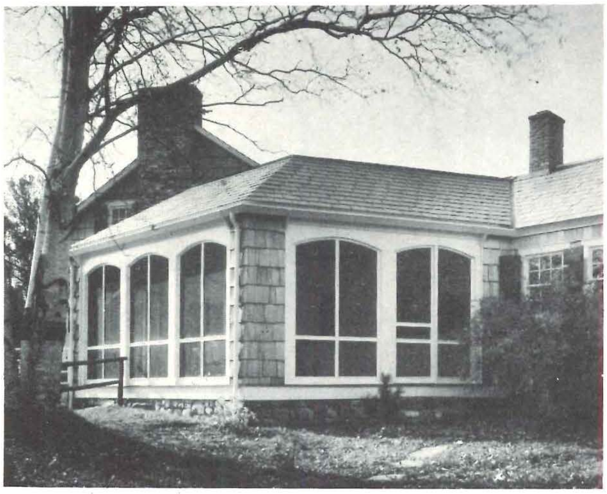
VACATION HOUSES



CHARLES NUTT, Architect

MAIN HOUSE (A)

SUMMER HOME AND GUEST COTTAGE AT SILVER BAY, LAKE GEORGE, N. Y. Situated on a bluff overlooking the lake, the main house (A) is two stories high on the entrance side, but increases to three stories at the rear. A feature of the house is the provision of large deck and porch areas for outdoor living. The plan organization is simple, with the service area in a wing, living area in the center overlooking the bay, and ample sleeping space supplemented by the third floor dormitory. All main living areas overlook the lake. Construction is frame, with wood shingle siding and composition roof.



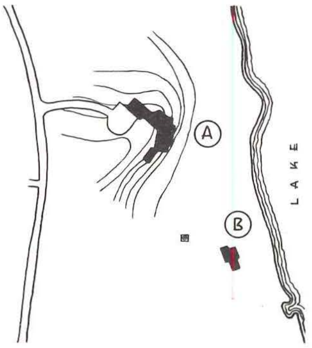
DINING PORCH: exterior

DINING PORCH: interior

Guest house (B) overpage →

IVING ROOM: stairs lead up to dormitory, down to bedrooms

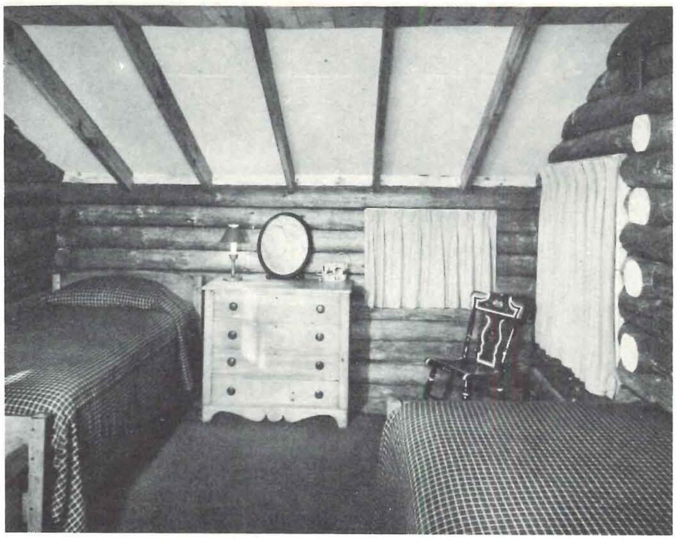
BEDROOM

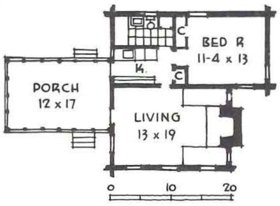



LIVING ROOM

GUEST HOUSE (B)

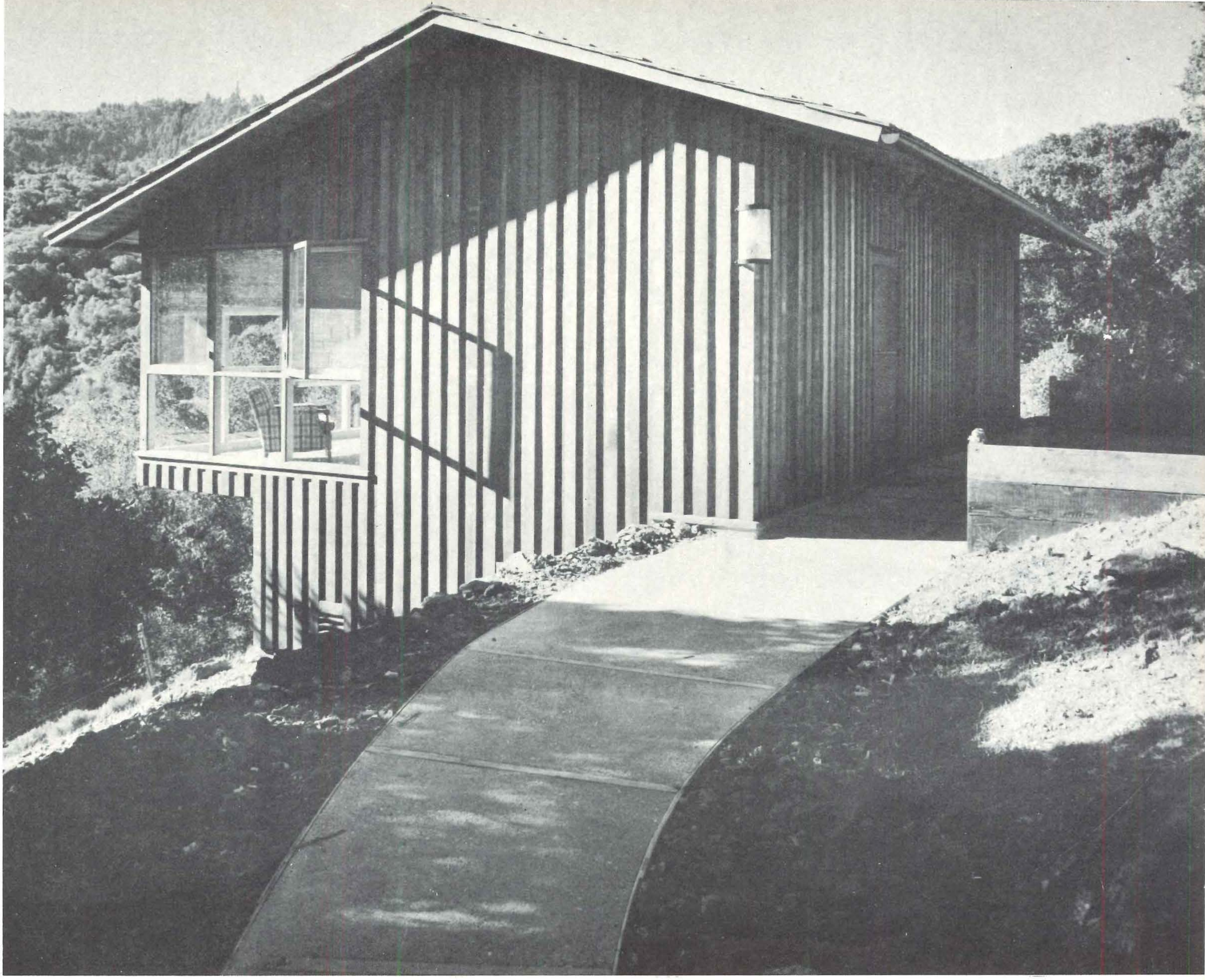
Nearby, just down the hill from the main house, is this log cabin which accommodates additional guests. Its location in the middle of a grove of pine trees makes the use of rugged materials particularly appropriate. The screened porch acts as an outdoor living room, and the living room can be used to house two additional guests. The cabin is of typical log construction; ceiling beams are of rounded logs, with wallboard filling the interstices.


BEDROOM




LIVING PORCH

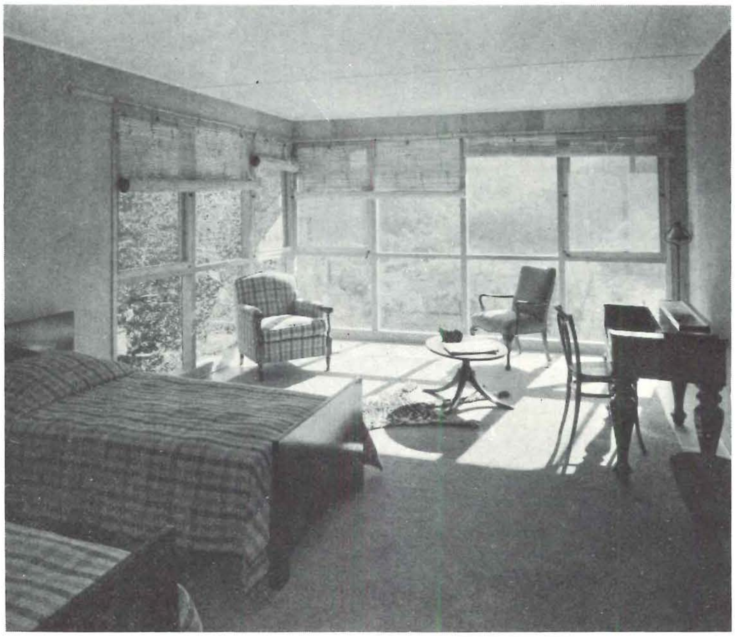
Photos by Richard Garrison

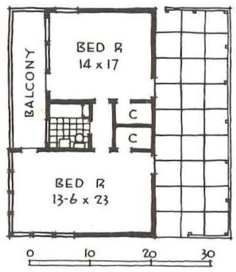


Photos by Roger Sturtevant

VACATION HOUSES

BEDROOM showing cantilevered window bay

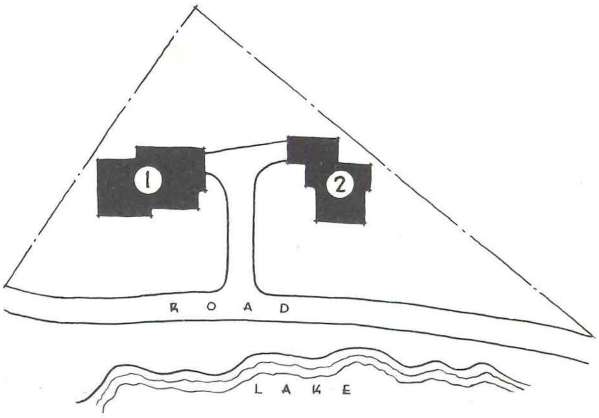


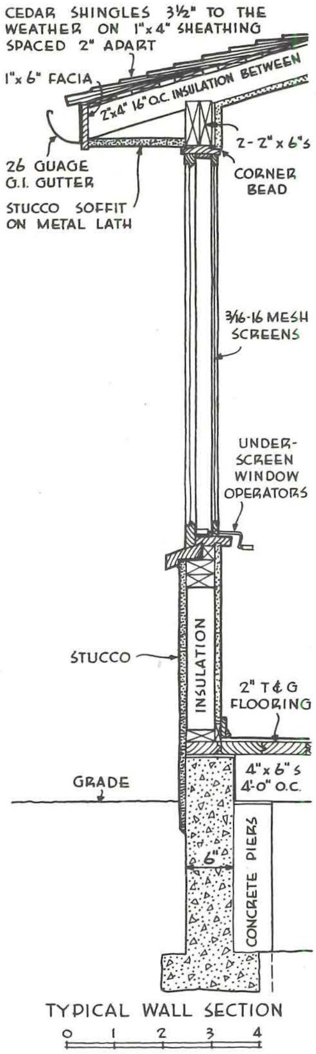


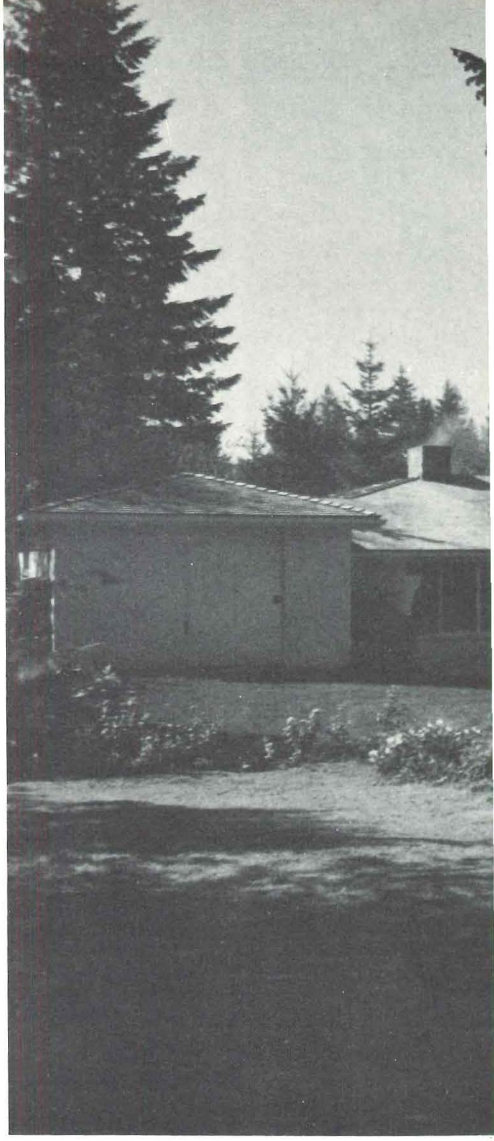
WILLIAM WILSON WURSTER, Architect

GUEST HOUSE NEAR GILROY, CALIF. This two-bedroom house, located not far from the main house, overlooks a fine valley view. To take advantage of this view the architect provided floor length windows on that side of the house and a balcony, which is cantilevered out over the hillside. No kitchen was provided as the meals are served at the main house. The exterior is of redwood board-and-batten construction. The basement contains a water heater, and storage space. The extremely simple plan lends itself to easy adaptation.

VACATION HOUSES



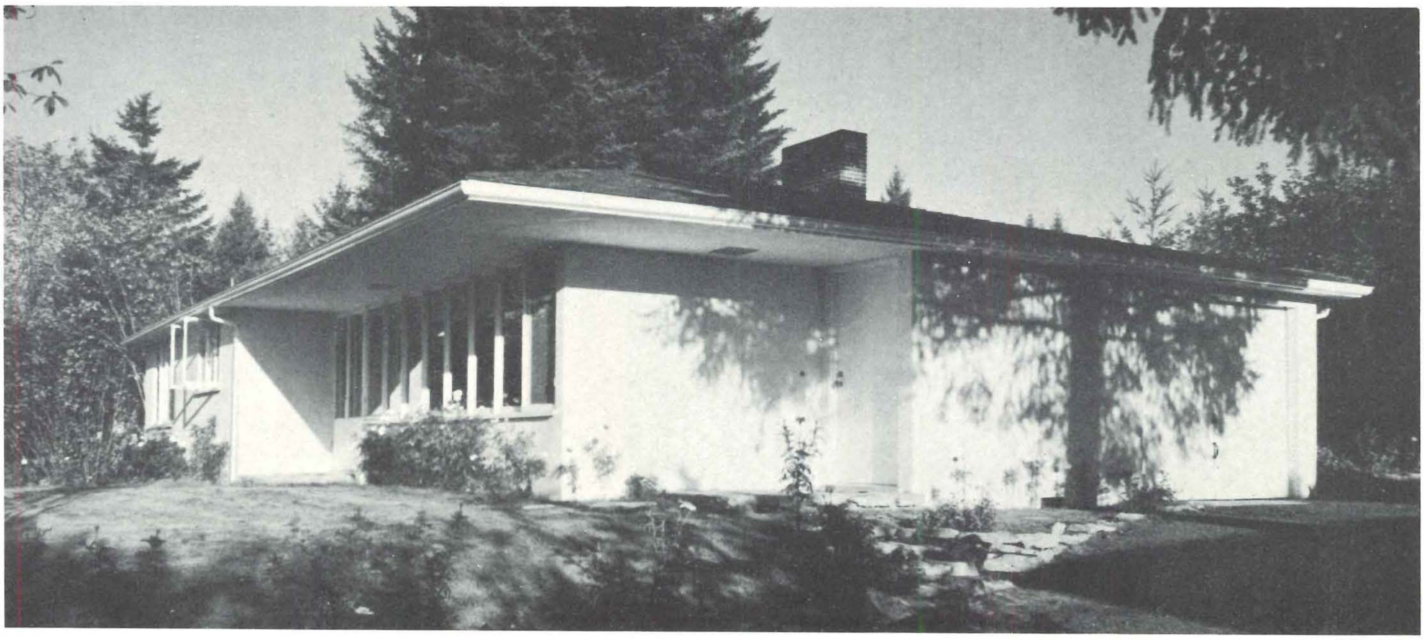




HOUSE No. 2

VAN EVERA BAILEY, Architect

TWO SUMMER COTTAGES AT LAKE OSWEGO NEAR PORTLAND, ORE. These two cottages, situated on adjoining lots and overlooking the lake, were built for rental. They are of identical construction—stucco on metal lath—and are designed for minimum first and maintenance costs. One interesting feature is the floor construction (see section at right) which—instead of the usual sub-flooring laid on joists on 16-in. centers—employs 2-in. tongue and groove flooring laid on 4-by-6-in. beams, 4 ft. on centers. Another feature is the architect's elimination of interior trim by an ingenious use of metal corner beads.

