PROGRESSIVE
ARCHITECTURE
[PENCIL POINTS]

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ARCHITECTURE AND POLITICS

The question as to how much political activity is proper for a conscientious architect interested in improving his town may be raised by the article in this issue on The Architect And His Community. It is an obvious fact that any plans for the betterment of a community must involve politics. *Planning* politics aren't *party* politics; the line-up of "liberals" behind the housing and planning bill sponsored by Republican Senator Taft should prove that. While there are architects who are Republicans and architects who are Democrats and architects who would welcome a third party, all designers and planners ought to be politically active in the interest of better physical surroundings.

Next year will be an important one politically. There is a primary responsibility on each architect, as a citizen, to register, and then to vote, no matter what his "political" opinions may be. But there is the important secondary duty to *study*, objectively, from the point of view of a technical adviser to the public, all issues that affect planning.

If architects really became actively interested in the politics of planning, it would split the profession wide open. We believe that this would be all to the good, if it resulted in a real discussion of the issues and an understanding of the politics of planning. It isn't enough to be anti-things. You can't just be *against* "government in housing," or "government controls," for instance. No one would be radical enough to urge the end of F.H.A. or H.O.L.C.; the squawk from builders, realtors, and mortgagors would be terrific. And certainly it wouldn't be good advice to urge that this government investment be left with no strings attached. It's a question of what government in what housing, for whose benefit. We urge that all of you avoid automatic, prejudiced political reactions as earnestly as you would avoid stereotyped, unthinking building design. In each case you have a responsibility greater than that of the untrained citizen.

The Editors

Pittsburgh Plate Glass Company announces—

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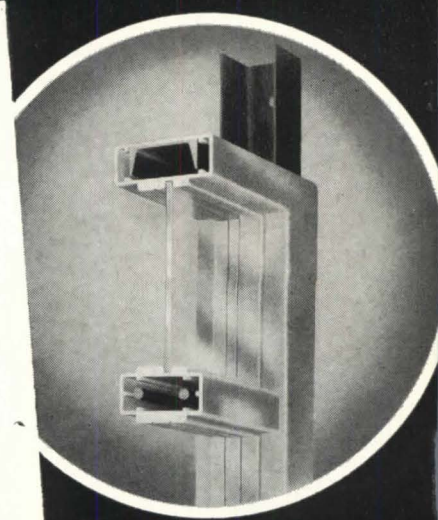
Available in twelve standard styles, this new door-frame assembly will satisfy almost every requirement. Constructed to accommodate standard Herculite Tempered Plate Glass doors, it is supplied complete with checking floor hinges and top pivots, ready to bolt into the rough building opening. All clearances on the frame and doors are controlled by accurate factory gauges. This adds up to the greatest simplicity of installation: When the building is ready to receive the doors, they are simply set on the hinge pivot, the top pivot is dropped into the top channel, and the entire structure is complete. It's as easy as that.

We urge you to mail the coupon for complete information about this revolutionary prefabricated door-frame assembly. Do it today.



Beauty, ruggedness and ease of installation create a unit of great appeal. The frame is made of extra-heavy extruded aluminum — highly polished and anodized. It is heavily reinforced with steel channels and tie rods, as partially shown here.

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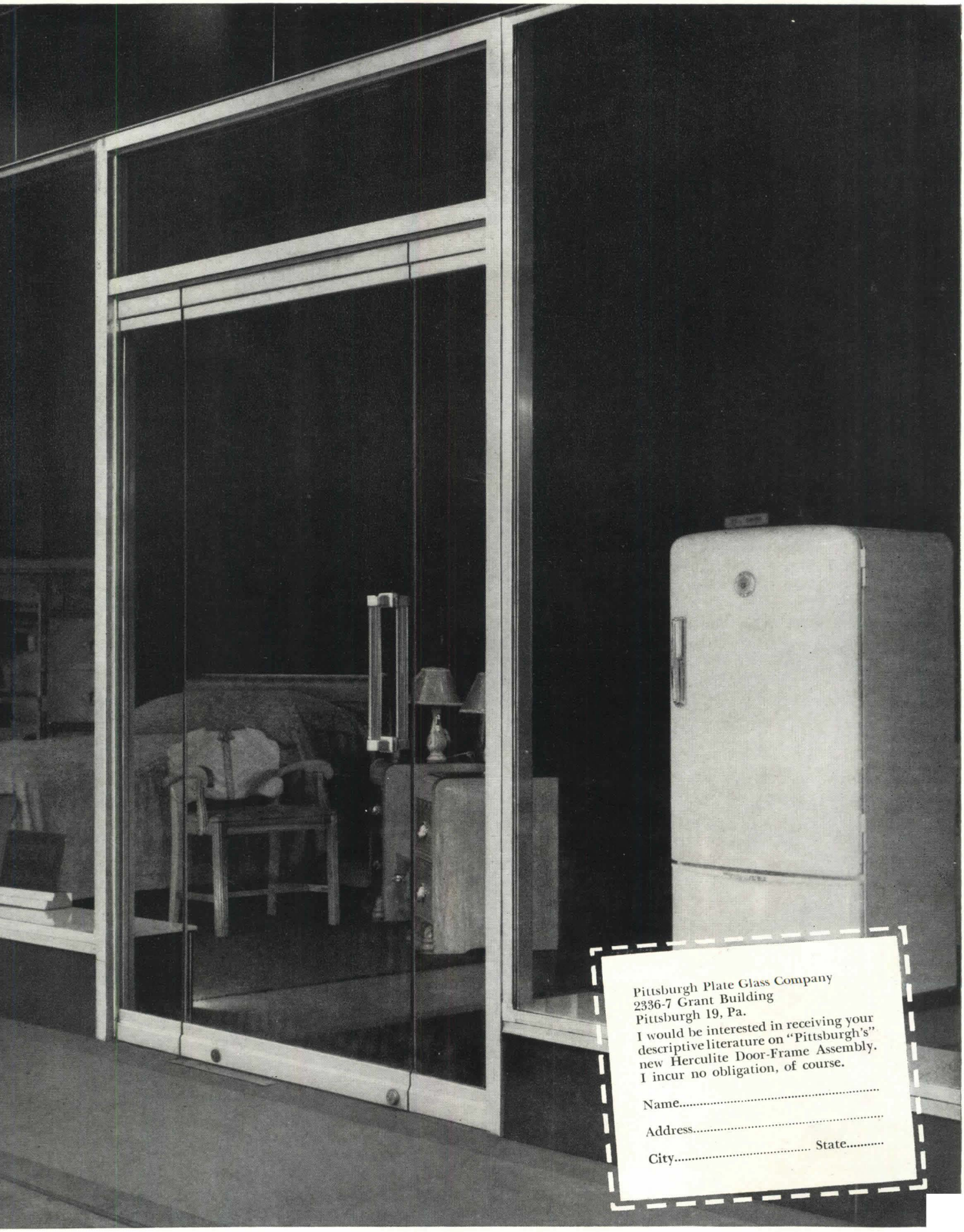

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FLOORING

EFFECTS OF BURLAP AND FELT BACKING ON LINOLEUM SPECIFICATIONS

During the past few years, manufacturing improvements and material shortages have brought about many changes in the backing materials used as a base for linoleum and other roll-type resilient flooring. (The resilient tile floor materials, such as asphalt, rubber, cork, and Linotile®, do not require backing materials.)

Various backings have been developed to meet specific installation requirements. However, most of them have overlapping qualities which sometimes are confusing to the architect. The following information explains the reasons for these backings and also should be helpful to the architect when he is preparing linoleum specifications.

BURLAP

Burlap was the first backing material used in the manufacture of linoleum. It came into use in the middle of the 19th century as a base for a painted floor covering, the forerunner of linoleum. As a backing material, the mesh of the burlap provides a mechanical bond or key for the linoleum mix. Burlap has proved so successful that it is still the standard backing for *heavy gauge* linoleum.

Burlap, however, is not a completely satisfactory backing for the lighter gauges of linoleum which are often specified for residential use. Frequently, the texture of the burlap mesh becomes visible on the surface of the linoleum after installation. While this does not materially harm the flooring, it mars its appearance. To eliminate this condition, the Armstrong Research Laboratories have long experimented with other types of backings.