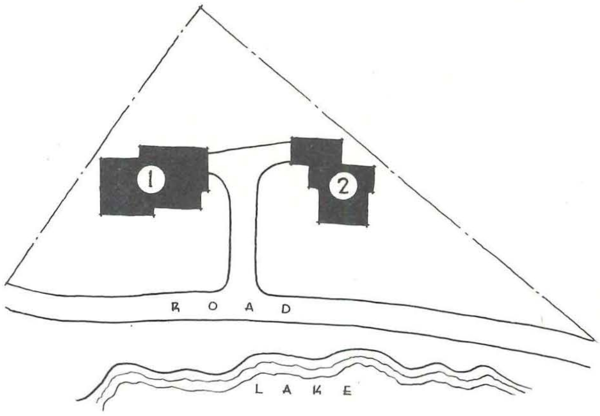


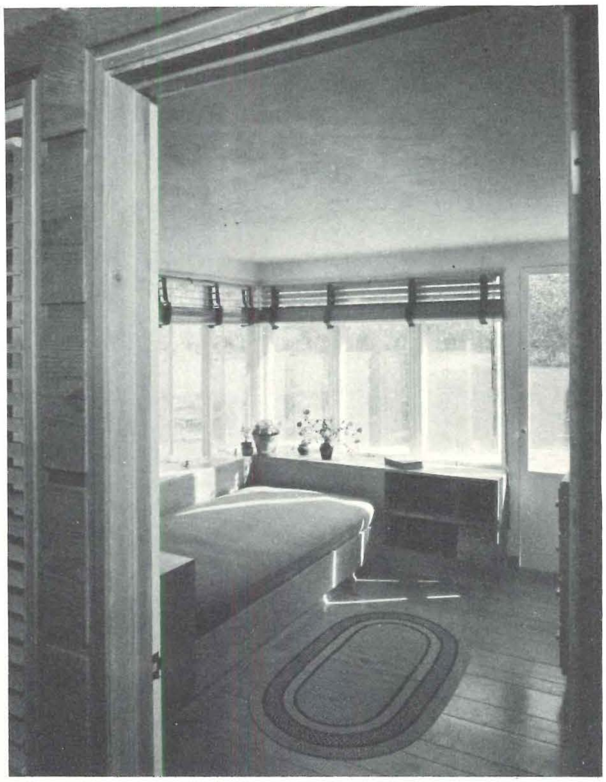
Photos by Roger Sturtevant

HOUSE No. 1

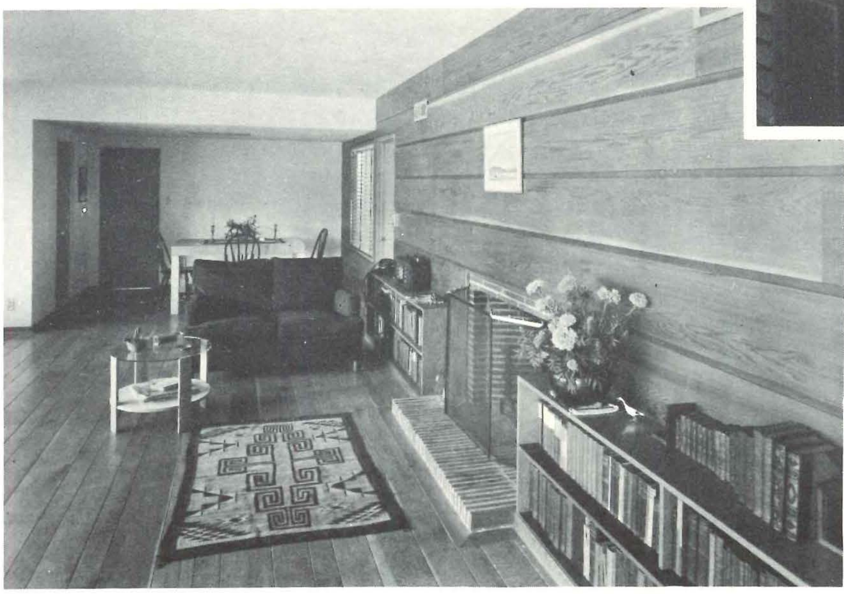
HOUSE No. 1

HOUSE No. 2

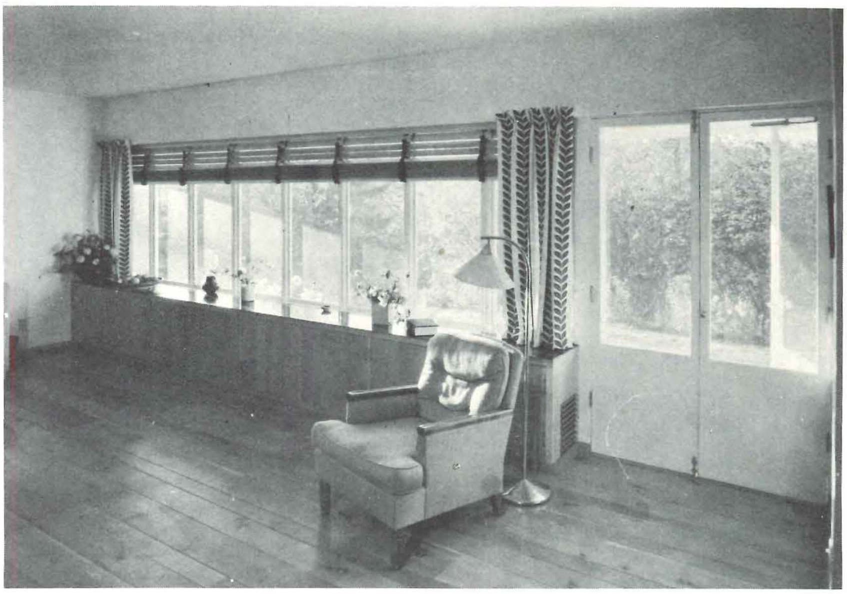




PORCH serves as guest room



LIVING ROOM toward dining alcove

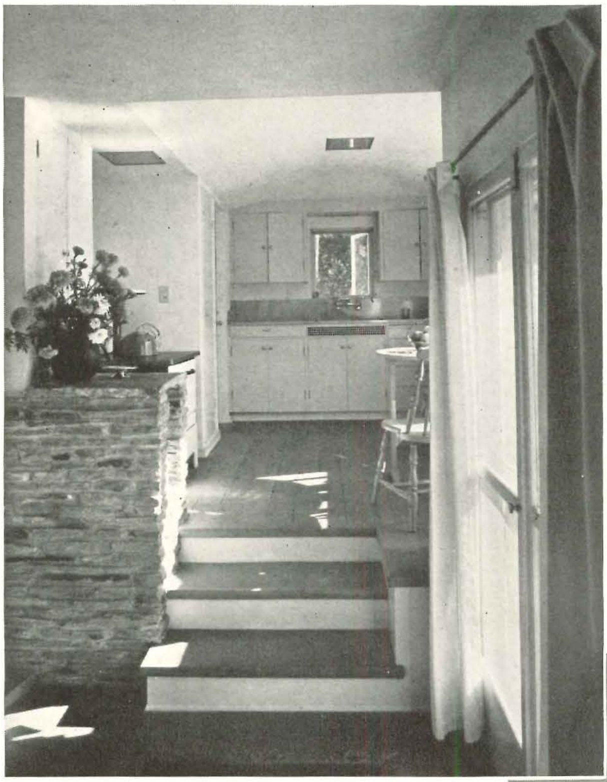


Photos by Roger Sturtevant

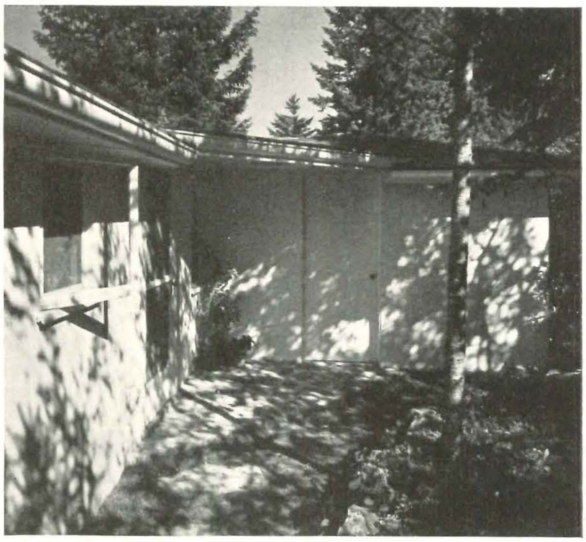
WINDOWS in living room overlook lake

← HOUSE NO. 1

SOMEWHAT LARGER than its companion, this house provides two bedrooms and a glazed porch which can be used for over-night guests, in an unusually economical plan. All doors and windows are without trim; all walls are plaster, except living room fireplace wall.



DINING-KITCHEN AREA

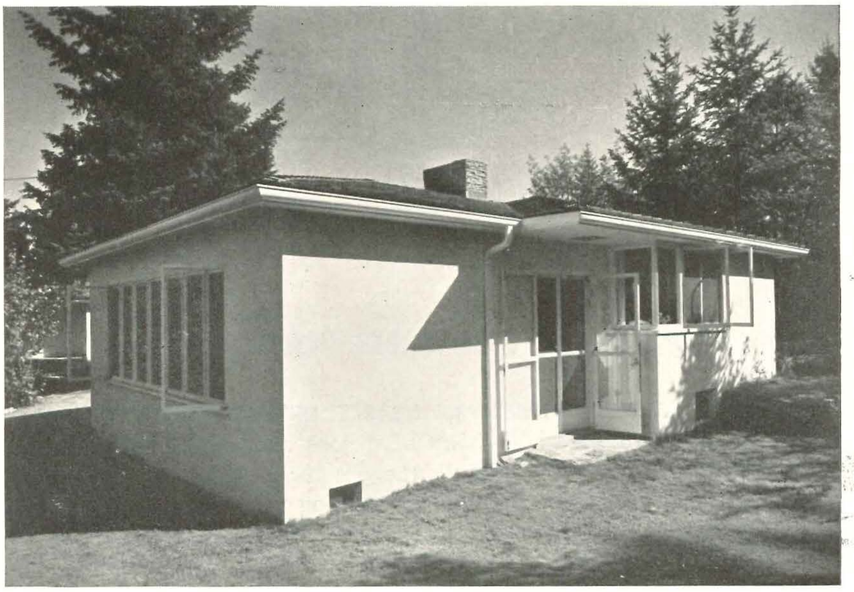


SERVICE ENTRANCE

LIVING ROOM fireplace

HOUSE NO. 2 ⟶

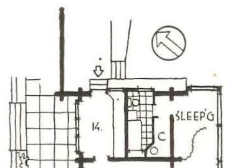
A CHANGE in floor level is neatly accomplished between living room and dining areas at the fireplace, while the single bedroom—with its large closet and bath—is on same level as living room. Construction and finish are identical with that of house No. 1.



LIVING ROOM doors

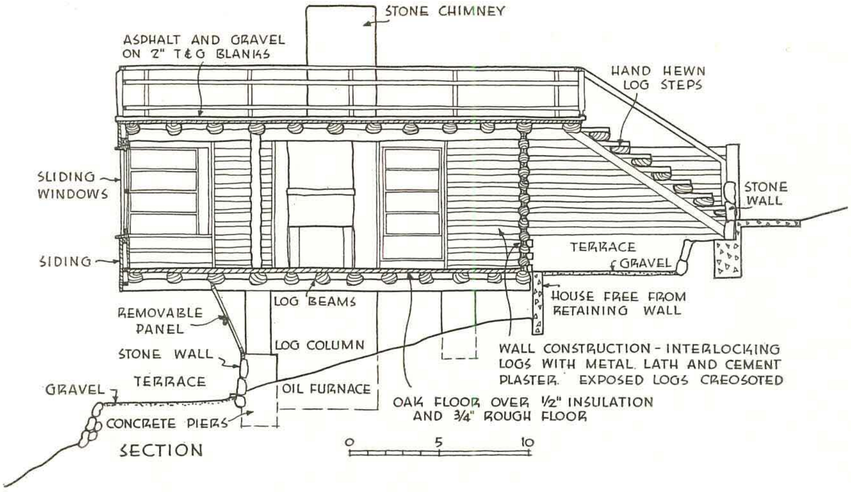
Photos by Emil Senknecht

VACATION HOUSES



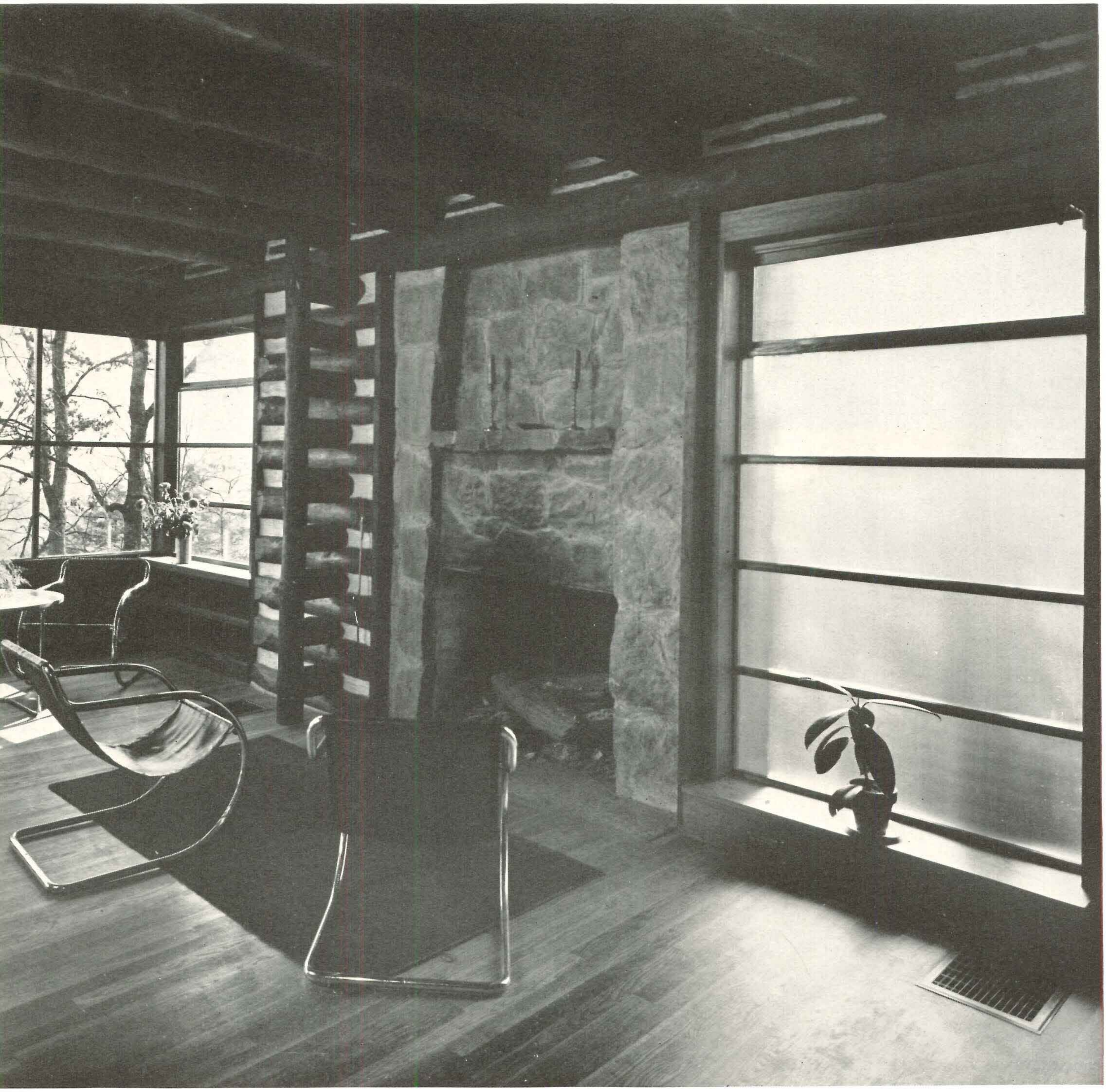
ALFRED CLAUSS and JANE WEST CLAUSS, Designers

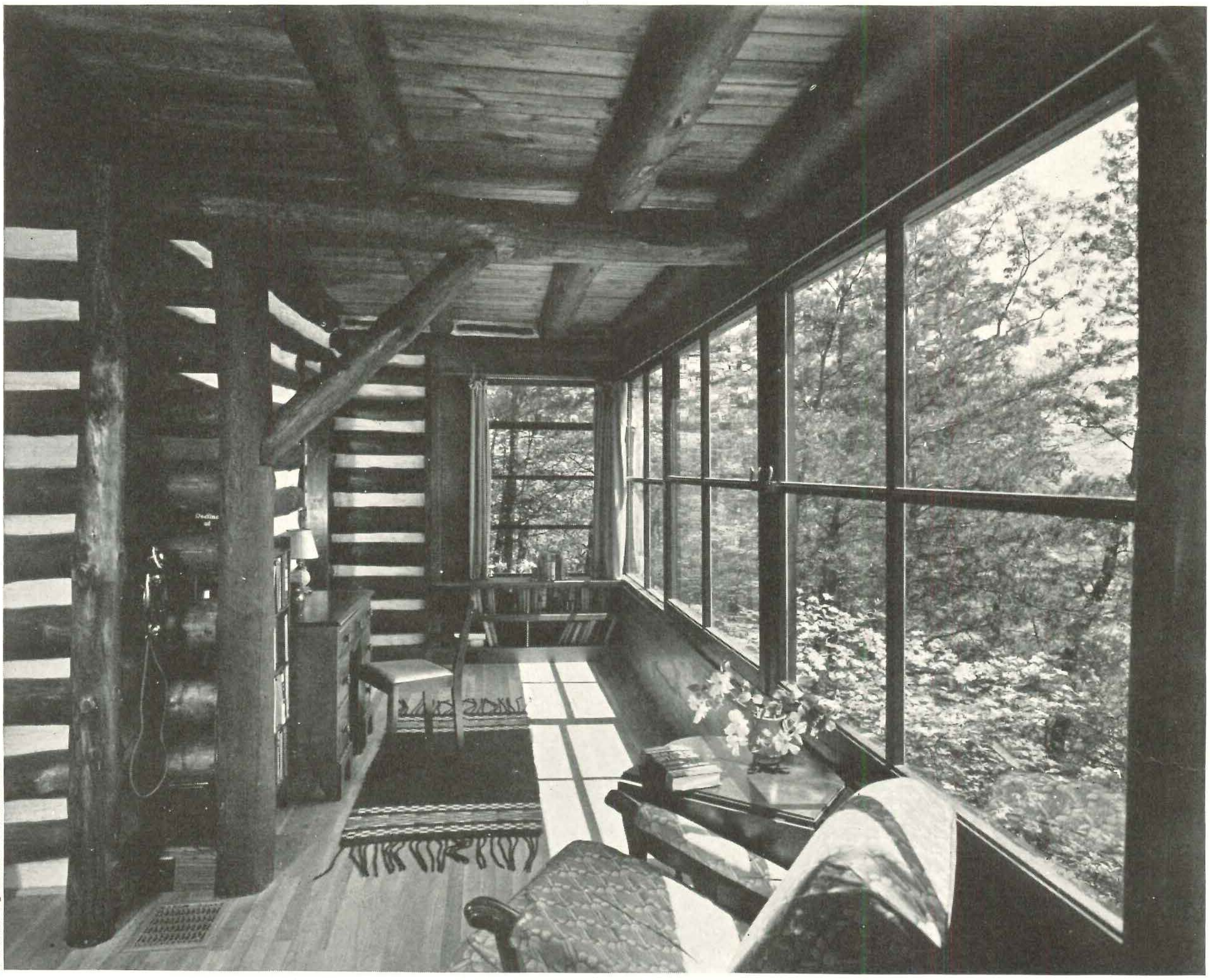
LOG HOUSE IN LITTLE SWITZERLAND NEAR KNOXVILLE, TENN. A somewhat adventurous use of native materials—hand hewn logs and masonry of local stone—marks this weekend cottage. According to the designers, "The basic design is a playful arrangement of interlocking log walls supporting an overlook and play terrace. This structure rests on six massive concrete piers and is cantilevered over the hillside." The exterior is made up of hand hewn logs, creosote-stained; light gray plaster, and rough stone-work. Flush siding on the overlook is painted light gray. Sash, doors and trim are of natural redwood.



SECTION

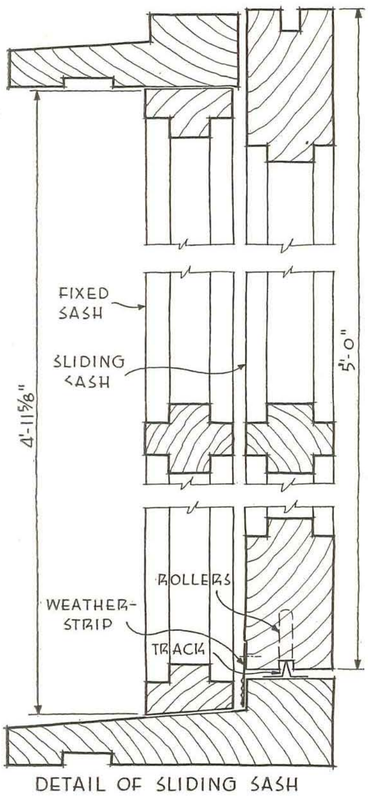
LIVING ROOM



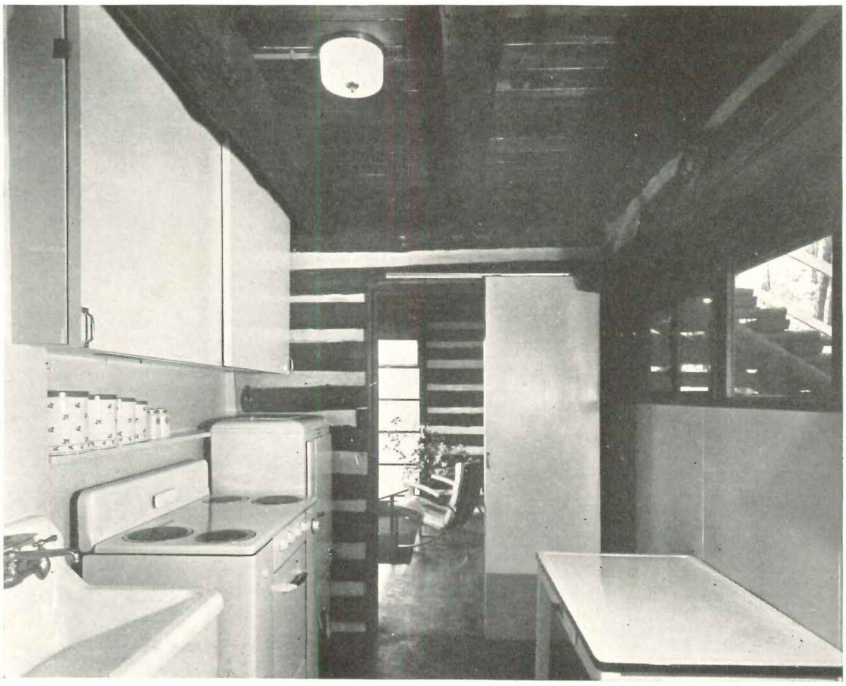


Photos by Emil Senknecht

OVERLOOK: Note that large windows slide on show case track



DETAIL OF SLIDING SASH



KITCHEN looking toward living room. Doors and cupboards slide on light weight roller track; stock trailer-type projecting windows provide ventilation here

Most for least in houses has always been one basic objective of both architect and client. And in the search for that ideal the factor of cost has often loomed large as a practical barrier to the owner and as a stumbling block to the architect conscientiously seeking to provide a true economy and high value in construction and equipment.

These difficulties often have arisen because *cost in terms of price* has been confused with *cost in terms of value*. They are not the same. The first is static and arbitrary; the second, progressive and relative. The necessity for clearly differentiating between them is growing greater as long-term amortization becomes more generally the accepted method of house financing. Today the monthly cost of living in a house is the popular — and essentially correct — measure of true economy and value. And more and more the architect has the responsibility of convincing his client that too often the low price of a unit forecasts a high cost of using it; and that cheap building products are the will-o-the-wisps that lead to jerry-building and higher living costs.

This article offers one effective means of attacking this everlasting cost problem. It suggests that the usual method of cost determination be reversed—that the monthly amount required to operate, maintain and pay for a house be regarded as the prime factor of cost control; and that the prices—or "first costs"—of structural and equipment items be established only on the basis of their long-term cost-of-use in relation to the client's budgeted monthly expenditure.

As a principle of sound business procedure this approach to cost analysis is as old as history. To many architects—and to the majority of their clients—it may be novel as applied to the residential field.

Presented here in broad terms this business-like method of construction cost analysis is subject to a wide variety of adaptation as circumstances may determine. From time to time the RECORD will report on its application in more specific instances and hopes thereby to clarify the problem of designing with dollars—the business side of the practicing architect's professional equation.

The author—known to RECORD readers as a former contributor and editor of the National Real Estate Journal—and the editors gratefully acknowledge the able technical assistance of Lawrence B. Perkins of the Chicago architectural firm of Perkins, Wheeler and Will.

BETTER HOUSES CAN COST CLIENTS LESS

By EMERSON GOBLE

IN DEALING with clients it is no longer realistic to discuss building costs solely in terms of original price. Modern financing has significantly changed all that. Something new has been added to the old saw, "It isn't the first cost, it's the upkeep." And that something new suggests the serious consideration of a different approach to cost problems.

What has been added to the old truth is easy, long-term financing for residential buildings. Now that houses can be financed under monthly-amortized loans extending over periods of 15, 20 or even 25 years, with down payments of as little as 10 per cent, first cost has lost its dominance. The architect and client can therefore think of building costs in terms of true long-term economy instead of limiting their plans to the client's immediate ability to meet lump-sum costs. As a result the client need not consider himself too poor to afford structural and equipment items that will make his house not only more livable and more valuable but actually less expensive through the years.

Technique for cost analysis

This situation suggests that the architect might well develop a new technique for the analysis of cost problems, to the benefit of both himself and his client. Stated in a few words, this technique proposes that, on certain questioned items in the specifications, costs be compared over the period of the mortgage, including besides the original price the costs of operating, maintenance, financing, and so on. Thus would a true measure of economy be found, which would justify a more flexible limitation on first costs.

A moment's examination of this cost thesis suggests several benefits that should be forthcoming. First, benefits to the architect: Primarily the architect would be freer to consider materials and equipment specifications on the basis of true *value* rather than mere *price*—and thus freer to build better buildings for his client. Perhaps he cannot save everybody from the clutches of the jerry-builder, but he should be able to capitalize at least to a certain extent on his professional ability to find the solution that represents true economy.

Long-term economy theme

Beyond that, the development of the long-term economy theme should enhance the professional standing of the architect and broaden his usefulness—with, for example the realty operator and the mortgage banker, to both of whom the buyer's living costs are of direct and long-lasting interest. The fuller understanding of long-term costs should also tend to lessen the need for open or vague specifications, and to prevent substitutions of cheaper, less suitable products. All in all, the interpretative analysis of long-term costs should be an important aid to the architect in selling his professional services.

Price confused with cost

From the client's standpoint, the advantages are equally obvious. Cost analysis on a long-term, periodic payment basis may prove that the client can afford a better house with more living conveniences than he thought possible, a house actually more economical in operation and final cost. It will not always be true, of course, that the best costs less, or that the client can afford every gadget he wants. But somewhere between the high that represents simple extravagance and the low that means excessive operating and maintenance costs is the proper building for him. It is the function of this method of cost analysis to find the optimum cost of construction.

Surely the basic premise is clear. Summarized for a client, however, it might go something like this:

Many of the cost barriers in residential construction are actually more apparent than real. They arise because the *price* of construction is too often confused with its *cost.* A low price does not necessarily correspond with a low cost because the *true cost* includes not only the initial price of a unit of construction or equipment, but also the expense of using it—the cost of its operation and maintenance over its useful life.

Thus the financial emphasis is shifted from original price to long-term cost of owning and operating the building. Clients might be shown that in view of today's financing methods they actually are not as much interested in lump-sum first costs as they are in monthly payments. This approach to building costs is merely an analysis of those payments—including the monthly costs of living in the building, heating it, maintaining and redecorating it, depreciating it, as well as simply paying for it. Surely that today is the final measure of residential costs; and it should also be the means of measuring the first cost of construction and equipment units.

Cost calculating method

The cost calculating method below is not suggested as being any simpler than the struggle to cut first costs to the bone. It may well require just as many kilowatt-hours of midnight oil. But it should produce a better, surer result.

VALUE FROM THE MORTGAGE LENDER'S VIEWPOINT...

DONALD K. VANNEMAN, now the New York mortgage loan correspondent of the Canada Life Assurance Company and formerly Chief of Supervision, Indemnity Section of FHA, is, at the same time, a conservative appraisor of mortgage risks and a vigorous foe of jerry-building. Speaking last month before the Philadelphia Chapter of the American Bankers Association, Mr. Vanneman stressed the importance of operating and maintenance costs in establishing a practical basis for mortgage financing. The following paragraphs are excerpts from his address:

"The operating and maintenance cost of the equipment vitally affect the borrower's ability to pay, as well as his willingness. For instance: A poor quality heating plant or one improperly designed to suit the heating requirements of the building may affect fuel costs by as much as 50 per cent. There are actual recorded cases where the heating of a six room house was reduced from $150 to $75 per annum after installing a properly efficient heating plant and insulation.

"What this means to the lending institution may well be realized if the capitalized amount of the savings of $75 a year, or $6.25 per month is related to the total amount of the mortgage. This monthly amount of $6.25 would retire a capital sum of $1,000 in eighteen years and eleven months with interest at 4 per cent. If it is considered that the typical small house mortgage averages $5,000, this monthly saving would repay *one-fifth of the total mortgage loan,* and would further

What are the calculations involved, and how do the items line up?

The principal cost elements taken into account include: first cost, operating, maintenance, depreciation, financing costs and total. *Operating costs* for a complete house would, of course, include many items—heating, domestic hot water, gas and electricity, insurance, water, waste disposal, and possibly others. *Maintenance costs* would involve repairs of many items, exterior and interior redecoration, servicing of structure and equipment, and so on. *Depreciation costs*—perhaps the most difficult to measure—are particularly interesting as a measure of relative worth of many elements of the building over a long period; and they provide also an estimate of things as they affect resale value or the value remaining in the structure after its mortgage is fully retired.

Long-time comparisons

The number of separate items under these classifications would be surprisingly long if worked out for a whole building, and cost calculations would likely get pretty involved. What the architect is most interested in, however, would not be a full calculation for a complete house, but rather long-time cost comparisons of certain things—two types of wall construction, perhaps—in first cost, operating, maintenance, depreciation, finance. He might well work out the comparative costs over a 20-year period (corresponding to the life of the FHA mortgage), then perhaps reduce the results to monthly figures representing total costs to the client.

Local costs all-important

There are many structural, finishing, and equipment items which should yield up interesting facts when so analyzed and compared. Types of wall construction, exterior and interior finishes, questions about insulation, heating plants and controls, choice of fuels, adequate wiring, kitchen cabinets and equipment, windows and storm sash, and many others. Obviously the method would be unnecessary for many items and indeed could be carried to the absurd.

It is to be expected that local costs will be all-important in any calculations and comparisons, and it is thus impossible to apply any generalizations without individual checking for a given locality. Fuels will vary widely in different territories, freight rates, distributional arrangements, local building codes, labor practices and costs—all will affect costs of materials and products and installation expenses, as well as maintenance and operation costs. Even such an item as depreciation will be affected to a certain extent by local conditions of exposure, and even by local customs of use and occupancy.

It should not be necessary, either, to warn against jumping to too definite conclusions, even after local circumstances are taken into account. It is quite apparent that the projected use and occupancy of a particular building will greatly affect the result—the size of the family, number of children, expected term of mortgage or occupancy, possibility of resale, etc. The final specifications as to many items, drawn in one way for a specific house, might come out quite differently for a house on the next lot, on the same basis of long-term economy.

Sample calculation

On the other hand it might be well for the estimator to work out a few typical calculations that could be accepted as more or less standard, or at least as normal.

The two tables on page 80 show the method in a sample calculation. These tabulations represent an effort

represent approximately 12½ per cent of the total monthly payments of such a typical borrower. Similar savings, although smaller in amount, may be realized in the maintenance and replacement costs of other durable equipment such as cabinets and ranges.

"It is certainly of vital importance to understand that the quality of the equipment installed should in all cases be considered in the value estimate. However, in consideration of quality with reference to cost one all-important factor must not be overlooked. The lending institution must consider that the excess cost for quality equipment in relation to the type and price class of the property must be reasonable as compared with a typical similar property.

"This world 'typical' is probably one of the most important words used in connection with correct valuation procedure and cannot be emphasized too strongly. Typical does not mean 'average' but refers to the general price and class quality that will have the greatest general market appeal. It would obviously not be typical for a house costing $3,000 to have an added $1,500 worth of special equipment, because the typical buyer in that market would not be willing to assume the extra expense, although it might be possible to find a few individuals willing to do so. On the other hand, a $6,000 house might well have $750 worth of quality equipment which would be considered as reasonable and fairly typical, with the result that the full extra cost might be reflected in the valuation."

SUB-STANDARD CONSTRUCTION . . . VS . . . GOOD CONSTRUCTION • 2" INSULATION

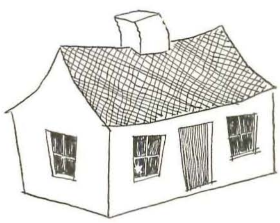
20 YEARS

SUB-STANDARD CONSTRUCTION

FIRST COST OF STRUCTURE	$2,000
OPERATING	2,880
MAINTENANCE	1,095
DEPRECIATION	1,400
FINANCING	838
TOTAL	**$8,213**

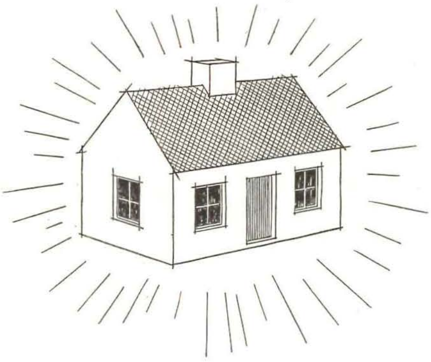
DETAILED SUMMARY

FIRST COST OF STRUCTURE		
Rough Carpentry		
Material	$550	
Labor	1,100	
Lathing and plastering	350	$2,000
OPERATING COST		
Heating estimate $12/mo. x 240 months		2,880
MAINTENANCE COST		
Assume decoration 6 times @ $150	900	
Repair foundation once, estimate	75	
Jack up floors and replace two wood posts	50	
Add steel beam to correct deflection	45	
Refit doors after settlement	25	1,095
DEPRECIATION		
$2,000 @ 3½%/yr., 20 years		1,400
FINANCING		
90% loan; 4½% interest, complete amortization in 20 years, and FHA insurance premium; @ $6.57/$1,000/mo. for 240 months		838
TOTAL		**$8,213**



AVERAGE MONTHLY $34.22

GOOD CONSTRUCTION • 2" INSULATION



FIRST COST OF STRUCTURE	$2,520
OPERATING	2,580
MAINTENANCE	480
DEPRECIATION	1,260
FINANCING	1,056
TOTAL	**$7,896**

DETAILED SUMMARY

FIRST COST OF STRUCTURE		
Rough Carpentry		
Material	$700	
Labor	1,250	
Insulation	120	
Lathing and plastering	425	
Basement steel	25	$2,520
OPERATING COST		
Heating estimate $10.75/mo. x 240 months		2,580
MAINTENANCE COST		
Assume decoration 3 times @ $150	450	
Minor repairs	30	480
DEPRECIATION		
$2,520 @ 2½%/yr., 20 years		1,260
FINANCING		
90% loan; 4½% interest, complete amortization in 20 years, and FHA insurance premium; @ $6.57/$1,000/mo. for 240 months		1,056
TOTAL		**$7,896**

AVERAGE MONTHLY $32.90

to compare two types of frame construction, sub-standard versus good quality.

If it should ever prove necessary to demonstrate the difference between sound construction and what might be called jerry-building, such a cost analysis ought to prove effective with a client. By getting the better house he actually saves $1.32 a month. The difference in first cost, representing the difference between a well-framed house and a poor one, is but $520. What that means to the client, assuming his down payment is 10 per cent, is that he has to raise $52 more to start with—after that he saves $1.32 a month for all of the years he occupies the house.

It will be noticed, in these tabulations, that this analysis is for the 20-year period of an FHA mortgage (it might be 15 or even 25 years) and assumes a 10 per cent down payment. It is important to remember in any analysis of this kind that all costs are prorated and combined in monthly sums to include both mortgage payments and living costs, and that after the mortgage is retired the owner's living costs would be considerably reduced. The advantages of the better-built, better-equipped house continue long after the mortgage has been amortized.