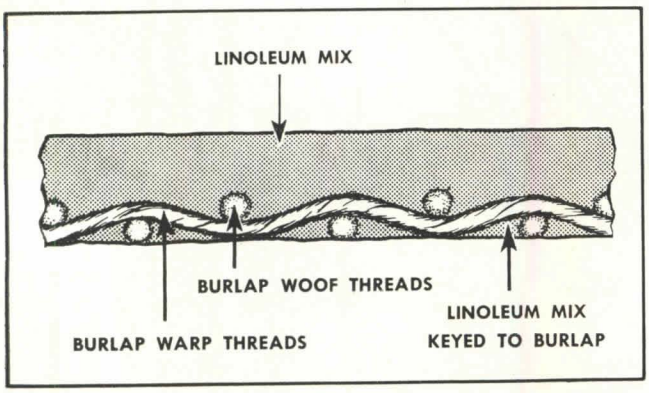
ASPHALT SATURATED FELT

It was found that a felt made from used rags and saturated with asphalt solved the face marking problem. Felt backing of this type also proved to be less expensive than burlap and helped make the lighter gauges of linoleum still more economical. Felt has been used as a backing since 1929.

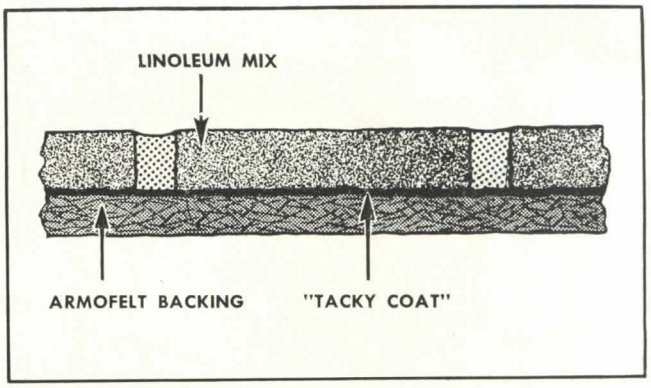
Lining felt is required to compensate for the seasonal contraction and expansion of wood floor boards when burlap-backed linoleum is installed. An advantage of felt-backed linoleum is that it does not require lining felt. Normal seasonal movement of floor boards has no effect on its surface. See table at right for recommended use of lining felt in installation.

ASPHALT SATURATED FRESH-FIBER FELT

Further experiments in perfecting backing materials conducted by Armstrong's Research Laboratories involved new cloth cuttings obtained direct from garment factories. Backing produced from this raw material is saturated with asphalt and is



This enlarged cross section of burlap-backed linoleum illustrates how some of the linoleum mix is pressed through the burlap. The result is a mechanical keying of the linoleum to the backing. Armstrong's heavy gauge Plain and Jaspé Linoleum is made on burlap.



The drawing above shows an enlarged section of Embossed Linoleum on Armofelt backing. A special bonding adhesive or "tacky coat" is applied to the felt before the linoleum mix is applied. Pressure and heat from calender rolls or hydraulic presses complete the keying process.

known as fresh-fiber felt. It meets the quality standards of burlap in tensile strength and flexibility. It is a tougher backing than that made from used rags and greatly reduces the likelihood of indentation.

SAFETY-BACK

This special backing feature was first developed to permit the cementing of the less expensive printed floor coverings, such as Armstrong's Quaker Floor Covering, to various subfloors. Safety-Back consists of layers of paint on the bottom side of the felt backing which strip or break away from the felt under tension. This feature not only permits easy removal of the floor covering but also, in many cases, eliminates the need of lining felt as protection against damage to the finished floor by board movement. The Safety-Back feature is used by Armstrong as a backing for all the thinner gauges of linoleum.

ARMOFELT

Another new type backing known as Armofelt® has been recently developed. It incorporates the most desirable features of fresh-fiber felt and Safety-Back into one all-purpose felt backing material. This backing is made of fresh-fiber felt saturated with a specially prepared clear, resinous solution instead of asphalt. This process gives it still greater toughness and flexibility. Armofelt also simplifies installation by making the linoleum easier to cut and trim. A clear saturant instead of asphalt is used in Armofelt, so this new backing will not mar even light colored baseboards during installation. Armofelt has a "built-in" safety-back feature which permits easy removal of the linoleum from any subfloor.

BACKINGS ON VARIOUS TYPES

The Armstrong Cork Company will continue to manufacture the heavy $\frac{1}{8}$" gauge of linoleum on burlap backing.

Standard and light gauge linoleum will be manufactured on Safety-Back asphalt saturated felt. All standard gauge Embossed Linoleum has the new Armofelt backing.

★ ★ ★

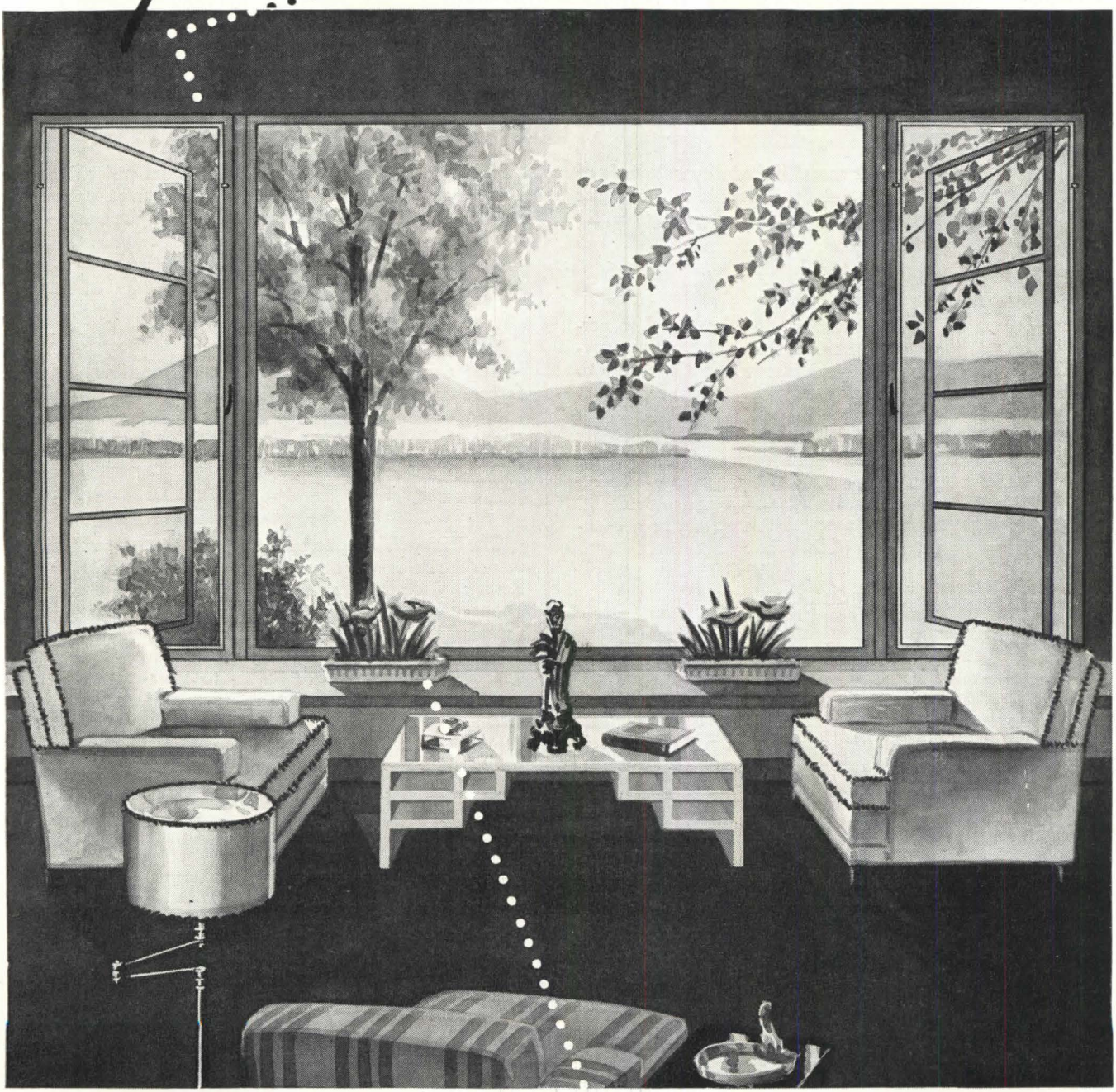
The research conducted on this phase of resilient floor manufacture is typical of that carried on by Armstrong Research Laboratories in the entire field of flooring. This knowledge, plus the experience gained through many years of resilient flooring manufacture, makes possible sound recommendations to architects who have special flooring problems. For answers to your particular flooring question or for information on specific flooring materials, get in touch with any Armstrong office or write directly to the Armstrong Cork Company, 8910 State Street, Lancaster, Pennsylvania.