It is necessary in any calculation of this sort to make some rather arbitrary assumptions. Nobody knows, for example, how many times a poorly constructed wall will be redecorated in 20 years. Everybody knows, however, that plaster cracks will develop, and lath marks will show quickly in the uninsulated house; thus if it is to be reasonably well maintained the poorer house will be redecorated more often than the good one. However these costs come out, it is the method that is important.

Heating is one field of inquiry in which the range of possibilities will be exceptionally wide. If costs were the sole object, the choice of fuels would, of course, be of first importance. Beyond that, however, there is considerable range in different types and grades of heating equipment. Furnace efficiencies may vary as widely as 45 to 70 per cent. Rules of thumb as to cost limits are particularly dangerous here. There is an old idea, for example, that the cost of the heating plant should bear a definite ratio to the cost of the house, say 10 per cent. Any consideration of long-time costs soon breaks down any such arbitrary idea; indeed it is logical to assume that the home buyer with the small income is more interested in operating economies than the one who rates in the higher brackets.

As an example of how this reasoning might work out over the 20-year analysis a typical calculation of heating costs is given below. It compares the cheapest possible heater with one of the most expensive. The cheaper one is assumed to be a furnace with a conversion-type oil burner, with a heating efficiency of 50 per cent. The better one is a high-quality furnace rated at 70 per cent, burning oil of the same grade and cost.

As the tabulation indicates, total 20-year costs show a monthly saving of $1.55 over the full life of the building. This is still, of course, just a sample calculation, but surely it shows the vital importance of long-term cost analysis.

This monthly saving may become even greater depending upon how

These tabulations represent merely a sample calculation to suggest one way of setting up this method of cost analysis. Figures on facing page do not indicate *all* items of construction and equipment, but refer merely to costs incident to the framing and heating—this last because of the influence which use of insulation has on heating costs of the better-built house. . . . Many of the assumptions made could be argued one way or the other. The costs are but estimates (for the Chicago territory) and are not to be taken as in any way conclusive. The cheaper house assumes cheap material. Maintenance costs are estimated on the basis of keeping a poorly framed house in reasonably good condition. All depreciation percentages are purely arbitrary assumptions designed to show some variation in the over-all life of the two buildings. Financing costs are regular FHA mortgage rates for a 90 per cent loan. The better house was given cost figures for good sound framing—including a steel beam—and insulation. First costs are necessarily higher for both materials and labor; and on the basis of expenditure this house is assumed to cost less to heat, redecorate and repair.

20-YEAR COMPARISON OF CHEAP vs. HIGH-QUALITY FURNACE

	Cheap Furnace with Conversion-Type Oil Burner		Best Quality Oil Furnace	
FIRST COST	$175		$400	
OPERATING*		$3,000		$2,220
MAINTENANCE**		275		200
DEPRECIATION***		155		320
FINANCE		249		568
TOTAL		$3,679		$3,308
MONTHLY	$15.33		$13.78	

SAVING $1.55 PER MONTH

*Assumes 50% efficiency for the cheap burner; 70% for the better one.

**Assumes replacement of the cheap burner after 10 years, $75; assumes 25-year life for the better furnace and burner.

***Assumes depreciation of 80% on the better furnace; 80% also on the cheaper, except for extra depreciation of burner unit.

well and how extensively a house is insulated. Much technical information is, of course, available on use of insulation; but field tests have recently translated theoretical heat-saving values into cost terms.* For example, *Paul M. Tyler*, engineer of the U. S. Bureau of Mines, reports that field tests on house insulation conducted by the TVA revealed that "complete wall, floor and roof insulation may cut the fuel bill of a typical house in a relatively moderate climate as much as 44.75 per cent. The tests indicated that the saving might be increased to 50 per cent."

Again *John B. Rodee* of the J. B. Pierce Laboratory of Hygiene is the authority for the statement that "it will cost $75 to heat a small insulated house in Madison, Wis., but heat plus deferred payments on insulation with full-thick mineral wool will cost only $42 annually for the same house when paid for like the rest of the house over a 20-year period including interest. This means a saving of $33 a year until the loan is paid off, after which the saving goes up to $42."

Inadequate wiring system

Take wiring systems for one further example. In brief the background information on electrical systems for residences goes something like this:

An inadequate wiring system is first an annoyance merely because it lacks sufficient service outlets. Equally annoying—but also expensive and wasteful—is the poor performance of electric devices when the voltage is uncertain or definitely too low. Poor voltage is, of course, another result of inadequate wiring, for the conductors are overloaded and the voltage drop due to resistance in them is excessive.

There is an actual loss of power in overloaded conductors. In a lamp that may only mean insufficient light (a drop of 10 volts below rated voltage means a light loss of 31 per cent, and a waste in current cost of 15 per cent), but it also might mean that a larger lamp must be used. In a heating unit, such as a toaster, it means a definite economic loss, for the toaster must operate longer to toast the bread. Some types of motors operate fairly well under poor voltage, but still there is the loss of current in the overloaded wiring.

Savings pay for good wiring

It becomes difficult to calculate such actual losses over a long period, because of the obvious difficulty in weighing the several factors in the use of various equipment. A general statement has been made, however, that adequate wiring will pay for itself within five or six years in actual savings. In other words, the difference between the cost of an adequate wiring system, and one that won't quite do the proper job should be made up in savings in that time.

It is apparent that on this realistic basis of long-term cost analysis the architect can decide just where to draw the line in including the several items the client might want. It will be found that many things that seem too expensive will actually turn out the cheapest. Other items that appear economical will be found just the opposite. At any rate, when all the returns are in, the architect will discover how to use the available monthly budget to secure the maximum of comforts, conveniences and gadgets that make for better living. And, what is still more important, the client is not saddled with a cheap building that later proves very expensive.

Justifies better building

On that score the architect is entitled to his own satisfaction with the better building. Viewed in another light, the whole idea of long-term cost study is a means of justifying, in the client's mind, the better building that the architect always seeks to build. If it does that, it should secure for the architect many jobs that seem impossible to get in the everlasting struggle of costs vs. budgets. And thus it should considerably broaden the architect's usefulness in the residence field.

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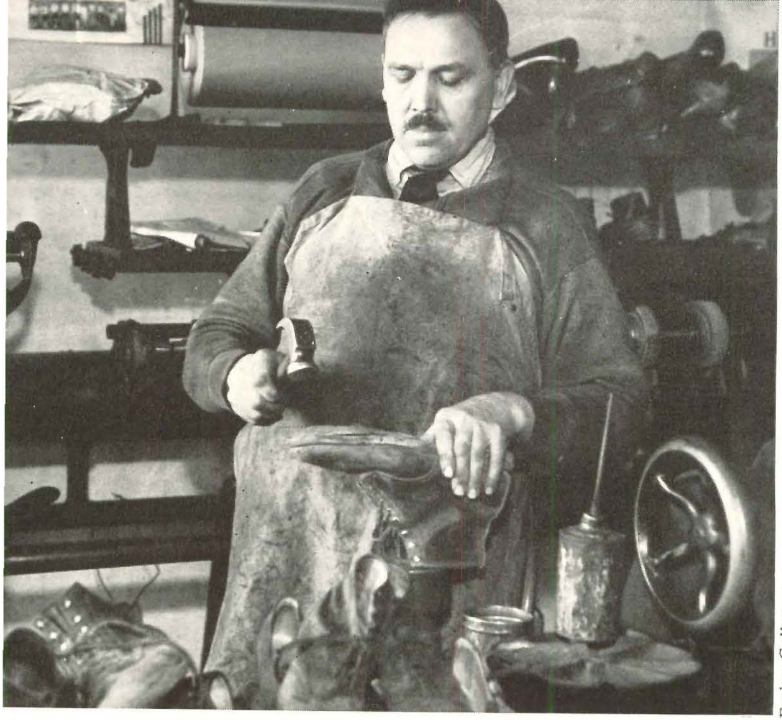
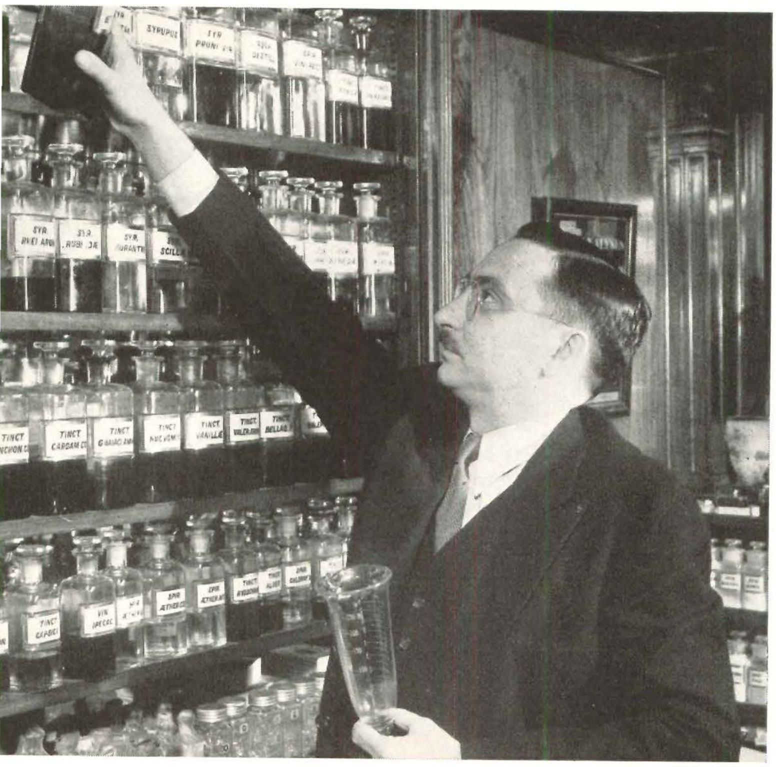
*For ASHVE comparison of calculated and actual savings see p. 116.



Ewing-Galloway



Courtesy Starchroom Journal

SERVICES *FOR SALE*

The American retailer is primarily a salesman of mass-produced goods; but most products of the machine age, and many personal needs, require repeated "servicing." In such fields the craftsman, the technician, the professional man still have direct contact with the buying public.

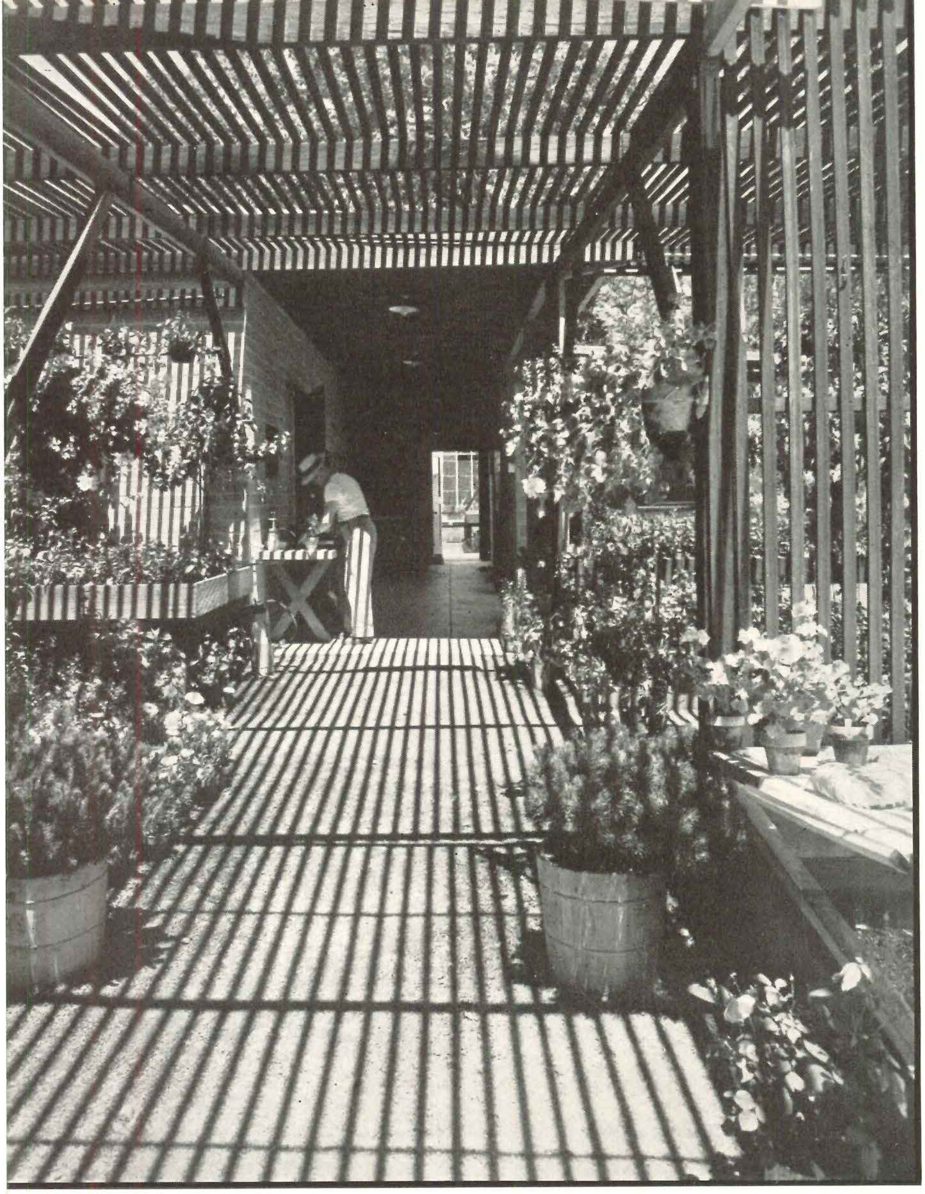
The 1940 census reveals that, in 1939, 645,966 such service establishments did nearly 3½ billion dollars worth of business. Laundries produced over one-eighth of this total. The census covered shops for personal services, such as beauty shops; business services, such as advertising and sign painting establishments; transportation services, including auto repair shops; other repair industries; custom industries; and others ranging from circulating libraries to tree surgery services. Not all of these merit architectural consideration, but most would benefit from such attention. And, no matter what turn world events may take, the need for service continues.

A BUILDING TYPES STUDY

By MORRIS KETCHUM, JR., Architect, in collaboration with the Editors of Architectural Record

The Editors wish to acknowledge assistance from *Automotive Merchandising*, *Laundry Age*, *Starchroom Laundry Journal*, and others.

BUILDINGS FOR SELLING

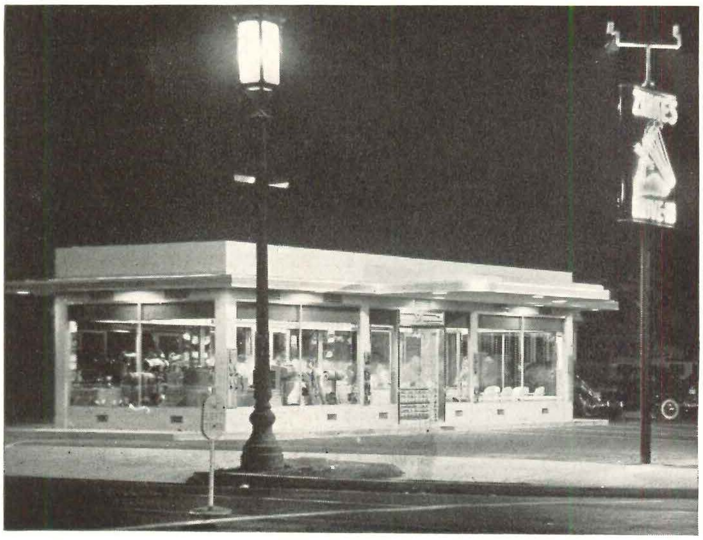


1

THE WHAT AND WHY OF THE DRIVE-IN BUSINESS

- American industry has attained a high point in production efficiency—but distribution has lagged far behind;
- 59c of the consumer's dollar goes for distribution—41c for production;
- Customers brought to market by automobile offer an ideal opportunity to reduce distribution costs;
- The "Super-Market" in the grocery field is a well-known successful attempt to reduce distribution costs;
- These markets draw customers from wide areas, from all segments of the population, and are most successful when combined with "drive-in" parking;
- In all businesses following the "drive-in" principle, the burden of distribution has been shifted to the consumer—eliminating costs of pick-up and delivery;
- This has resulted in cash savings for the consumer, more profit for the merchant.
- Many service stores—laundries, dry-cleaning establishments, road-side flower markets, auto-service stations and other branches of business activity—have thus linked sales and distribution to the auto age.

2



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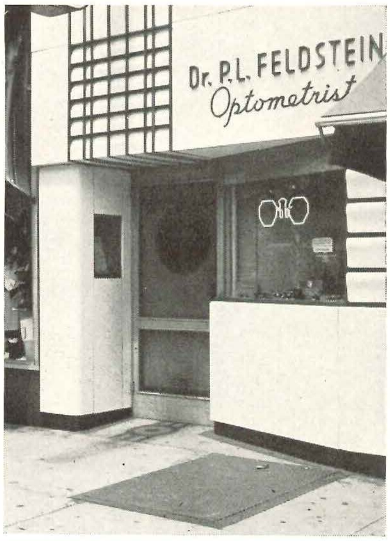


4

1. Lath Sales House, Sunnyside Nursery, San Anselmo, Calif.; Hertzka & Knowles, Archts. **2.** Wilshire Mayflower Shop, Los Angeles; A. C. Martin, Archt. **3.** Zinke's Drive-in Shoe Repair, Los Angeles; H. O. Sexsmith, Archt. **4.** Optometrist's Shop, Jamaica, N. Y.; N. R. Ginsburg, Archt. **5.** Goubaud's Beauty Bar, New York City; Karplus & Spelman, Designers. **6.** Gasoline Service Station in Texas with slanted glass to eliminate reflections, venetian blinds to protect customers from sun. Photos by Sturtevant, Berné, Gottscho, Garrison, St. Thomas, Libby-Owens-Ford

SERVICES OFFER UNIQUE DESIGN OPPORTUNITIES

GONE ARE THE DAYS of the craft shop when all goods were both made and sold under one roof. Only in the field of the service store are the dual functions of personal production and salesmanship still on view in the same establishment. Here the public buys services and goods that once were the results of home industry.