INSTALLATION METHODS FOR BURLAP-BACKED AND FELT-BACKED RESILIENT FLOORING

TYPE OF SUBFLOOR	TYPE OF BACKING				
	Burlap	Asphalt Saturated Felt	Safety-Back	Fresh-Fiber	Armofelt
Wood, Plywood	Cemented Over Lining Felt	Cemented Direct or Over Lining Felt	Cemented Direct or Over Felt	Cemented Direct or Over Felt	Cemented Direct or Over Felt
Suspended Floors of Concrete, Floor Fill, Ceramic Tile, Marble, and Terrazzo	Direct or Over Felt	Direct or Over Felt	Direct or Over Felt	Direct or Over Felt	Direct or Over Felt
Metal	Direct	Direct	Direct	Direct	Direct
Magnesite	Direct*	Direct*	Direct*	Direct*	Direct*
On Grade and Below Grade	Do Not Install	Do Not Install	Do Not Install	Do Not Install	Do Not Install
Stair Treads Wood Concrete Metal	Over Felt Direct Direct	Direct Direct Direct	Direct Direct Direct	Direct Direct Direct	Direct Direct Direct

** Magnesite subfloors vary in condition and composition. A special Armstrong recommendation should be made for each case.*

Picture Windows of Steel...



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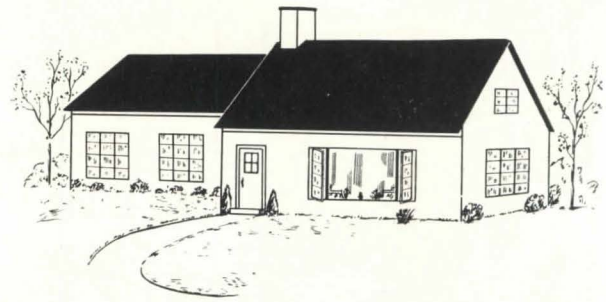

that *Breathe* and are Beautiful too . . .

When picture windows are discussed you often hear the remark—"They're beautiful but have limited functional use." In the past, picture windows have been beautiful but that's about all. Other than letting in light and keeping out the elements they had no utility. Now Ceco offers picture windows of steel that are not only beautiful but have full utility, too. This comes from controlled ventilation. Yes, picture windows of steel that breathe. That capture and control every stray breeze. That turn any amount of fragrant fresh air into the home.

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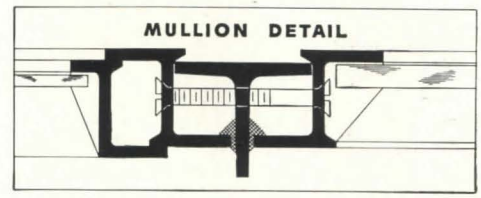

HOW TO MAKE A PICTURE WINDOW from CECO Stock Casements

Here's one of many combinations. Order a Ceco stock casement 44 Fixed with muntins removed as illustrated. Combine with Ceco stock casements 1414-Left-Hand and 1414-Right-Hand by use of Ceco standard mullions. There you have a picture window all ready for glazing.

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VIEWS

PLEADS FOR BALANCE

Dear Editor: The article by Milton Kirchman (August 1947 PROGRESSIVE ARCHITECTURE, p. 41) has contributed nothing toward the understanding or appreciation of modern work. While pointing out the irrationality which marks so much of the choice of forms, materials, and modern technology, and while attributing the style of much of our modern construction to purely esthetic principles, Mr. Kirchman never attempts to make clear that such thinking to a great extent is the thinking which goes into anything designed and made.

The "internationalist" (and all other) designers are prompted in their reasoning by two things: first, the functional considerations which determine the overall aspect as well as many details of the work; second, the irrational, purely esthetic outlook which governs the designer's choice where pure utilitarianism is not the only consideration.

It seems to me that these two points are appropriate in the discussion of almost any design and fabrication. Where have the purely rational, functional thinkers produced any work of consequence or beauty which was solely rational and functional? And I have yet to see the work which was born of pure esthetic consideration and of that alone which is an example of worthwhile architecture. The works we respect and acclaim and are inspired by are the ones which show the considered balance between rational thinking and esthetic feeling.

Mr. Kirchman's article tends to cast a shadow on the estheticism of the "internationalists." He does a disservice to the designers who are today building fresher, more sensible, and more beautiful structures.

DAVID KOSAKOFF
Elmhurst, N. Y.

ARCHITECTS OR COPYISTS

Dear Editor: After reading Henry M. Seaver's letter in the August issue of PROGRESSIVE ARCHITECTURE, I couldn't help but wonder what would become of the profession if we younger men of the profession had to be guided by such unprogressive men as Mr. Seaver.

If we were to proceed along the lines Mr. S. suggests, we would not be architects but merely copyists, copying the mistakes of past copyists. If this was all the profession of architecture had to offer, I am sure there would be very few architects in the years to come. Borrowing two paragraphs from Royal Barry Wills' book, *This Business of Architecture* (who incidentally is an expert copyist, but also can and does do good modern architecture), he states as follows:

"Years ago, when the practice of architecture went into its professional phase, it created the architect as an unbiased defender of his client's interests, a role which is still one of his more important obligations. Simultaneously it made him a priest of arty mysteries and a defender of traditional dogma, to the detriment of progressiveness and the cult of common sense.

"Now the changing world has banished ironclad traditionalism and introduced to the architect a host of competitors in the realm of pure and impure business. Because of sacrosanct decades of defenseless immunity his back is more nearly to the wall than he realizes, but he has the best of arguments for his continued existence will he but galvanize himself into an intelligent aggressiveness."

As to Mr. Seaver's remark that he has never done "modern" design, as the people he knows are refined and have good taste; I would feel from that remark that they also must live in houses with outside plumbing, drive a horse and buggy, cook on a wood or coal stove, and burn candles or kerosene lights.

ROBT. A. MILLER
Portland, Ore.

NO HAND-ME-DOWNS!

Dear Editor: In reply to the letter of Mr. Henry Seaver in the "Views" section of your August issue, I wish to contend the philosophy of Mr. Seaver, one who is completing a life's work in architecture and who fairly represents his generation, with the philosophy, in few words, of one, myself, who fairly represents the generation now beginning their life's adventure in architecture.

That Mr. Seaver's years in his profession were "very enjoyable" is, indeed, fine, and we young men are assuredly hoping, even expecting, to find joy in this our chosen field, but not so easily, it would seem, as the generation now passing. Not so easily, I claim, for now, the young architect, more sensitive to such practical yet exciting matters as revolutionary advances in science and building materials and methods, expanded modes of living, large-scale city planning and public housing, activity in the allied arts, and continuous review of contemporary work in other nations will not be satisfied to adhere religiously to the demands of the untrained and unimaginative (in the arts) client-public and to depend upon the dusty journals of yesteryear.

In leaving the field, Mr. Seaver discounts anything "modern" by referring to the current erection of big flats in Georgian style and he discloses an unblemished record maintained over his years of service of never having been approached by a client desirous of "modern design," said clients having such "good taste." Good taste! The young architect of today may consider good taste to be a symptom of a dogged adherence to hand-me-down forms and fancies and an equally dogged distrust and resistance to new ideas, any experimental frame of mind, and adventure. With the young architect zestfully committed to investigate the intriguing architectural horizons in this age of industrial and social advancements and possibilities, can the specter of multistory buildings with seventeenth-century trimmings and the stultifications of refined good taste be more than a halter and a discouragement? We're too full of life and ideas for that!

ROBERT C. GAEDE
Shaker Heights, Ohio

PLANNING: TWO JOBS

Dear Editor: I was very much interested in your Observations on the education of a planner, particularly your statement that every town planner must be an architect. Of course in our training of architects, as you know, we have always been interested in getting them to understand the problems of town planning. No architectural student will be graduated from my school who has not had a pretty thorough training along town planning lines. However, I question the possibility that every town planner can be an architect, or necessarily should be one, although town planning certainly must have an understanding of what the role of architecture and architects is in town planning.

I visualize the town planning function as being divided into two parts, if we are to do the job that is ahead of us in all of our cities. We need thoroughly trained men—technicians in government, public administration, politics, economics, sociology, and public relations. These men, as I visualize them, would be the program planners. They are the men who will write the specifications for the city planning job. They are the men who will set the social and economic goals towards which the plan should be directed. It is up to the second technician, the technically trained planner with architectural and engineering training, to provide the means for accomplishing the physical requirements of the program. The archangel Gabriel himself would be about the only person capable of handling both jobs competently, and yet we are attempting to train a number of men to do them both. Our world has become so complex, even on the local planning level, that I am thoroughly convinced that the two types of training must go hand in hand in a joint program, in order that the two technicians may learn what the other jobs are, how to speak each other's language, and how to get along with each other in the future in an action program.