This fact gives the service store a tremendous initial advantage in the struggle for patronage: the average retailer's display opportunities are limited to stationary merchandise, however dramatized. *The service store can place a living product on view—human labor.*

This opportunity to display human activity can be translated into powerful advertising, when allied with good design. The modern retail store front combines the functions of a billboard to identify the owner's business, a display case for his wares and an invitation to stop and buy. But the service store problem offers the designer a chance to employ a "World's Fair" technique in dramatizing the craftsman, the technician, and his product.

It is still to the small unit that this talent can be most successfully applied. As in the past, service is still sold in small doses to small groups of people. The old-fashioned tailor, cobbler, or blacksmith operated a little shop for nearby customers. Even today, though cities have grown and distance is annihilated by transportation, small units remain highly profitable, whether individually owned, or parts of large chains. Service stores may draw patrons from a wide area, now that shopping distance is measured in minutes, not miles. They have grown somewhat in size and have modernized production and advertising to meet contemporary demands.

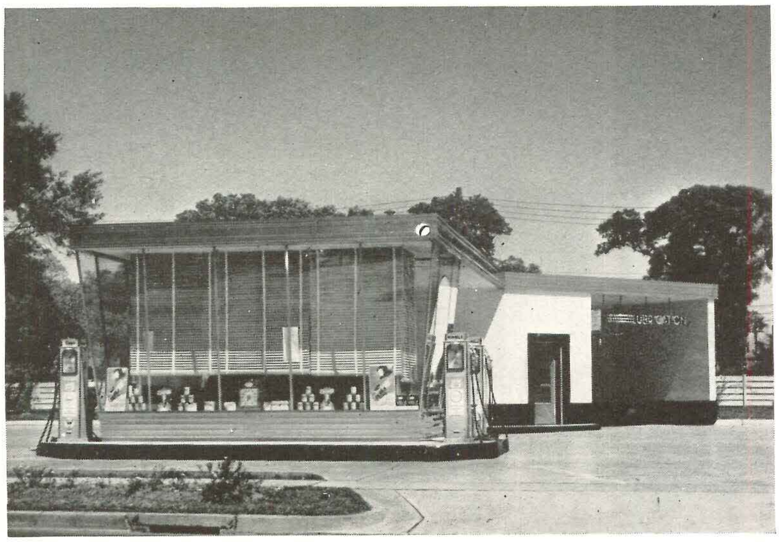
The physical layouts and appearance of service stores vary widely, according to location, type of business, and type of customer traffic. Those in the central core of a large city must rely on pedestrian customers. High rents and land values force them into cramped quarters on secondary streets. The result is a pattern of small shops designed as open show cases, or chains of small pick-up stations for a central plant. The familiar shoe repair shop, displaying uniformed workmen, and the dry cleaner's chain station, are examples.

On the city's fringe, strategically located between the business core and the outer layer of suburban homes, are found the newest types of service stores—the "drive-ins." These offer the motorist easy parking, quick and painless curb service, and the benefit of lower prices obtained through the elimination of pick-up and delivery costs. Laundries, dry-cleaners, shoe-repair shops, florists, and many others have followed the auto service station in adapting themselves to their customer's living habits.

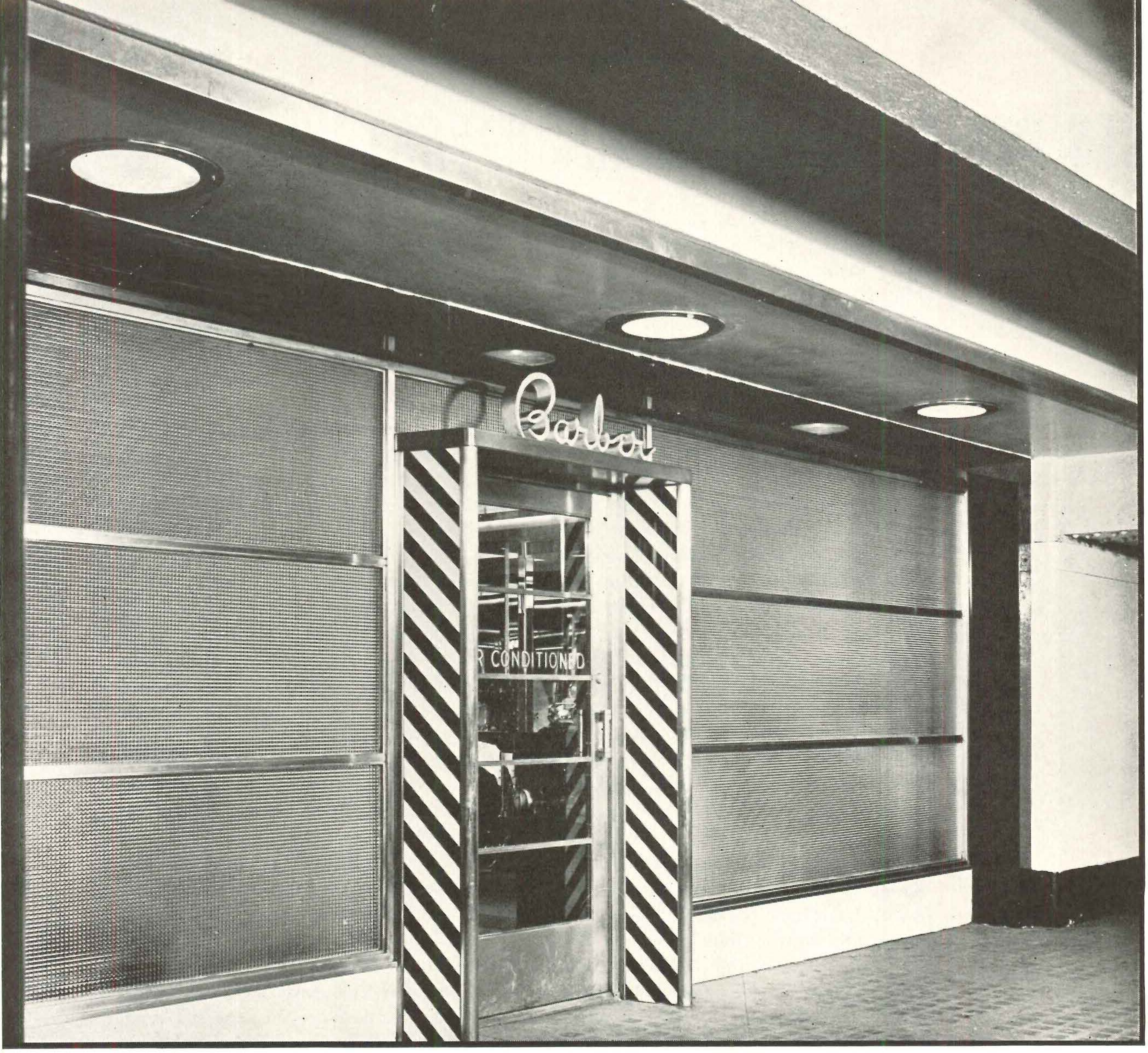
Such stores may foreshadow a city pattern of the future. Even now, the automobile has helped to spread the population of Los Angeles over 451 square miles, centering on business districts, and serviced by scattered drive-in shopping centers.

5

6



DESIGN



1

1, Barber Shop, Pennsylvania Station, New York City; Raymond Loewy, Designer: an attempt to invite interest by limiting the view of the shop's interior. But the shop is on a promenade where commuters throng past, so center glass panels, opaque in photo, have been replaced with transparent plate glass. **2,** Rainbow Laundry, Nashville, Tenn.; Woolwine and Harwood, Architects: loudspeakers and bundle-boys on roller skates speed deliveries to parked customers. **3,** Hedge's Tailors, New York City; Francis X. Gina, Architect. **4,** Packard Sales and Pure Oil Service, Saginaw, Mich.: small area for new car sales, large area for repairs and service

2

St. Thomas

3

PRINCIPLES CHANGE AS TYPE OF SERVICE VARIES

ALMOST ALL SERVICE STORES have the same basic plan. In its simplest form this consists of a glazed sales-and-work place, visible to the passer-by, in which customers are received and business activities carried on. Whatever offices, storage, supply, receiving, and shipping rooms are required adjoin this public space.

PERSONAL SERVICES

Barbers. Public space includes reception area, cashier and check rack, in addition to five to ten barber chairs and one to five manicure tables. Barbers' sinks and other equipment are built into walls. Chair bootblack service is sometimes expanded into a separate shoe-shine and hat-cleaning department.

Beauticians. Women customers demand more privacy than men, so clients' reception room, with control desk and cashier, acts as ante-room for six to eight service booths in smaller establishments—eight to twelve booths in larger ones.

Tailors. Clothing fabrics form the display background for the public space. One or more fitting rooms adjoin. A call desk can be used for routine repair jobs. The work room with its equipment can well be on view from both reception space and street. Elimination of pick-up and delivery costs might make the "drive-in" field attractive for this type of service store.

Shoe repair. In perhaps no other service store is human activity so important for display. One large room contains reception space and waiting booths, together with uniformed cobblers, stitchers, hat-cleaners, and bootblacks with their machines and equipment. An interesting drive-in chain on the west coast has eliminated the need of waiting booths—the customers stay in their cars.

Reading service. The rental library is one of our most popular service stores. Although book and stationery sales, etc., are usually featured, loan of books is the most popular department and carries the store. Best examples treat entire store as an open and colorful display.

HOUSEHOLD SERVICES

Clock and watch repair. The public is always interested in skilled workmanship, and will be drawn to a view of this tradesman's activities. Displays of clocks and watches for sale, together with customers' sales counters will complete an interesting sales room.

Leather goods repair. Display of leather goods adds richness and color to this work shop; the craftsman's activity provides human interest. Call space, displays and work room are readily combined in a single unit.

Upholstery and furniture repair. Fabrics of all sorts, upholstered furniture, and drapes, combined with the view of a neat work-room, give excellent show room opportunities in this class of store.

Radio and electric appliance repair. Machine-age gadgets need attention now and then. This activity can be combined with their display and sale. Again, a view of the workman at his task draws the crowd.

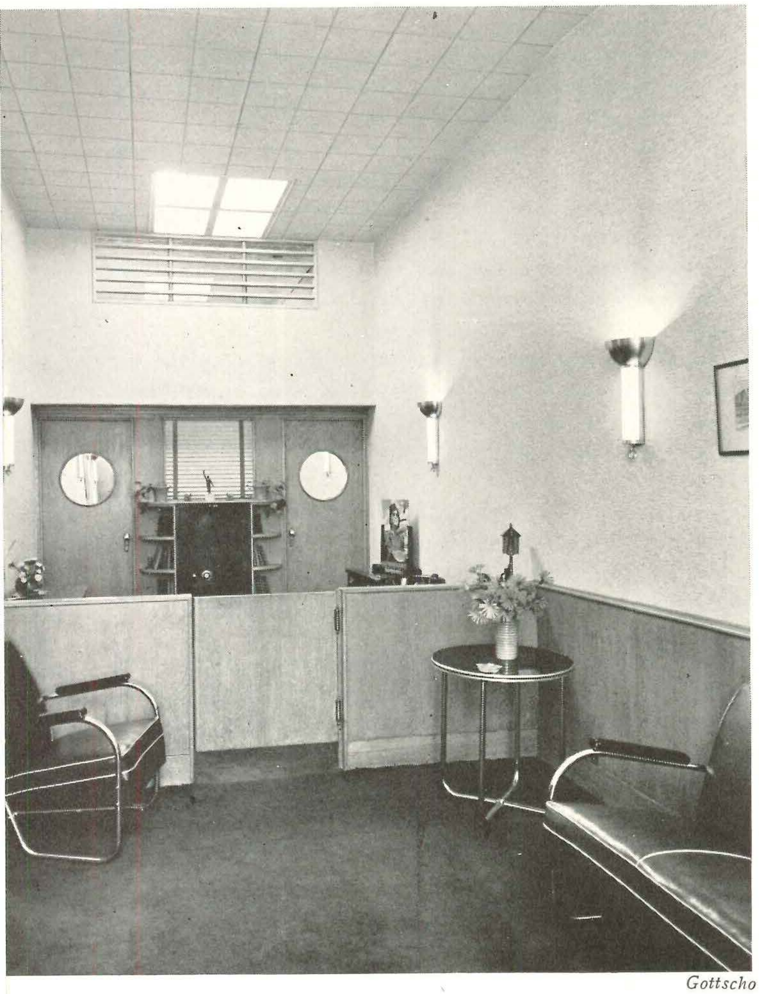
Floral service. See *Florists*, elsewhere in this issue.

AUTO TRANSPORTATION SERVICE

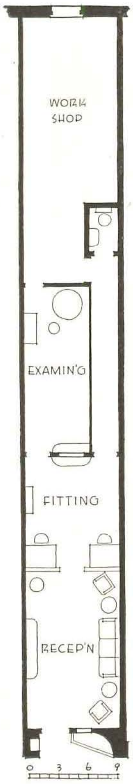
Auto sales and service, and parking garages are treated more fully elsewhere in this study.

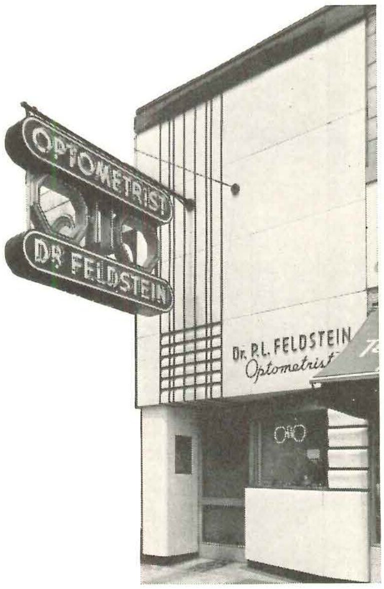
4

WHETHER CUSTOMERS ARE PEDESTRIANS................

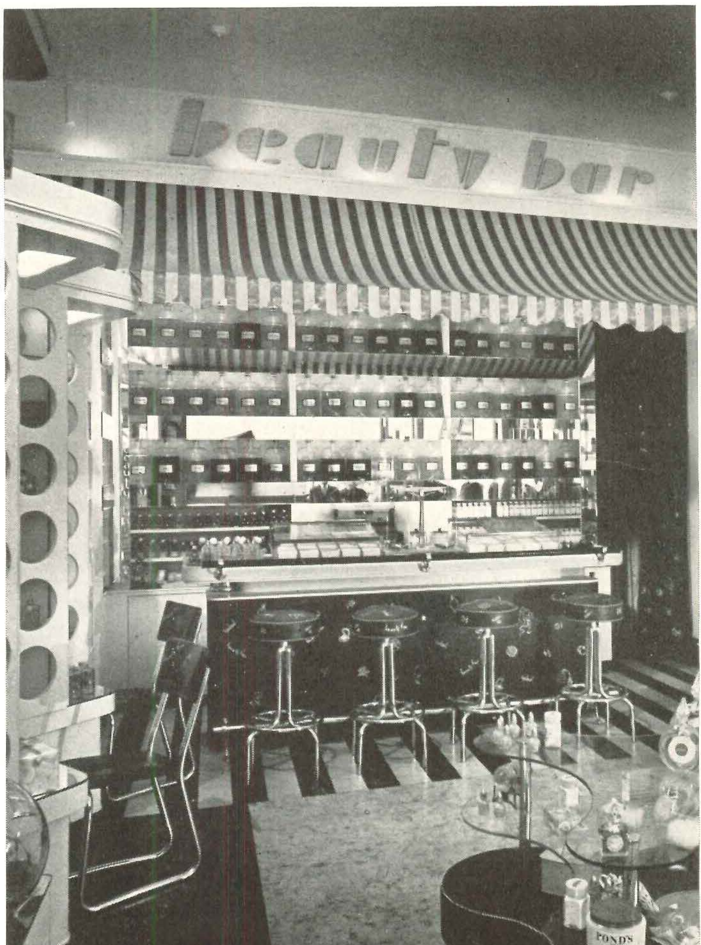


Gottscho

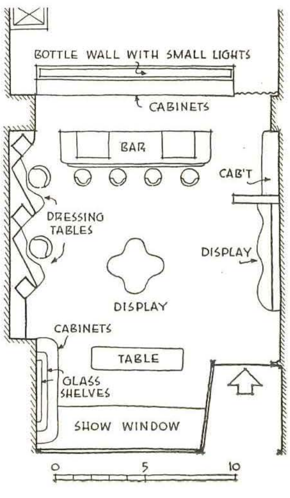




OPTOMETRIST'S SHOP FOR DR. FELDSTEIN, JAMAICA, N. Y.; NATHAN R. GINSBURG, ARCHITECT. Located on a busy retail shopping thoroughfare, this shop's small window and comfortable interior have proved the financial value of displaying technical products and professional practice.

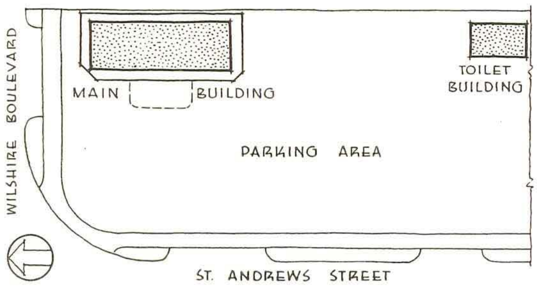


GOUBAUD BEAUTY BAR, NEW YORK CITY; KARPLUS AND SPELMAN, DESIGNERS. Here too, though customers are pedestrians, emphasis is placed on technicians at work. The shop sells cosmetics and perfumes compounded to individual prescriptions; interior display centers on rows of bottles of colored liquids, highly illuminated. Customers sit at the bar while liquids are mixed to order. At left, dressing tables where customers participate in the process by trying out prescriptions—a further refinement not always available in other types of service establishments.



................OR MOTORISTS

Miles Berné

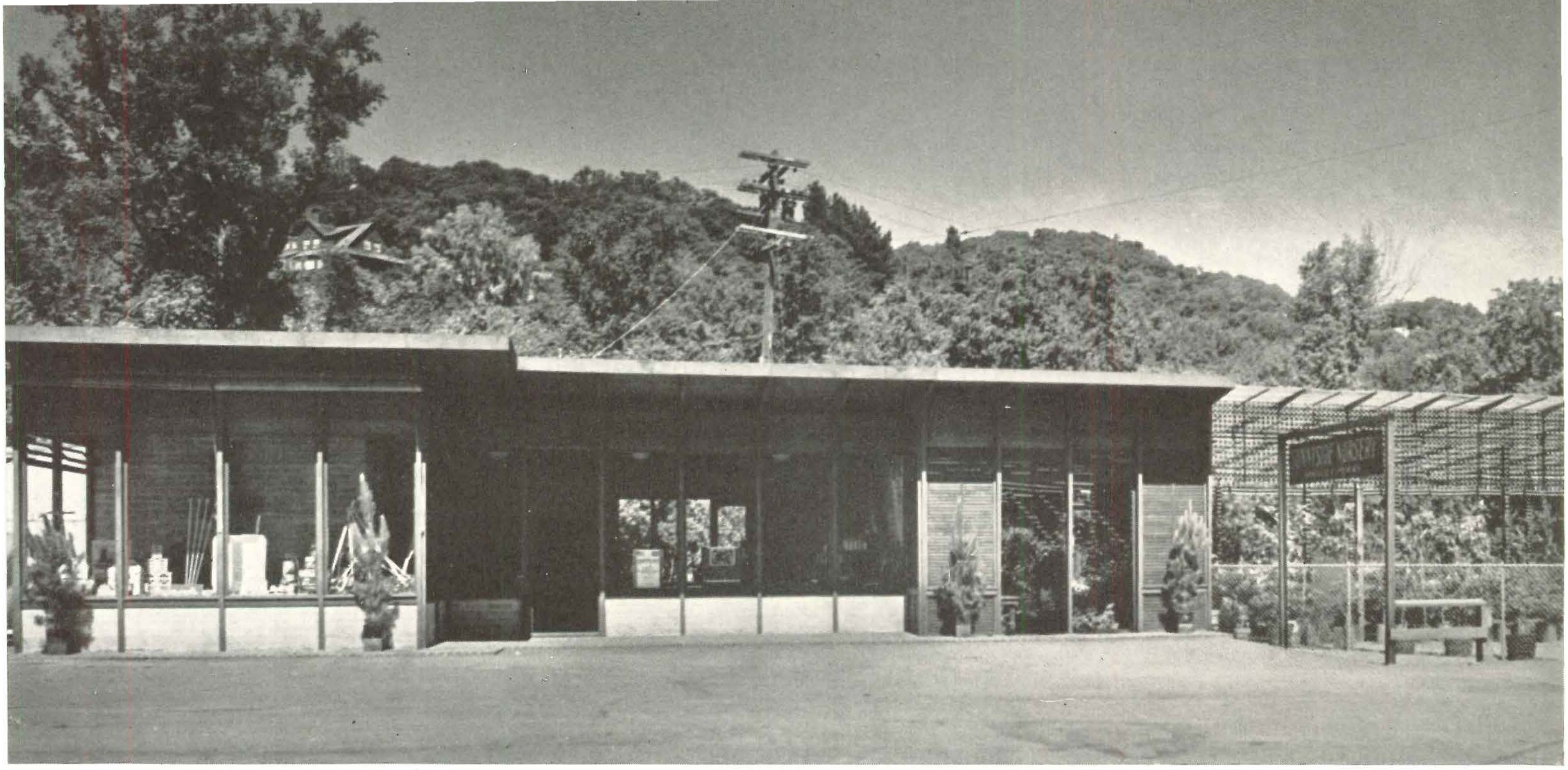


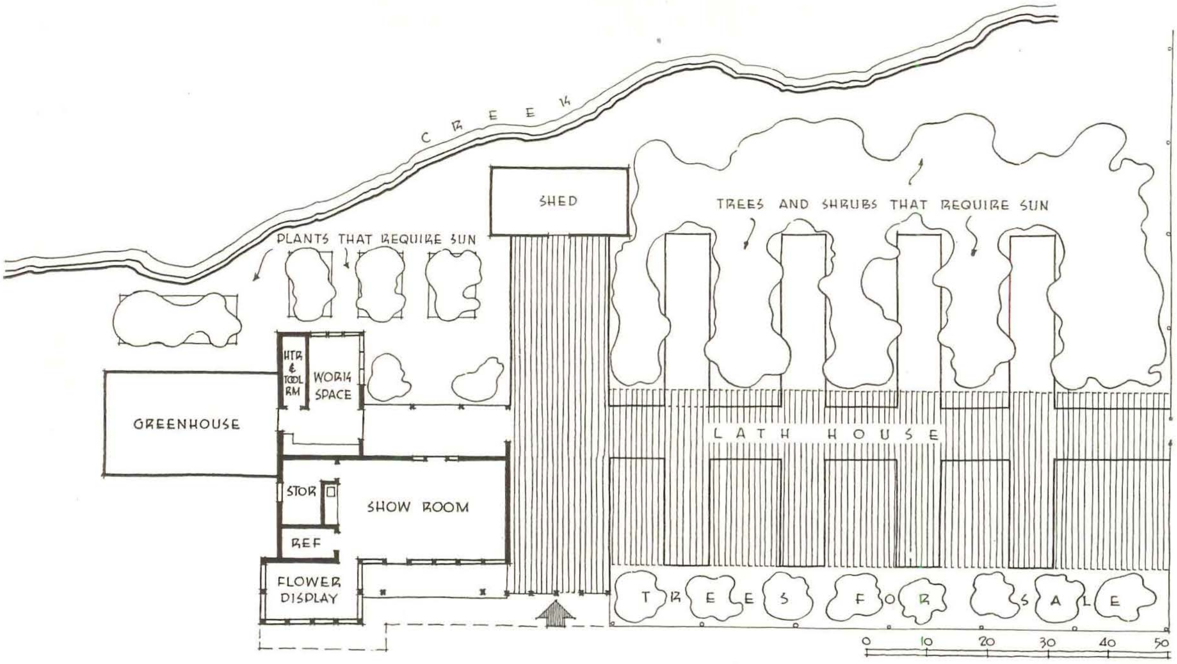
PLOT PLAN

ZINKE'S DRIVE-IN SHOE REPAIR, LOS ANGELES, CALIF.; HAROLD O. SEXSMITH, ARCHITECT. But here the customer drives up, his shoes are taken inside, and he can see the whole process of repairing while he waits in his car. All four walls are glass; storage space is above the windows. A few chairs are provided for customers who prefer to wait inside. This type of shop has similar plot plan requirements to those of drive-in laundries, illustrated in other portions of this study.

Garrison

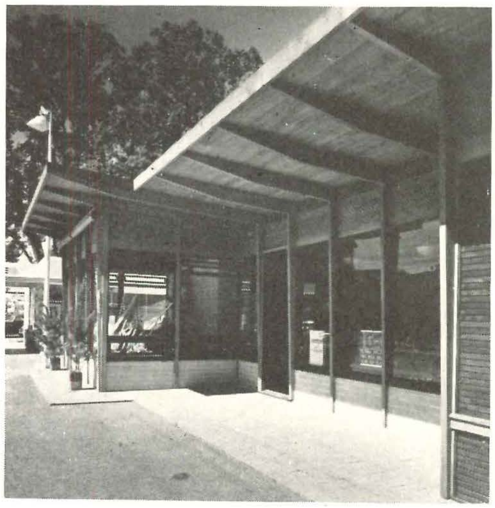
............SHOW THEM THE CRAFTSMAN AT WORK—IT'S GOOD ADVERTISING



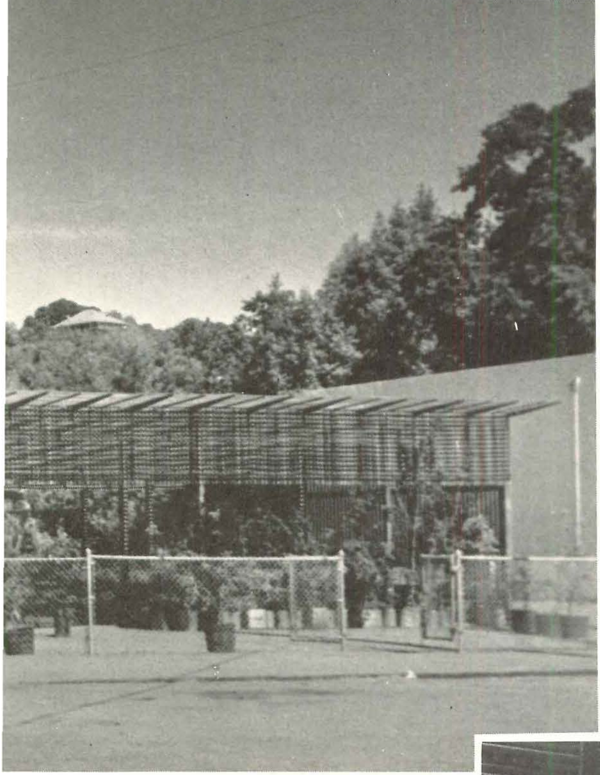


SUNNYSIDE NURSERY, SAN ANSELMO, CALIF.; HERTZKA & KNOWLES, ARCHITECTS. The problem here was to design a simple, inexpensive structure which the owner could build with day labor. The building proper was limited in size and restricted to masonry construction by local codes. Site is on east side of main highway, close to the center of town, between a gas station and a drive-in market. There is very little foot traffic. In the rear is a small creek, heavily wooded, from which the nursery pumps its own water.

Requirements included a main show room, principally for winter use and central control; a cut flower display section which in summer houses garden tool displays; walk-in refrigerator; work space for potting; room for hot house heater and tools; generous storage space. Lath house was placed on south side of show room; its construction assures dispersion of sunlight to protect plants from summer sun; in winter this problem does not exist.



DETAIL of construction



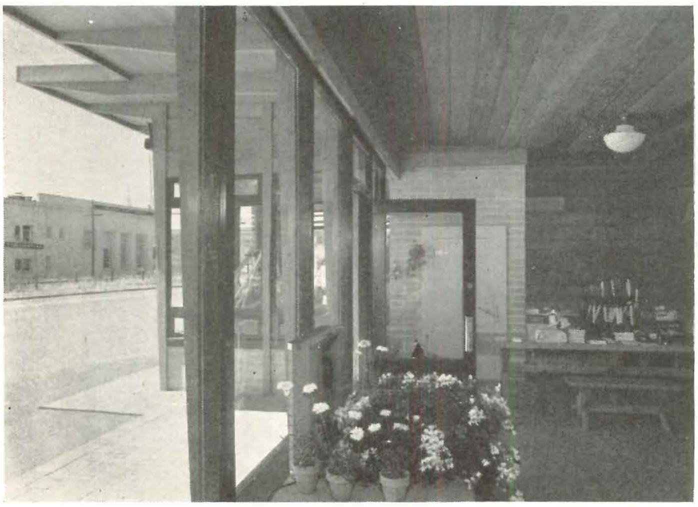
THE FLORIST-NURSERYMAN DISPLAYS HIS GARDENS

A FLOWER SHOP is always a display room, whether indoors or outdoors. The designer's problem is to create suitable backgrounds, and to solve selling space and refrigerator equipment problems. He must provide work rooms, receiving and shipping areas, and storage spaces.

The city florist makes the refrigerator for cut flowers an important element. Flower novelties—miniature gardens, plant racks, flower pots, etc., are side lines. The nurseryman-florist is able to combine display area with outdoor nurseries and greenhouses. Drive-in parking space helps to attract customers, to make shopping easier.

Sales are chiefly of growing plants, so most are made outdoors in lath house or from open beds—even the cash register is outdoors. For flexibility, the indoor sales space contains no built-in racks or counters. Windows are unsuitable for plants or flowers in summer, so garden implements, sales of which are then at peak, are displayed. Plot plan allows plenty of room for parking between building and highway. Construction, of fir stained deep reddish brown, glass, and warm gray lightweight cement blocks, is so distinctive that only a small sign is necessary—the structure is its own advertisement. The building was laid out to a 4-ft. module to simplify roof construction—a ⅝-in. plywood diaphragm laid in 4-by-8-ft. panels, topped with composition

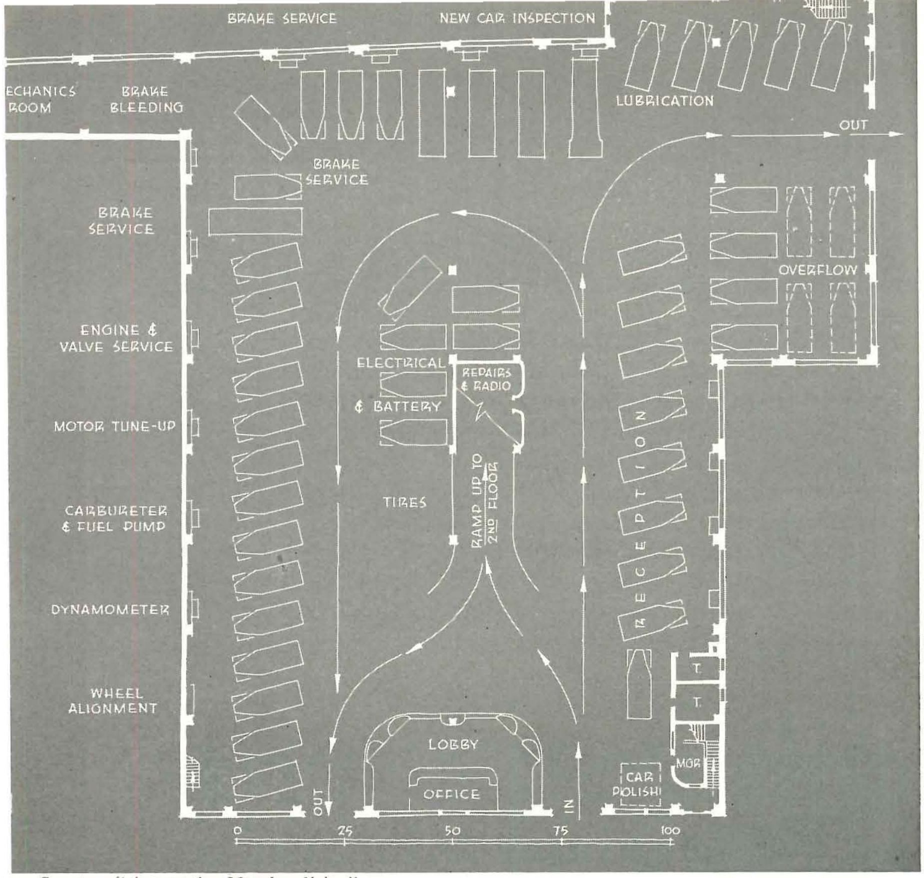
LATH HOUSE integrates indoor and outdoor sales space; circulation is direct and simple



INTERIOR of show room

Photos by Roger Sturtevant

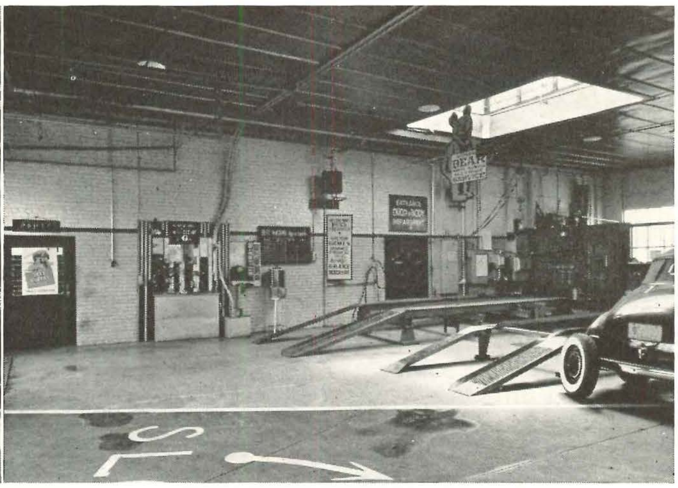
GARDEN: Left, lath house; center, main building; right, hot house



Courtesy *"Automotive Merchandising"*

NEW AUTO

REPAIR GARAGE, DAVIS-BUICK CO., PHILADELPHIA, PA., was laid out to eliminate bottlenecks, to facilitate customers' entrance and exit, to route cars directly to proper departments and simplify all service operations. Heavy repairs, body work and painting are done on the second floor. Each department has complete equipment for its own type of work, plus a moderate supply of necessary parts. This decreases time lost by mechanics.



Photos by Gottscho

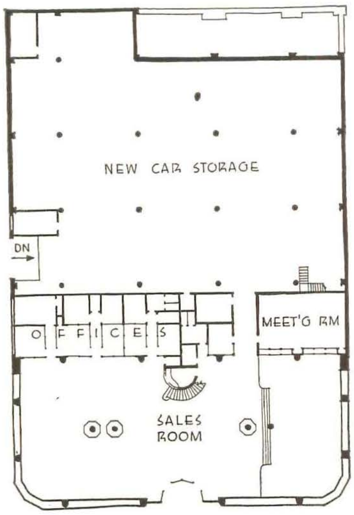
RUPP CHEVROLET SALES AND SERVICE, LYNBROOK, N. Y., one of the most successful of its type in the East, has departments easily recognized in top photo: parts and repairs at left; lubrication, gas and similar services in center, new car sales at right. Used car area is out of picture at right.

SALES INCREASE EMPHASIS ON REPAIR SERVICE

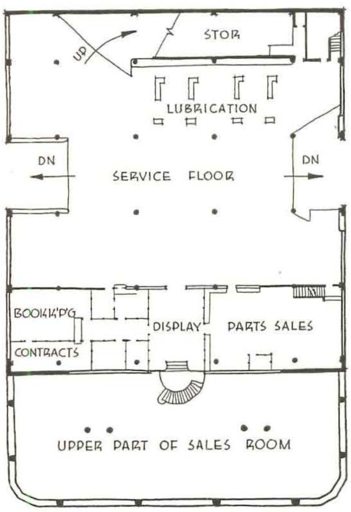
Auto sales-and-service garages—inherently drive-in establishments—have in recent years become primarily service and repair businesses. This change from the former emphasis on new car sales was due principally to competition, which drastically reduced profits on new cars. Service departments have to carry from 80 to over 100 per cent of the overhead—that is, show an independent profit. Hence this phase has to be well advertised and efficiently laid out.