Notice I use the word "action." Up to now the general philosophy has been that the planner is to be an adviser and a coordinator. This is a questionable philosophy because so little has re-

(Continued on page 10)

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VIEWS

(Continued from page 8)

sulted from it. Coordination does not imply specific action in any direction. It is a sort of circular movement. Coordination in government is purely an administrative function. Until we step beyond coordination into the actual program, which the trained architectural technician requires as a basis to the plan, we will continue to maintain the vested interest in the status quo.

CARL FEISS, Director
School of Architecture & Planning
University of Denver

DIFFERENT TYPES

Dear Editor: Mr. Weidlinger has presented a timely and well prepared article on welding applied to structural steel in the June and July issues.

I feel the author should have given more attention to design and planning of different types of structures. Welding is an accepted process and it has been used for the last fifteen years in joining members and fabrication of frames.

On the discussion of rigid frames vs. column-beam structures, a distinction should have been made between types of frames susceptible to continuity and of those requiring flexible connections. Office buildings, hospitals, libraries with low loadings and standard bays will not show any economy in taking advantage of continuity. The saving in cost of steel does not, in general, compare favorably with the cost of additional welding, fabrication, and time needed for an elastic analysis. The practice is to use flexible connections and although saving in steel is possible, it is offset by the detail drawings required. Sometimes beams can be run continuously through a few bays, but the economy in this case depends also on whether the saving on the cost of steel justifies the added cost of welding. Rigid frames and multi-story structures as used in industrial buildings take full advantage of continuity and show decided economy.

The paragraphs covering the complexity of elastic analysis are very clear and place the architect in a position to appreciate the difficulty and extra amount of work required. However, there are various approaches to the solutions of rigid frames and a method can be chosen to suit the structure under consideration and the required accuracy.

G. MIANULLI
Brooklyn, N. Y.

V. A. PROGRAM UNWIELDY

Dear Editor: As we know now, there is no intention of turning the program back to V. A., at least not any part of it on which the private architects have worked. In any case, we do not believe that the situation is going to be as harmful to the private architects as some seem to believe. We think that quite the opposite may be the case and that the bad handling of the Veterans Hospital Program may bring about a reaction, not only from architects but from the general public, against Government participation in future building programs, particularly that covered by the Hospital Survey and Construction Act. This, to say the least, would be unfortunate.

There is one reason for the failure of the Veterans program which does not seem to have been sufficiently stressed in your article. It was quite evidently impossible to try to design and review so many projects all at the same time with any other result. Why the program was carried out this way was apparently due to "politics." Had certain hospitals been chosen as the first to be done, all those communities which were asked to wait would have been up in arms. The consequence, of course, has been that no community, now long after the program was started, has yet a hospital.

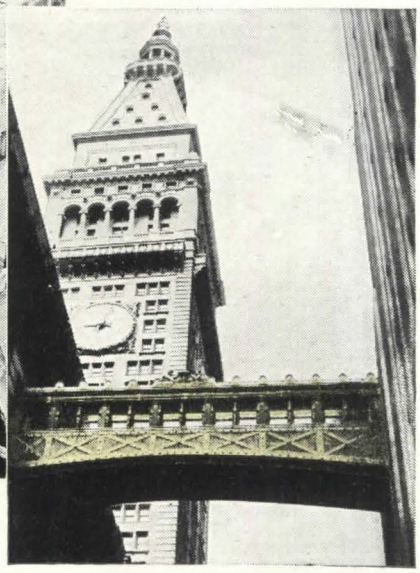
Adding to the difficulty which the unwieldy nature of the program brought about was the method of reviewing the drawings which your report mentions. There is no question that time and again the second review was not merely a check on the first (which it should have been) but a completely new criticism which often enough reversed much of the criticism originally offered. As is

(Continued on page 12)

Anaconda 20-oz. Sheet Copper originally installed in 1920, is being removed from the famous footbridge of the Metropolitan Life Insurance Company to be re-installed on a new bridge.

Arthur O. Angilly, New York architect, who supervised relocation of the bridge, reports the copper as sound and enhanced in appearance by its rich green patina. Nicholson and Galloway, founded in 1849, not only installed the sheet metal work on the original bridge, but also did the work of removal and re-installation 26 years later.

Below is the relocated bridge—with the famous Metropolitan Life Insurance Company tower in the background.



ON NEW YORK'S SKYLINE FOR 26 YEARS

Anaconda Copper Sheathing re-used on new aerial footbridge

THE 6,000 lbs. of Anaconda 20-oz. Cold-rolled Sheet Copper, covering the footbridge connecting the main building and annex of the Metropolitan Life Insurance Company, had been exposed to the moist, corrosive atmosphere of Manhattan Island for more than a quarter century.

The copper had acquired a natural, soft green patina—protecting it from corrosion. Since its installation in 1920 the amount spent for the upkeep of the bridge's copper exterior had been practically nil, according to a maintenance engineer for the buildings.

In 1946, the annex was razed to make way for new construction. At that time, the span was relocated to connect the head offices with another Metropolitan structure. Inspection showed the copper to be in such excellent condition that it was carefully removed and used to cover the new, relocated bridge—proving, once more, the durability and economy of well-designed copper work. 4750A

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VIEWS

(Continued from page 10)

now known, this is to be changed. After the V. A. has reviewed the Phase "A" drawings, they will not be submitted again and the Engineer Corps is to be responsible for seeing that the V. A.'s criticisms are met. We feel sure that if this routine is adhered to, the situation will be improved.

FAULKNER, KINGSBURY & STENHOUSE
Washington, D. C.

MORE CRITIQUES

Dear Editor: Your May issue was very satisfactory, particularly your Critique on Retail Stores, which I found very interesting. I hope you will continue to present more Critiques in your future issues.

LEONARDO S. RAMIREZ
Manila, P. I.

NEW MEN: NEW OFFICES

Dear Editor: Columbia University student-veteran Wm. F. Jones (July 1947 PROGRESSIVE ARCHITECTURE, p. 8) will profit by a better understanding of the problems of "the newer firms . . . established by young men who were fortunate enough to complete their education uninterrupted by the war." Uninterrupted education—yes; uninterrupted practice—no.

Mr. Jones would be quite surprised at the number of architects in these newer firms who also "fought a war so that our schools, their faculties, and students could study architecture with the freedom so necessary for the art," and who by that experience are cognizant of the student-veteran's worth.

As an architect, a veteran, and visiting critic on thesis work at Columbia last term and at Yale this term, I have had ample opportunity to note the understanding between new graduates and new offices. The more progressive graduate wants to start in the small progressive office. Why? He is closer to the brains and heart of each problem, and ironically these newer offices find time and money to devote to his education.

DON HATCH
New York, N. Y.

NOT DAZZLED

Dear Editor: In the August issue "Observations" you hit several nails directly on the head. The number of one-armed offshoots of the architectural profession is amazing.

All begins with our schools. M.I.T. has two departments—City Planning and Architecture; Harvard has three departments — City Planning, Landscape Design, Architecture. These three subjects, including engineering and art, should be taught simultaneously.

The landscape designers retreat behind a cloud of Latin terminology. Yale has ridden a Beaux Arts horse and tried to spur it with International tricks.

Perhaps this makes sense—but it doesn't to me—and I am not dazzled by the learned verbiage that accompanies the defense.

SHELDON BRUMBAUGH
Klamath Falls, Ore.

NOTICES

NEW PRACTICES, PARTNERSHIPS

ELI CONSTANTINE has become a member of the architectural firm of O'HARA, HEDLANDER & EDSON of Greenwich, Conn.

ELMER J. FOX has opened new offices in the Consumer's Bldg., 220 S. State St., Chicago 4, Ill.

W. W. MEYERS and R. A. KRIDER, architects, and F. D. ELLENBERGER, engineer, announce their association for the practice of architecture under the firm name of MEYERS & KRIDER, 407 Commerce Bldg., Erie, Pa.

CHLOETHIEL WOODARD SMITH is resuming his architectural practice at 814 17th St., N. W., Washington 6, D. C.

FRANK EDWARD GALVIN has opened an architectural office at 172 Newbury St., Boston 16, Mass.

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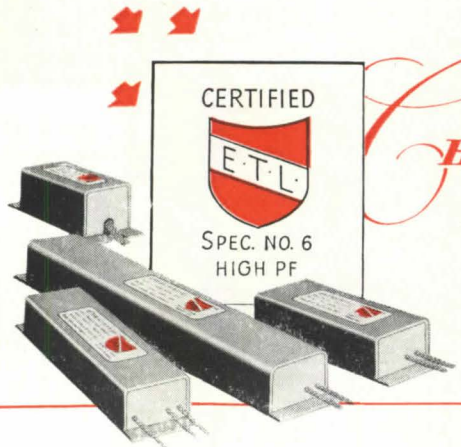

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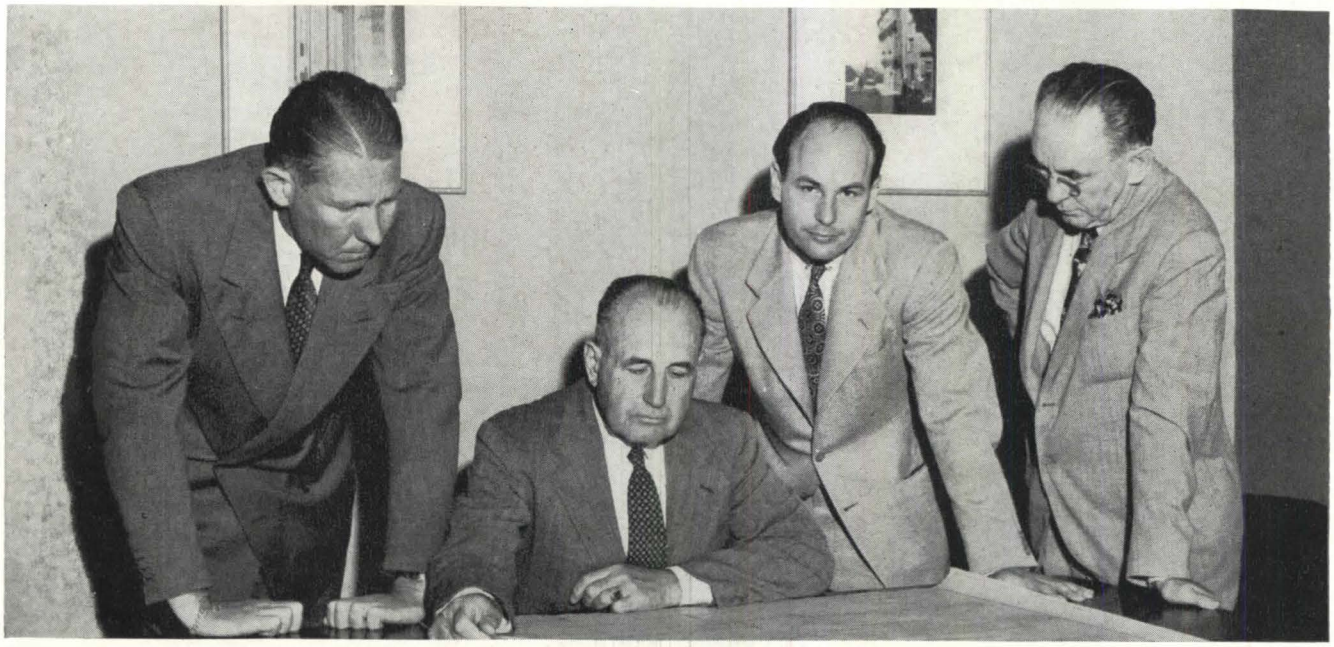
Sola Electric Co.
2525 Clybourn Avenue
Chicago 14, Illinois

Starring and Company
Bridgeport, Conn.

Wheeler Insulated Wire Co., 378 Washington Ave., Bridgeport, Conn.

THIS MONTH



L. G. BERNARD G. BURTON BRINEY C. DAY WOODFORD R. W. POWELSON

Regarding the offices that architects have designed for themselves as a guide to their range of interests and talents, we present this month a group of such office-workshops. Located in Los Angeles, California, is the office of Parkinson, Powelson, Briney, Bernard & Woodford, a firm whose present status is the outcome of an architectural practice established in 1895 by the late John Parkinson. The family name of Parkinson is still carried on in the firm by **Mrs. Grace W. Parkinson,** widow of John Parkinson's son, Donald, who headed the office until his recent death. **R. W. Powelson** entered the firm in 1907 as bookkeeper, remaining with the Parkinsons as office manager in charge of accounting and finance, the same position he holds at present. **G. Burton Briney** spent four years in the office of the Pennsylvania Railroad's chief engineer before joining the firm in 1922. He has been successively draftsman, designer, chief draftsman, and manager of production. A graduate of the University of California School of Architecture, **L. G. Bernard** worked in several offices in Los Angeles before entering the firm in 1936. It was in 1945, upon termination of his service with the Navy Bureau of Aeronautics, that he became a partner. The most recent member of the firm is **C. Day Woodford,** who studied at the University of Minnesota's School of Architecture. He was with the National Park Service and with various architects in the Los Angeles area prior to his association with the office in 1940. The chief work of the firm has been with commercial, industrial, and monumental buildings.

Also included in the office-workshops in this issue are the designs of three architects who are already known to our readers: **E. Gunnar Peterson,** of Falmouth, Massachusetts (see May 1947 PROGRESSIVE ARCHITECTURE); **Ralph C. Flewelling & Associates,** Los Angeles, California (see August 1947 PROGRESSIVE ARCHITECTURE); and **Donald Dwight Williams,** Seattle, Washington (see July 1946 PROGRESSIVE ARCHITECTURE).

The Dewey showroom and restaurant in Quechee, Vermont, designed by E. H. and M. K. Hunter, of Hanover, New Hampshire, is the second in our series of presentations of the 1946 PROGRESSIVE ARCHITECTURE Award buildings. (For photograph of the Hunters, see June 1947 PROGRESSIVE ARCHITECTURE.)

(Continued on page 18)

NEXT MONTH

● An adroit blending of modern forms and materials distinguishes the Palm Springs Tennis Club designed by Paul R. Williams and A. Quincy Jones, Jr., associated architects of Los Angeles, for a picturesque setting at the California resort favored by film notables. This will be the lead feature in next month's issue.

● The fifth in our series of Critiques will be devoted to Health Facilities. The group of buildings selected as examples for analysis and discussion next month will include: Southern Hospital, Stockholm, Sweden, by Hjalmar Cederstrom, architect; Greenwich Hospital, Greenwich, Connecticut, by Skidmore, Owings & Merrill, architects, Chicago, Illinois, and New York, N. Y.; Dormitory, Keeley Institute, Dwight, Illinois, by Schweikher & Elting, architects, Roselle, Illinois; King County Central Blood Bank, Seattle, Washington, by Naramore, Bain, Brady & Johanson and Joseph Wohleb, architects, Seattle, Washington; Wayne County Health Center, Michigan, by Eberle M. Smith Associates, architects, Detroit, Michigan; Nurses' Home, St. Cloud Hospital, St. Cloud, Minnesota, by Long & Thorshov, architects, Minneapolis, Minnesota; Nurses' Home, Memorial Hospital, Anniston, Alabama, by Charles H. McCauley, architect, Birmingham, Alabama.

● In the Materials and Methods section a pertinent article by John Rannells and Leighton Arrowsmith will be devoted to criteria for the selection of hospital equipment. There also will be a streamlined specification for the special "Hospital Casework" required for equipment of hospitals and other health facility structures, prepared by Ben John Small.

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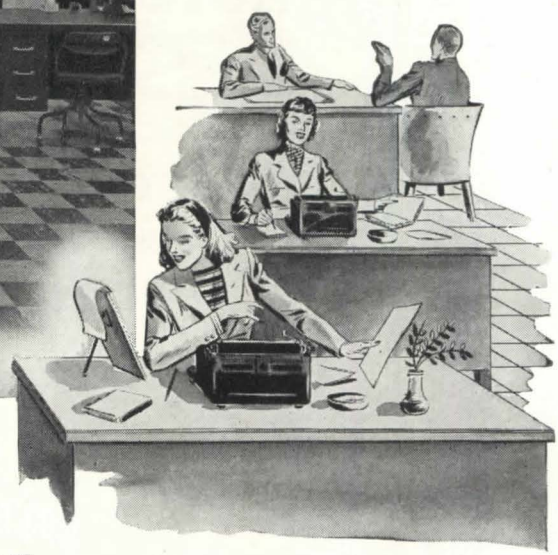

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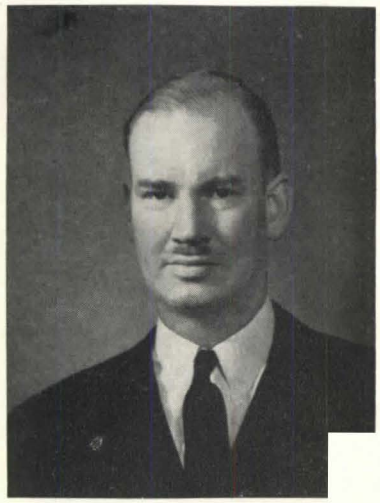
THIS MONTH