First essential is location on a main thoroughfare, on a corner if possible. Next is attractive and efficient coordination of indoor and outdoor elements. Ample parking space, with easy drive-in access and gas-and-oil sales space, leads into departmentalized repair, washing and lubrication areas. New car display room, preferably glass-walled, is best located adjacent to both service waiting space and parking area, should cover on an average not more than 20 per cent of available land, and should be visible from street.

In the repair shop, each type of repair should be performed in its own area or booth: lubrication; motor-analysis; brake, wheel and axle repair, etc. A glazed wall between waiting space and shop permits customers to watch repair activity without getting in the way. Heavy repairs, painting, etc., may be performed on an upper floor; but one-story structures are preferred.

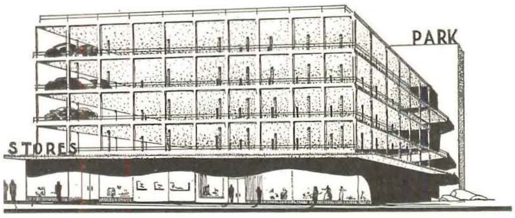


FIRST FLOOR



MEZZANINE

INGOLD CHEVROLET SALES AND SERVICE, SAN FRANCISCO, CALIF.; JOHN EKIN DINWIDDIE, ARCHITECT. This project has a downtown, sloping site, so service department is entered from upper level on side street, lower floor gains display space on a main street. Third floor houses heavy repairs, etc. Customer space on second floor has window overlooking new car salesroom. Construction is concrete, with widely spaced columns to allow easy manoeuvering.

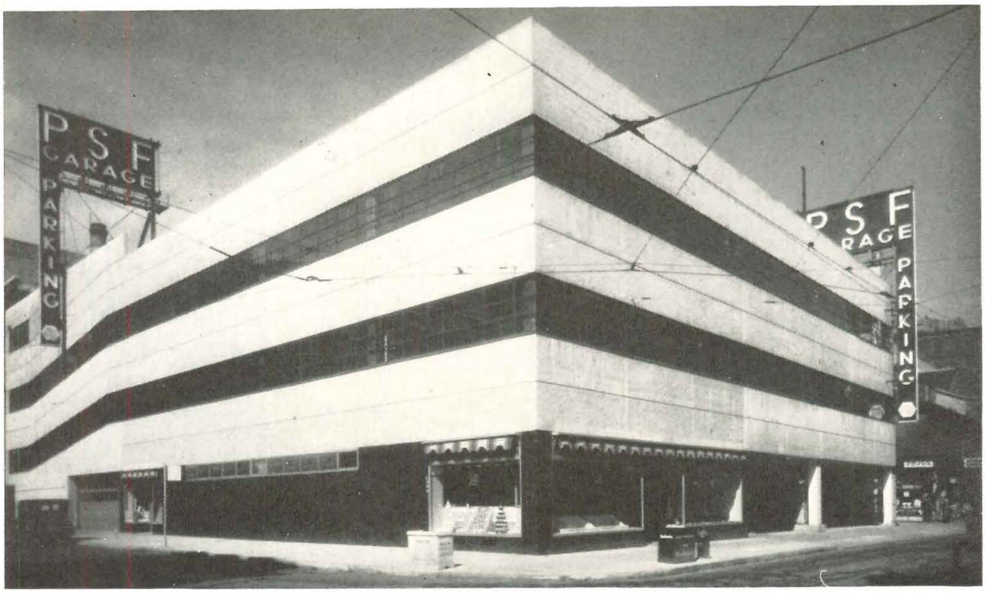


PARKING GARAGES

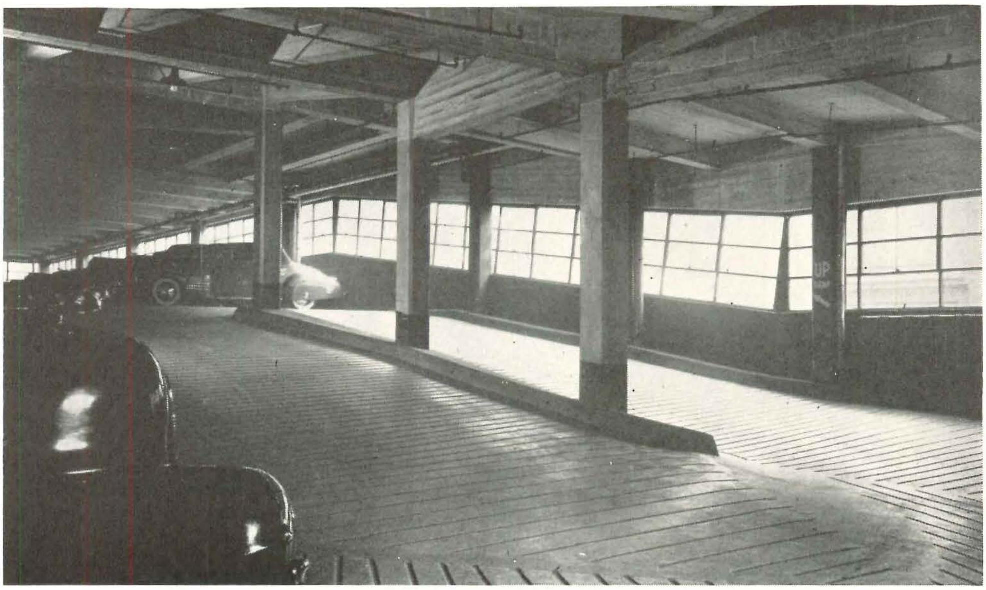
BIG-CITY SHOPPING DISTRICTS have heart trouble: more and more city inhabitants move to suburbs and become unwilling to patronize central shops or theatres without adequate parking facilities. Parking lots are at best temporary palliatives; parking garages have been hampered by excessive construction and land costs. Generally speaking, on a building cost of $200-per-car-space, a parking garage can make money. On $400 to $1,000—the usual range—it cannot.

This leads to consideration of the wall-less building—a series of parking levels supported by columns, reached by ramps, without forced ventilating, heating or sprinkler systems, and with illumination cost minimized. Structure has to be "fire-proof," which necessitates reinforced concrete or concrete-and-steel. Buildings should probably be small (100-300 car capacity), and located several blocks apart so customers will not have to walk more than 500 ft. to destinations.

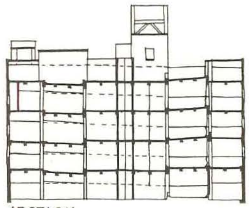
Studies indicate that speed of operation, elimination of elevators and intercom-comunicating signal systems, and design for few attendants, are required to keep operating costs low. This entails design of ramps to enable customers to park their own cars. It is considered advisable to limit buildings to five stories, and land coverage to 15,000 sq. ft. For additional revenue, street level can be designed for retail shops.

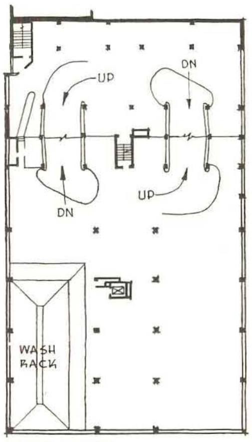


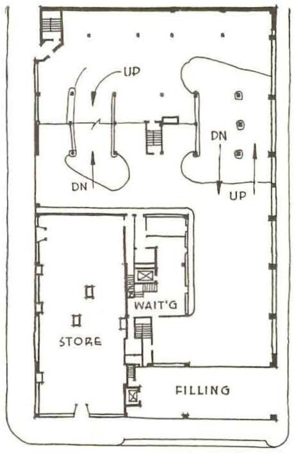
Dooner



Stoller

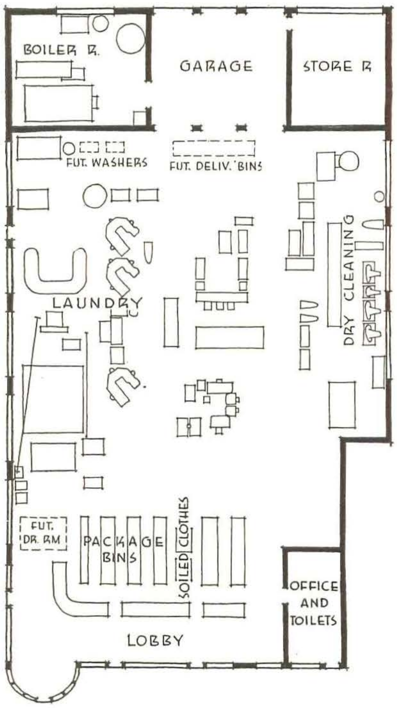


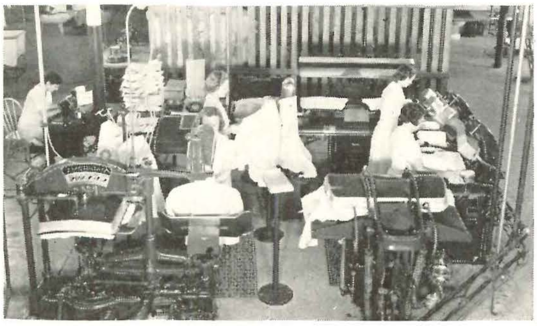




PSF PARKING GARAGE, PHILADELPHIA, PA.; HOWE and LESCAZE, ARCHITECTS. This garage, with shops on the first floor, almost achieves the "open" construction suggested above.

DRIVE-IN LAUNDRIES





Photos courtesy "Starchroom Journal"

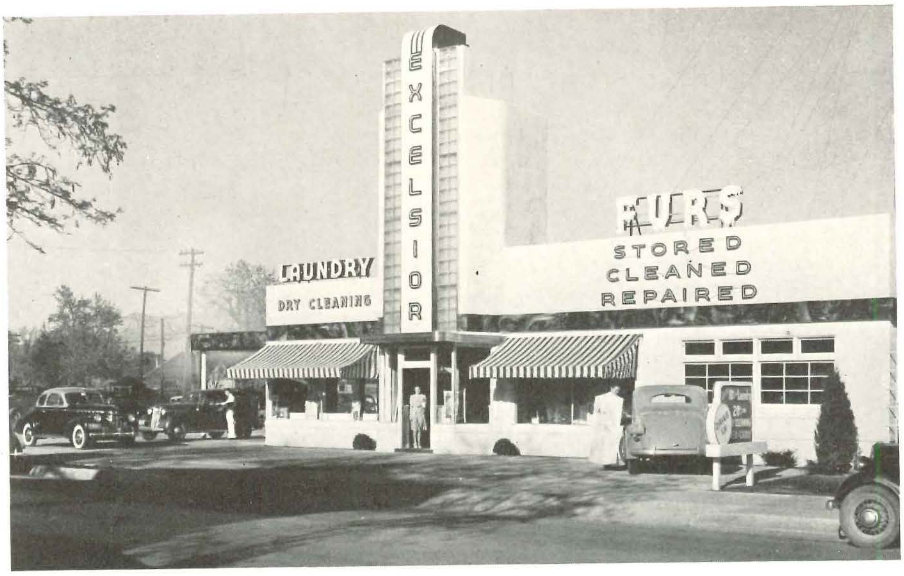
MONARCH LAUNDRY, DALLAS, TEXAS; W. RALPH MERRILL, AIA, ARCHITECT

During the last few years, laundries have evolved from modest, side-street factories to retail stores on main boulevards.

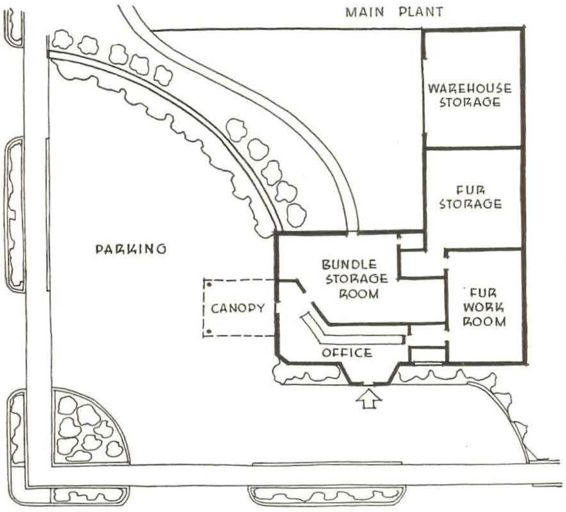
The fundamental appeal has been economic. Driver pick-up and delivery accounted for approximately a quarter of gross operating costs. If that could be reduced, the customer could have his laundry done more cheaply. Customers—nearly all of them—possessed automobiles, so why couldn't they transport their laundry themselves? It was tried, and it worked. Over-counter pick-up and delivery costs about 7 per cent of total operating expenses. Most of the difference is passed on to the customer.

Extensions of the drive-in scheme to include a chain of pick-up stations for a central plant have rarely been profitable. For one thing, delivery expense mounts to the point of diminishing returns. For another, most women seem to prefer to deal with a laundry's head office.

Monarch plant, illustrated above, has an ideal location between two suburban communities, near a drive-in shopping center. Noteworthy is the fact that plant expansion has been allowed for internally, so that additional building will not be needed for some time.



EXCELSIOR LAUNDRY, ALBUQUERQUE, NEW MEXICO; LOUIS G. HESSELDEN, ARCHITECT. This existing plant was practically forced to build drive-in facilities. Because it is convenient to Albuquerque's main thoroughfare, its over-counter business increased in a few years until it completely upset office routine. In addition, the plant's fur business outgrew its quarters. So a new bundle room, call office, and space for fur business, properly integrated with the main plant, were built on an adjacent, heavily travelled corner.



Photos courtesy "Starchroom Journal"

ALL SORTS OF DEVICES are used to speed up bundle deliveries to cars, and to make patrons comfortable. Some of these, such as placing call-boys on roller skates, are of slight concern to the architect. Others affect his work directly. These latter include provision of car annunciators activated by photo-electric cells, proper routing of bundle traffic to avoid congestion, and the like. Sometimes two doors are placed between call office and parking space, one for exit, one for entrance. Loudspeakers are sometimes placed at the curb so call-boys can announce the customer's name, dash in, pick up laundry and deliver it almost before the customer has had a chance to shift gears. And gravelled driveways are not considered desirable because they are uncomfortable for women in modern shoes.

Most laundries of any size have dry cleaning departments. Likewise, many dry cleaners are doing specialized laundry—shirts at three for nineteen cents, etc. From this tendency, some laundry specialists deduce that the two industries may consolidate.

DRIVE-IN LAUNDRY DESIGN

Information on this sheet was prepared by Ronald Allwork from data obtained from Noel Grady, *The Starchroom Laundry Journal;* E. J. Vincent, *The Laundry Age;* and Morris Ketchum, Jr., Architect.

Location of laundry is preferably on a traffic artery connecting a middle-class residential area and business area. It should be situated on the border line between the two areas. A far-corner site on the city-bound side of the street is considered best, since it enables the motorist to pull in after passing through the intersection, and then swing back into traffic with minimum lost time.

The far-corner site also offers maximum display possibilities due to the fact that it can be seen from a greater distance. Center-of-block locations are also acceptable if they allow sufficient space to provide an adequate display.

Plot plan. A frontage of 60 ft., because it represents the turning diameter required for the average automobile, is minimum, but a longer frontage is desirable for display and for economical disposition of elements in plan. Lane for cars should be at least 10 ft. wide; three lanes are generally considered the practical minimum. Right-turn corner plans should be used only when city-bound traffic turns at that particular corner. Otherwise, entrance and exit should be on the same street, permitting cars to continue in the direction in which they were originally traveling.

The parking area should be aproached at a slight downgrade, even if this requires additional excavating, since an incline will eliminate the necessity for shifting gears—particularly distasteful to women drivers. Provision of an awning, marquise or canopy over part of the parking area for protection during bad weather should be considered. Building should cover not more than 2/3 of plot; allow at least 1/3 for parking.

Long, narrow buildings are not economical; a plan more nearly approaching the square is recommended.

Type of building most widely used is single story, but high cost of land sometimes makes multi-story buildings mandatory. A mezzanine may be used.