(Continued from page 14)

Edgar Hayes Hunter, a native of Hanover, attended Dartmouth College and the Thayer School of Engineering, and while at school was sent to Germany as a member of the United States Olympic Ski Team to compete in the 1936 Olympics. It was while in Europe on an extended skiing holiday that he visited many ski resorts and first became interested in resort architecture, an interest now evident in his practice. His graduate work in architecture was done at the Harvard School of Design. During 1941-42 he instructed in Naval Architecture at M.I.T., and the following three years practiced in this branch of architecture and acoustic mine gear design for the Navy in Boston and New York. With his appointment as an instructor in architectural design at Dartmouth, he returned to Hanover, where he and his wife, **Margaret King Hunter,** now maintain their practice. Mrs. Hunter attended Wheaton College, where she majored in art. After spending two summers apprenticed to a landscape architect, she entered Smith College Graduate School of Architecture to major in landscape design, but at the end of the first semester changed to architecture. Her second year of graduate study was spent at the Harvard School of Design. Her experience includes work for Antonin Raymond and for Raymond Loewy Associates during the war years. At present, the office of Hunter & Hunter is busy on residences, resort hotels, and the over-all development of a mountain area ski resort.



HAROLD BURRIS-MEYER

The "Case History" of **Sheldon Brumbaugh** of Klamath Falls, Oregon, should be of special interest to those readers who remember the first presentation of this architect's work in the June 1947 PROGRESSIVE ARCHITECTURE (see same issue for biographical data).

Harold Burris-Meyer and Edward C. Cole are co-authors of "The Audience Hears," the feature article in the Materials and Methods section this month. **Harold Burris-Meyer** maintains that his education was "without consistency of purpose, location, or visible result." His record speaks for itself, however. At present director of research in the dramatic arts at Stevens Institute of Technology, and a practicing consultant, his activities have included work as director of the Stevens Theater; director of research in sound in the theater, a project subsidized by grants from the Research Corporation and Rockefeller Foundation; director of a project in the Physics Section, National Defense Research Committee; and director and vice-president of the Muzak Corporation. His name is particularly associated with work on the first complete control of the auditory component of dramatic production and the first analytical studies leading to the development of the functional uses of music. **Edward C. Cole,** professor of dramatics at Yale University, is the co-author of a book on theatre design in which this article will be included. He has also been co-author with Burris-Meyer of an earlier book, *Scenery for the Theatre.*

Concluding the Materials and Method section this month will be Part II of the article on Modular Gardens and the accompanying Plant List compiled by **James C. Rose,** landscape architect, the first part of which appeared in the September issue.

Suggested color plan for a modern executive's private office, decorated according to the principles of COLOR DYNAMICS

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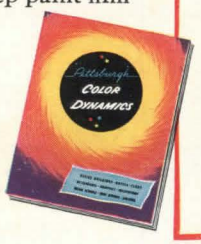

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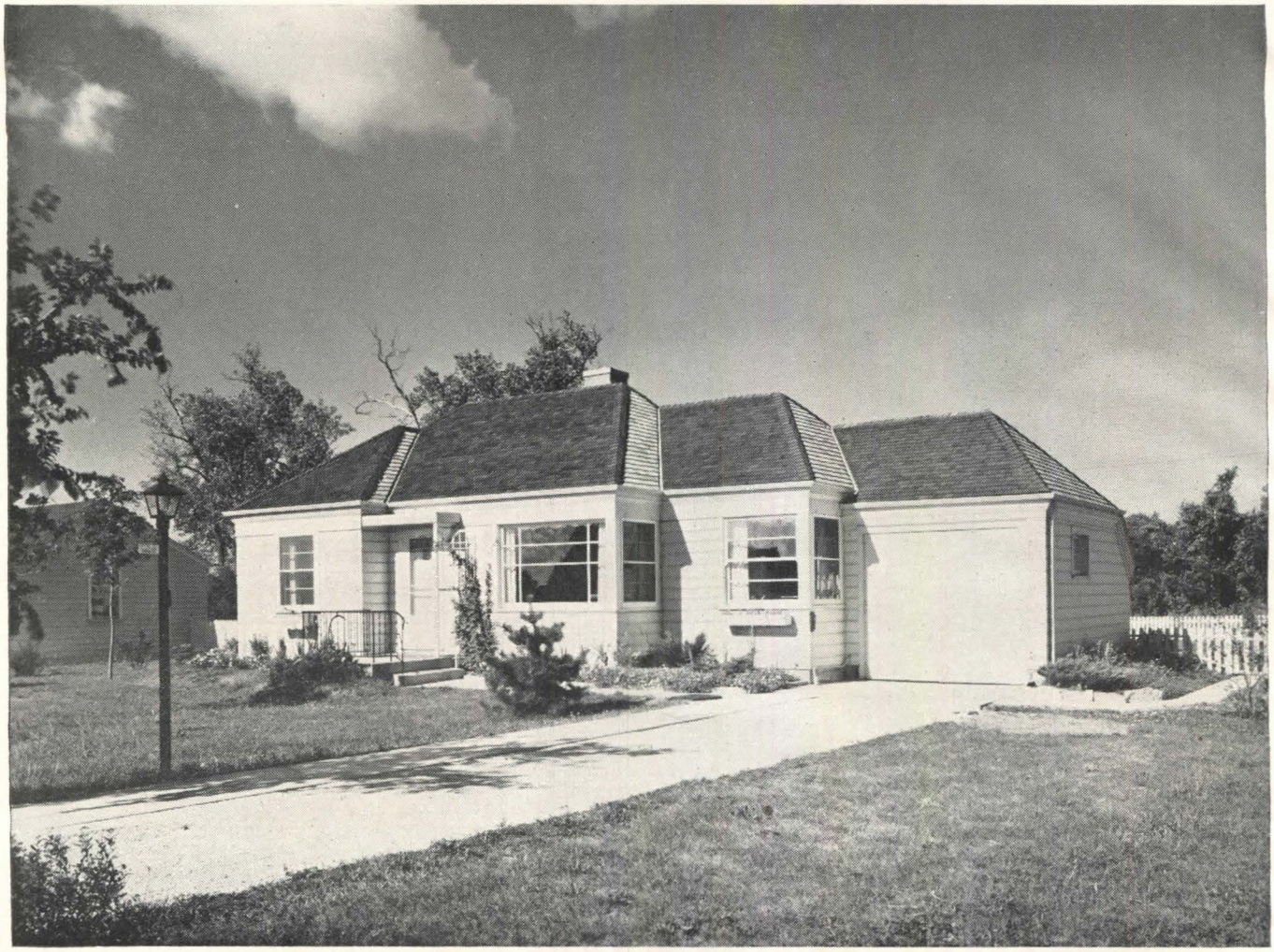
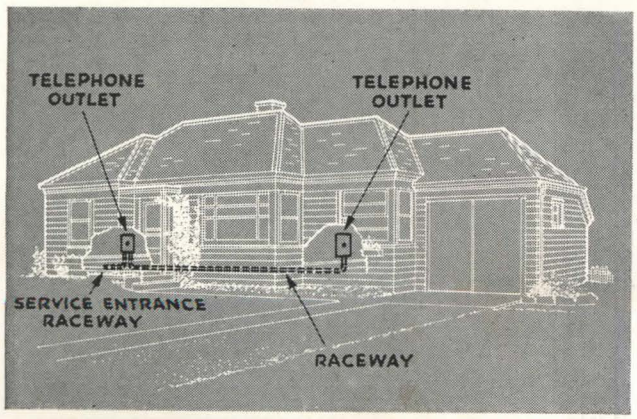


Bertram Weber, Architect

THIS SPICK-AND-SPAN MODERN HAS A RACEWAY FOR TELEPHONE WIRES



Conveniences are important in small homes as well as large. Certainly a raceway for concealing telephone wires belongs in every plan.

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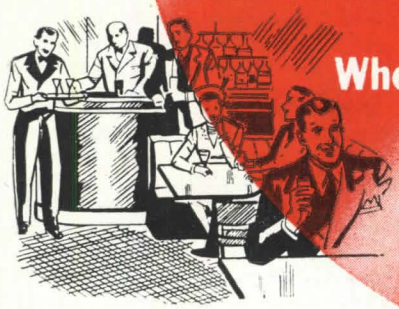

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PROGRESS REPORT

BRIDGING THE RENTAL GAP

A modest beginning has been made in New York toward providing modern, clean shelter for families whose income of $3,000 to $4,500 excludes them from low-rent subsidized housing projects yet would not be enough to pay the rents that private builders expect to charge for apartments they have promised to build. To help in bridging this indeterminate gap in rental scales, Mayor O'Dwyer and the Board of Estimate have agreed to the development by New York City Housing Authority of six partially subsidized projects to accommodate about 23,000 persons at a monthly rental of $12.50 a room.

This step, taken with expressed misgivings on the Mayor's part and despite gloomy warnings from City Construction Coordinator Moses against overextension of the city's housing program, was perhaps faltering but in the right direction. The impetus came from a two-year-old plan of the Housing Authority for nonsubsidized, self-sustaining public housing within means of the income group just above the low bracket. The plan was ably outlined by Maxwell H. Tretter, former executive director of the Housing Authority, in the June 1947 issue of *Housing News* published by the Citizens Housing Council of New York. The goal was to provide public housing without any cash subsidy at all. It was assumed that the Authority would be given partial tax exemption to the extent of the value of the improvements (such as conceded to insurance companies and other private investors in redevelopment); that sites would be vacant land, purchasable at $1 a square foot and ready for immediate development without costly demolition or removal of tenants; that housing bonds issued by the Authority would be guaranteed by some governmental division, producing an interest rate of 2% or less over a 45-year period; that design standards, development cost ($2,300 a room exclusive of land), and operating cost ($70 a room a year) already established by the Authority would be applied to the new projects.

When the plan was proposed, as a means of narrowing the rental gap from the low rental side, while private enterprise was urged to close it from the top by *building* more moderate rental projects with city cooperation and concessions, the Authority offered to build projects for rental at about $10 a room a month. Higher construction and operating costs have since forced upward revision of that estimate.

The six new projects are to be granted tax exemptions and the sites are to be acquired for the Authority by the city at locations chosen by Coordinator Moses, who helped boost the cost of the projects he opposes by selecting lands that will cost more than the $1 a square foot anticipated by the proponents of nonsubsidized housing. The projects are expected to cost $63,000,000 (exclusive of $4,350,000 needed for utilities and other facilities) and funds will be obtained by issuance of Housing Authority bonds, as planned. But Coordinator Moses estimated that present building and operating costs would require a rental of $16 or more a room to make the projects self-sustaining. Charges have been published that a later memorandum from the Housing Authority, recalculating monthly rentals for the six projects on higher-priced sites chosen would be only about $13 a room and thus permit self-sustaining housing, was suppressed and ignored by Coordinator Moses.

As private builders now are talking of minimum rentals of $25 a room and up, for the apartments they promise but are not building, even the $16 rental would hardly be within the scope of private enterprise. But Coordinator Moses, zealously protecting this potential housing field for private investors although they refuse to consider investment for a rental scale so limited, insists the $16 rental would be competitive with private enterprise. The Board of Estimate apparently agreed, with reservations, as it specified that a cash subsidy be introduced, after all, to bring rentals down to $12.50 a room a month.

The New York State public housing law permits one or more of six special taxes to finance low-rent projects, so the Housing Authority can obtain cash aid from these sources. Housing proponents, especially those concerned for veterans and their families, are hoping this will not stifle further moves toward self-sustaining, nonsubsidized housing as originally envisioned by the Housing Authority. Obviously, the cash subsidy demanded for the present six projects makes them vulnerable to attack from critics of Government efforts to provide clean, modern shelter for those who have in the past been forced into deteriorated buildings at landlords' prices. The intention to build self-sustaining projects that would insure light, airy, and clean apartments for this income group without cash subsidy is defensible, proponents point out, as creating a base for the private construction efforts. Property owners and realty developers might be expected to welcome stabilization of rents at the low level, from a business as well as humanitarian approach, except that there would then be no demand for outworn, dilapidated buildings. And the cost of removing such structures is not provided by the amortization plans of our builders—whether the project is a soaring tower or a one-story taxpayer. Thus planning is again afoul of the "get yours and get out" system of urban development.

In Chicago, where housing experts have been drawn to non-subsidized housing as a solution for a considerable proportion of the ill-housed or shelterless families including the many veterans of moderate income, studies are being made to determine whether such projects could be constructed to rent for an average of $60 an apartment a month. Mayor Kennelly's Committee for Housing Action includes in its program an allocation of $2,500,000 for nonprofit corporation housing in Chicago. Under this proposal, the Housing Authority of Chicago would acquire vacant land, install any necessary streets and utilities, and then turn over the prepared site to a nonprofit corporation which would use it as the necessary equity to obtain an FHA insured loan for construction of moderate rental housing.

Two major obstacles must be surmounted before this program becomes a reality. The first is the very serious legal question whether any such transfer of public assets is permitted by the constitution and statutes of Illinois. The second, according to Elizabeth Wood, executive secretary of the Chicago Housing Authority, is whether such projects could be constructed to rent for the prescribed $60 average.

HOSPITAL CONTRACTS

When President Truman signed the Labor-Social Security Appropriations Act, July 8, making $75,000,000 available for hospital construction during the fiscal year 1948, no funds were appropriated directly but they are to be made available through a system of contractual obligations. Since the federal share is but one-third of the amount that can be spent, when state and local funds are brought into the total, this promises a hospital construction program totaling $225,000,000.

States are assured that they need not delay planning hospital construction, since any construction project approved by Surgeon General Parran is in effect a contractual obligation on the part of the federal government to meet its one-third share of the cost. Thus is implemented the construction phase of the Hospital Survey and Construction Act passed last year by Congress to authorize appropriation of $3,000,000 for survey and planning, then $75,000,000 annually for five years for construction.

Funds may be used for health centers, laboratories, clinics, and other health

(Continued on page 22)

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PROGRESS REPORT

(Continued from page 20)

facilities, as well as for hospitals. At this time, all states and territories are understood to be conducting inventories of their hospitals and health facilities preparatory to a general construction program next year. So that the federal share of costs will be met before state and local funds (two-thirds) have been substantially used, states are advised by the Surgeon General to report projects promptly, as approved, so that Congress will be prepared to appropriate for the resulting contractual obligation, payable through the United States Treasury. Some few states have already reported approval of first projects.

NOTICES

EXHIBITIONS, MEETINGS

The first two days of this month were set aside by the New York Chapter of Producers' Council for its "Informational Exhibits Parade" presented in New York as first of a series of exhibitions of new buildings products and equipment, to be sponsored in principal cities of the country by the council. Technical discussions led by men of wide experience in the fields of construction and maintenance were arranged to further inform the architects, engineers, designers, consultants, decorators, builders, contractors, and maintenance managers invited to attend. The purpose of the exhibition and meetings, as outlined by William F. Otto, of Pittsburgh Plate Glass Co., exhibit chairman, was to furnish accurate answers to such timely questions as: What new products or equipment are available for immediate construction? How can established materials and equipment be adapted to modern architectural design? How can a start be made toward reducing residential building costs?

The second International Lighting Exposition and Conference scheduled November 3-7 in Chicago, under auspices of the Industrial and Commercial Lighting Equipment Section, National Electrical Manufacturers Association, is expected to attract a representative attendance from the various industries, professions, and trades constituting the lighting industry. Exhibits of new equipment and improvements in lighting techniques will be featured.

Theater engineering will be the topic of discussion at some 10 sessions of the 62nd Semi-annual Convention of Society of Motion Picture Engineers, scheduled October 20-24 in New York. Architects, theater owners, and others interested in theater construction, modernization, and operation will be expected to participate in the discussions and gain full benefits from the conference series.

Anticipating a record boom in construction of Catholic parochial and institutional buildings, a National Catholic Building Convention and Exposition has been set for June 30 to July 3, 1948, in Chicago. Arrangements are being made by the Very Rev. Henry A. Lucks, president of St. Joseph's of Indiana at Collegeville, Ind., who expects this session to spur "efficient modern building" of churches and Catholic institutions. Panel sessions will be devoted to the principal types of church structures and new materials and equipment will be displayed.

APPOINTMENTS

The John B. Pierce Foundation, housing research organization, announces the appointment of WAYNE F. KOPPES as head of its Department of Architectural Design and Housing Research. Mr. Koppes was until recently supervising architect for the firm of Cutting, Ciresi & Associates, architects and engineers, of Cleveland, Ohio.

PROFESSORS MARION DEAN ROSS and THEODORE O. REYHNER have been appointed to the staff of the School of Architecture and Allied Arts at University of Oregon, Eugene, Ore. Mr. Ross will teach a course in the history of architecture on both graduate and undergraduate levels. Mr. Reyhner will be associated with the structural design curriculum.