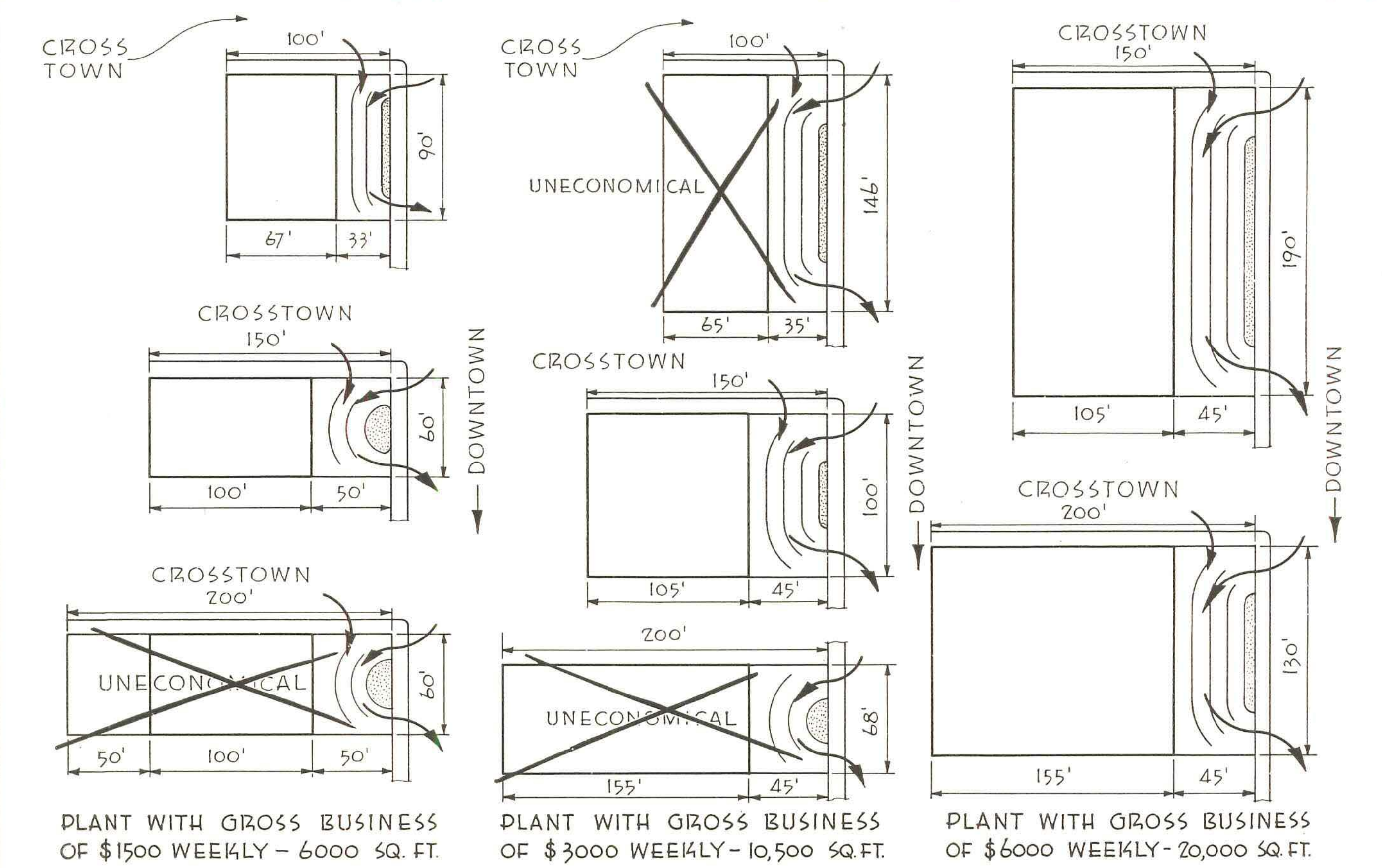
Construction of roof should include skylights, saw-tooth or monitor type lighting to provide maximum daylight and ventilation in working area. Walls are preferably of an attractive material which lends itself to easy maintenance or periodic painting at low cost. Interior walls should be glareless and of a material easily cleaned. The introduction of color on both the interior and exterior of the building is desirable.

Columns should be eliminated, or kept at a minimum number and spaced to allow an efficient layout of equipment.

Equipment layout. Since all laundry machinery manufacturers offer a planning service, the manufacturer preferred by the client should be consulted by the designer at start of preliminary sketches. The building should be planned to satisfy production requirements which are based (1) on actual volume immediately anticipated and (2) on possible future volume. Avoid any procedure which would make it necessary to adjust layout of equipment to space available.

Expansion of plant should be provided for in planning both plot and building. Owner should obtain option on adjacent land or buy sufficient property to make additions feasible. Building should be planned to permit enlargement of parking area as the plant grows.

Call office is the focal point of all operations. All finished work, both laundry and dry cleaning, should arrive at this point in the easiest and most direct manner. Facilities for disposition of soiled clothing which arrives at this point are also a consideration; it should be planned to permit soiled laundry to be removed from sight quickly, without congestion.



TYPICAL PLOT PLANS FOR DRIVE-IN LAUNDRIES

DRIVE-IN LAUNDRY DESIGN

Work area is for all laundering operations. Soiled clothing, entering at one end, proceeds directly to classifying and washing departments. From here the various pieces are conveyed to the several finishing sections. The more interesting operations (particularly shirt finishing) may be performed in the show window in view of customers and passers-by.

Bundle storage racks, as well as storage space for dry cleaned garments, are component parts of call office. Shelves or bins should be of unpainted wood approximately 18 x 18 x 24 in. deep. Shelf area or number of bins required varies. For rough estimates figure one-half bin for every dollar of business per week. Finished laundry is delivered to customers either over the counter or by means of runners who take it to the car.

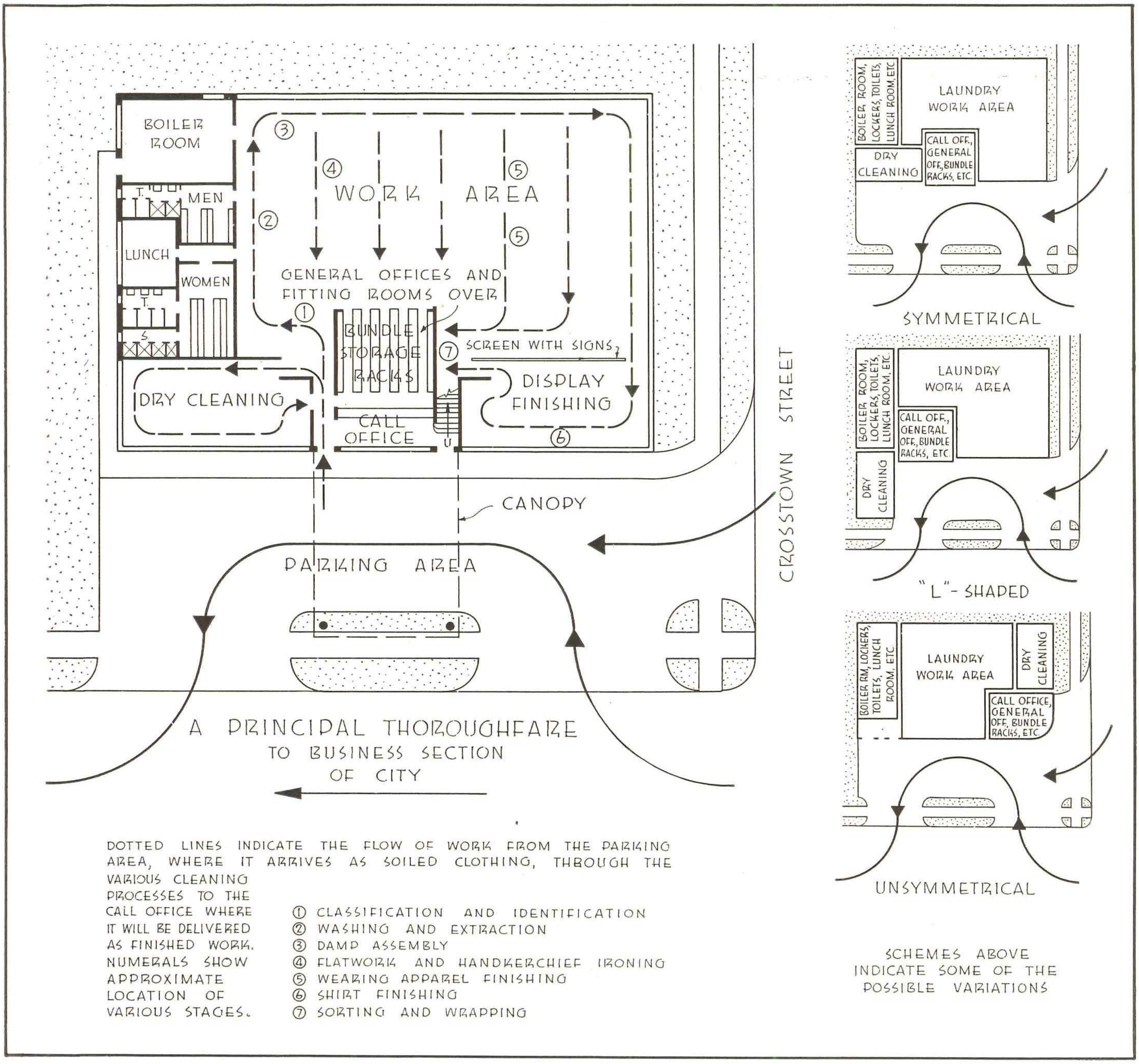
General office is often on first floor but may be on mezzanine (as indicated on plan) where it overlooks the work room.

Fitting rooms are provided for altering or trying on garments. In the plan illustrated they are intended to be included on the mezzanine, since they do not become an essential element in the successive stages of dry cleaning. However, fitting rooms should be easily accessible to call and general offices.

Dry cleaning may average 40 per cent of the plant's business. Incoming soiled garments should be routed directly to this section. Finishing operations of the dry cleaning processes are generally interesting to the public and may therefore be open to view.

Lunch room is intended for women workers only. It need not be connected directly with locker rooms or toilets but these should be within convenient reach.

Lockers for men are not usually as numerous as for women, since the proportion of men working directly in the plant is smaller.



SHOW WINDOW LIGHTING EQUIPMENT

Information on this sheet was prepared by Ronald Allwork from data furnished by Fred M. Wolff, Illuminating Engineer, and Morris Ketchum, Architect.

General. Selection of lighting equipment for any show window depends on (1) type of display, (2) size of window, (3) character of merchandise, and (4) location of store. Displays involving quantities of miscellaneous articles, such as occur in hardware, automobile accessory, or drug stores, require a general high intensity illumination. To accomplish this a strip light located above the window glass is usually sufficient. Wattage depends on type of merchandise and the competing illumination of the adjacent street area. In windows showing women's apparel and accessories, small strip lights may serve for general illumination with fresnel lens spotlights (of 50 watts) employed for highlighting. Miniature jewelry store windows generally require no more than three or four small 100-watt spotlights with possible addition of a fluorescent strip for background lighting. In all types of displays side and back lighting may be used to advantage.

Location of equipment varies; provision for flexible arrangements is desirable.

1. *At Top of Show Window* equipment is recessed in ceiling or supported on pipe parallel to glass across entire window a few inches below ceiling line by means of yokes and clamps.

2. *At Either Side of Show Window* equipment is fastened to vertical pipes. These are flanged to floor and ceiling as close to front window and side walls as possible—leaving space for unit clamps.

3. *At Floor in Front of Show Window,* a footlight trough may be large enough to conceal a striplight, small spotlights. Equipment thus installed is useful for dramatic accent or general lighting.

4. *Behind background,* lighting is often achieved by equipment mounted on stands or vertical pipes.

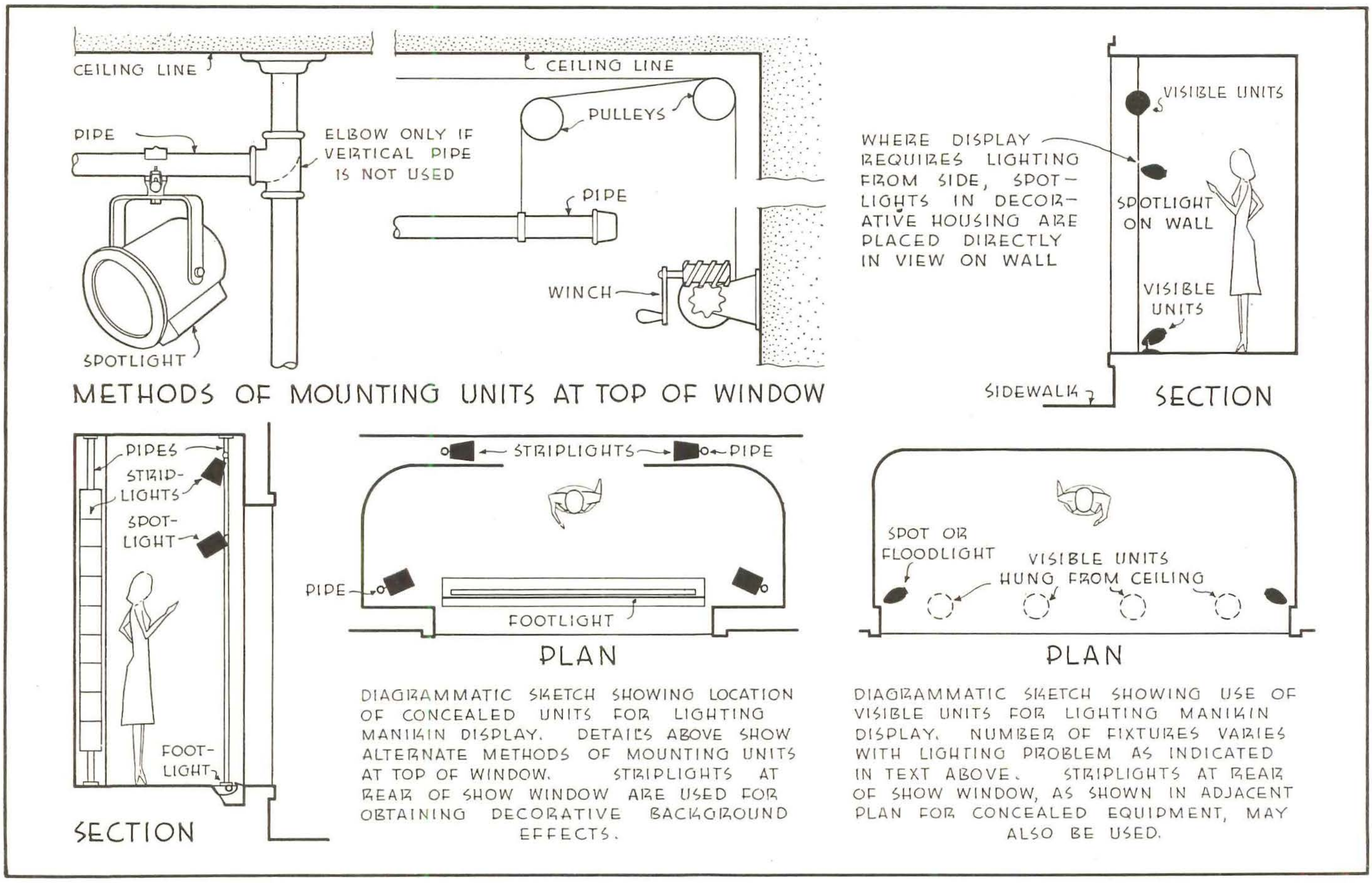
5. *Visible fixtures* of decorative design are suspended from ceiling or mounted on floor. Types are available for both spot and floodlighting, permit units to be placed in ideal positions.

Structural requirements. Lighting units should be masked unless decorative. Where design of show window does not provide for this concealment, horizontal valances and vertical screens may be used but are not preferred. Where it is desired to avoid use of valances, equipment may be recessed in ceiling with flush lens equipment or louvres, etc., to conceal the lamps. Where troughs are provided for footlights, equipment must be checked carefully for size so that both trough and covers are sufficiently large to completely conceal lights. Use of visible, decorative fixtures obviates need for masking and frees entire window area for display.

Outlets, wiring and control. Except where permanently built-in equipment is used, units should not be wired in solidly. Convenience outlets of at least 10 amp.-125 V. capacity, or 15 amp.-250 V. stage connectors, are recommended. Local regulations sometimes require armorclad leads from lighting units with 3-pole grounded connectors. If outlets are in ceiling, twistlock connectors should be used.

Number of outlets and capacities are determined by equipment selected. Always provide capacity for future expansion, new equipment, and possible increases in wattage. Each window or group of windows should have a distribution panel with a switch for each individual circuit.

Dimmers may be used, but are not generally recommended. Good practice is to employ a system of switches, which permits each circuit to be connected to either a "day" or a "night" feeder. Energizing either feeder from a master switch, manually or by time clock and relay, sets up lighting as required.



DIAGRAMMATIC SKETCH SHOWING LOCATION OF CONCEALED UNITS FOR LIGHTING MANIKIN DISPLAY. DETAILS ABOVE SHOW ALTERNATE METHODS OF MOUNTING UNITS AT TOP OF WINDOW. STRIPLIGHTS AT REAR OF SHOW WINDOW ARE USED FOR OBTAINING DECORATIVE BACKGROUND EFFECTS.

DIAGRAMMATIC SKETCH SHOWING USE OF VISIBLE UNITS FOR LIGHTING MANIKIN DISPLAY. NUMBER OF FIXTURES VARIES WITH LIGHTING PROBLEM AS INDICATED IN TEXT ABOVE. STRIPLIGHTS AT REAR OF SHOW WINDOW, AS SHOWN IN ADJACENT PLAN FOR CONCEALED EQUIPMENT, MAY ALSO BE USED.

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
JULY 1941

SHOW WINDOW LIGHTING EQUIPMENT

1. Incandescent Striplight: Used above window glass for general illumination and behind screens for background lighting. Individual reflectors, 60-150 watt lamps. May have color roundels. Wired in one or more circuits.

2. Fluorescent Striplight: Used above window, in footlight trough for general lighting or for backgrounds. Generally built in open strips 2 ft. or more in length with 1 to 4 rows of lamps.

3. Fresnel Lens Spotlight: Used for dramatic soft edged accent lighting. Available from 75 to 1,000 watts. Most useful size for average display windows is 500 watts, with 6 in. diameter lens.

4. Ellipsoidal Reflector Spotlight: Used for dramatic displays, especially of arbitrary or unrealistic design. Projects an even, sharp-edged, high intensity beam of light. 500-watt size with medium spread lenses most frequently used, other sizes to 2,000 watts.

5. Open Floodlight: Used for either accenting small areas or general flooding. Cannot be focused. Glass or gelatine color available. Lamps up to 400 watts.

6. Reflector lamps: Used as accenting lights. Combine a concentrated filament and reflector in one bulb. Wide spread or concentrating type. Generally 150 watt or 300 watt sizes.

7. Concentrating Projector Floodlight: The only incandescent lighting equipment capable of producing dramatic highlights, in competition with sunlight. Beam cannot be matted or shaped. 500-1,500 watts.

8. Fresnel Lens Spotlight in Decorative Housing: Used to advantage where a visible source of light is required.

9. Decorative housing for Reflector lamp: Used where there is no space for concealing equipment.

10. Color Changing Device: Used for special effects, such as constantly changing colored shadows.

11. Open Type Metal or Silvered Glass Reflectors: Used only for general lighting from overhead. Available in a variety of distributions for deep or shallow windows and in sizes up to 500 watts. For built-in wireway or ceiling recess.

12. Recessed Striplight: Recommended only for permanent types of displays. Control of distribution obtained by reflectors and louvres or lenses.

13. Semi Recessed Eye-ball: Types available for spot or floodlighting. Combines the advantages of finished appearance with flexibility of direction and color control. The hemisphere swivels about so that light may be directed as desired. Either reflector lamp receptacles or fresnel lens spotlights are included.