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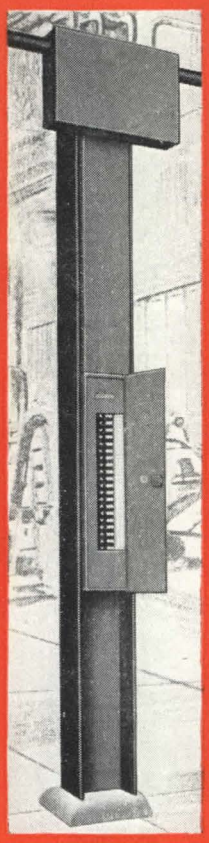

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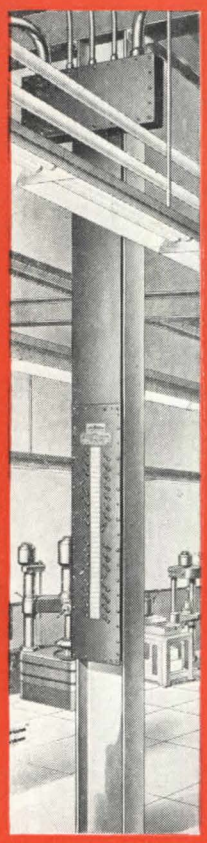

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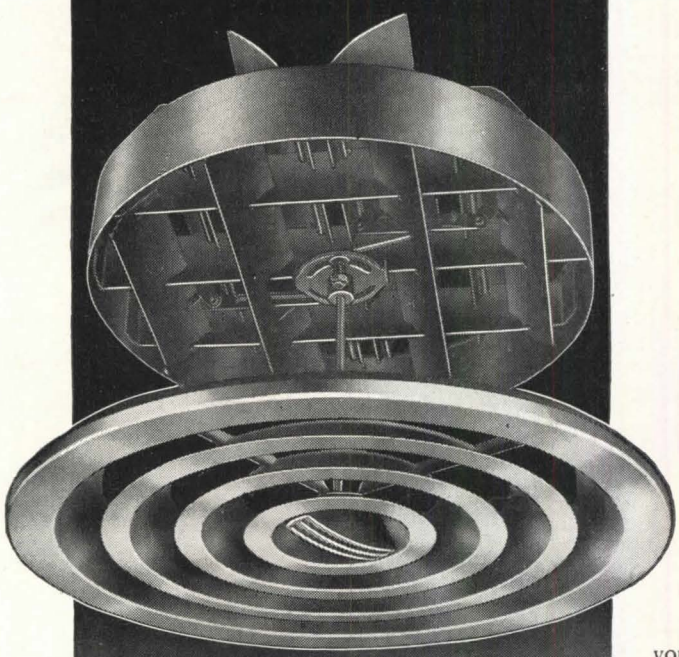
POSITIVE AIRFLOW CONTROL



WITH THE IMPROVED

AEROFUSE DAMPER

At the vital point of air delivery you measure the real efficiency of an air conditioning system. And, of course, the selection of air distribution equipment largely determines performance.

Take our *improved* Aerofuse Multi-Louvre Damper, for example. Balanced system assured by minute adjustment of air volume . . . convenient to regulate. Multi-Louvre construction divides supply stream, gives uniform distribution over entire outlet . . . and with minimum turbulence in air stream, quiet operation. In open position, damper provides effective area greater than that of corresponding size diffuser . . . closed, it assures complete shut-off. Tamperproof, louvres can be positively locked in any position . . . or, if desired, operator handle and rod may be removed to maintain established setting.

THIS COUPON . . . Will bring you complete details and engineering data on the improved Aerofuse Damper. Mail it today!

These are *exclusive* T & B designed-in features. As a result, when you specify Aerofuse ceiling diffusers—equipped with the Damper—for installation at the distribution end of air conditioning systems, you can be *sure* of effective, efficient control...the proper amount of supply air, delivered as you want it, where you want it, evenly distributed and without drafts.

Rush me complete information on the Aerofuse Damper.

NAME

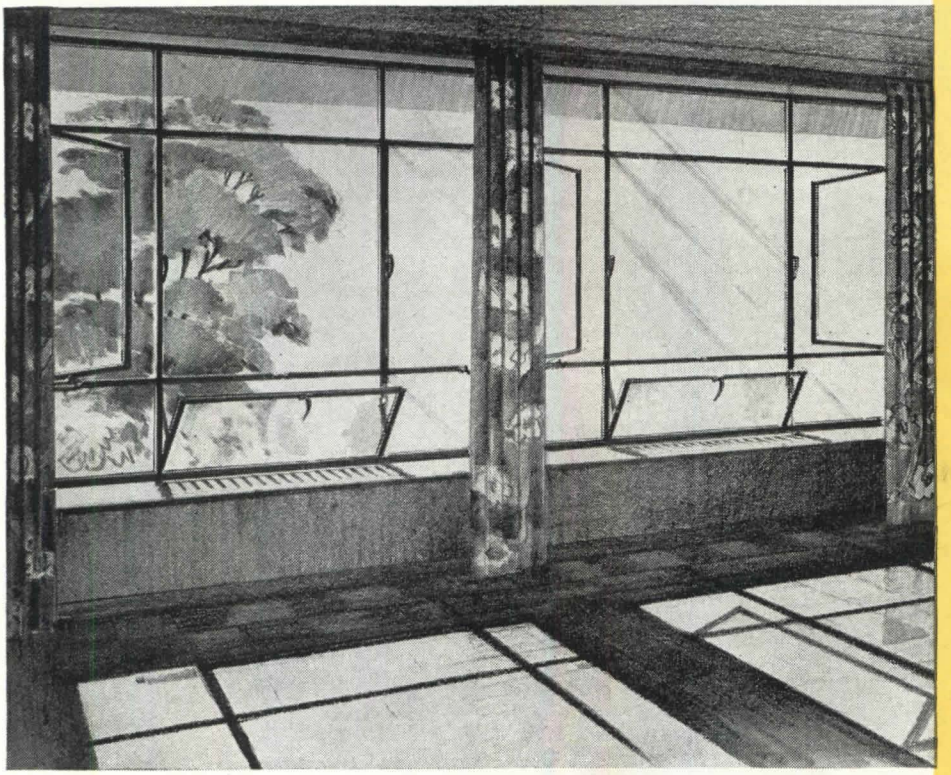
COMPANY

ST. & NO. CITY ZONE STATE

a development of

TUTTLE & BAILEY

NEW BRITAIN, CONNECTICUT



Fencraft Combination Window

WINDOW BENEFITS

that create client satisfaction

Windows can be merely "holes" in the wall . . . or *planned* elements that provide better ventilation, finer appearance and better daylighting—windows that create lasting client satisfaction.

Fencraft Combination Windows provide these benefits . . . and more:

FRESH AIR VENTILATION—hopper sill vent deflects air upward, provides protection from drafts; sheds rain or snow outside. Swing vents deflect breezes into the room when fuller ventilation is desired.

EASY OPERATION—simple to open, close or lock—with one hand.

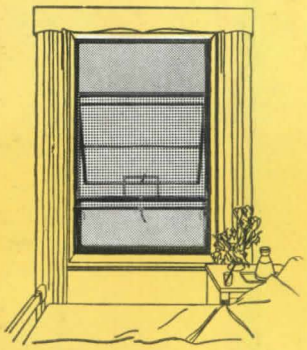
DISTINCTIVE APPEARANCE—high-quality workmanship, plus excellent hardware.

SAFER—hopper vent prevents leaning out windows; important for children.

SAFER SCREENING—all screens attached or removed from inside the room.

. . . and LOWER COST—from standardization which results in manufacturing and installation economies.

That isn't the whole story, by far. For full information on the Fenestra family of Standardized Fencraft Windows see Sweet's (section 16a-9). Or mail the coupon.



FENCRAFT PROJECTED WINDOW

—protection from weather, even when open. Open-out vent acts as canopy over opening. Open-in vent deflects air upward, sheds water outside.

FENCRAFT CASEMENT WINDOW

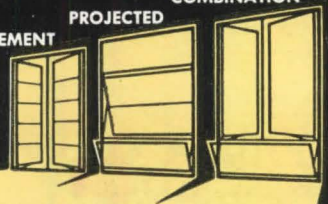
—safe washing—from inside. Easy to operate. Interchangeable screens, protected from outside dirt. "Homey" appearance makes them ideal for clubs, large homes, dormitories, and nurses' homes.

Fenestra

COMBINATION

PROJECTED

CASEMENT



FENCRAFT INTERMEDIATE STEEL WINDOWS

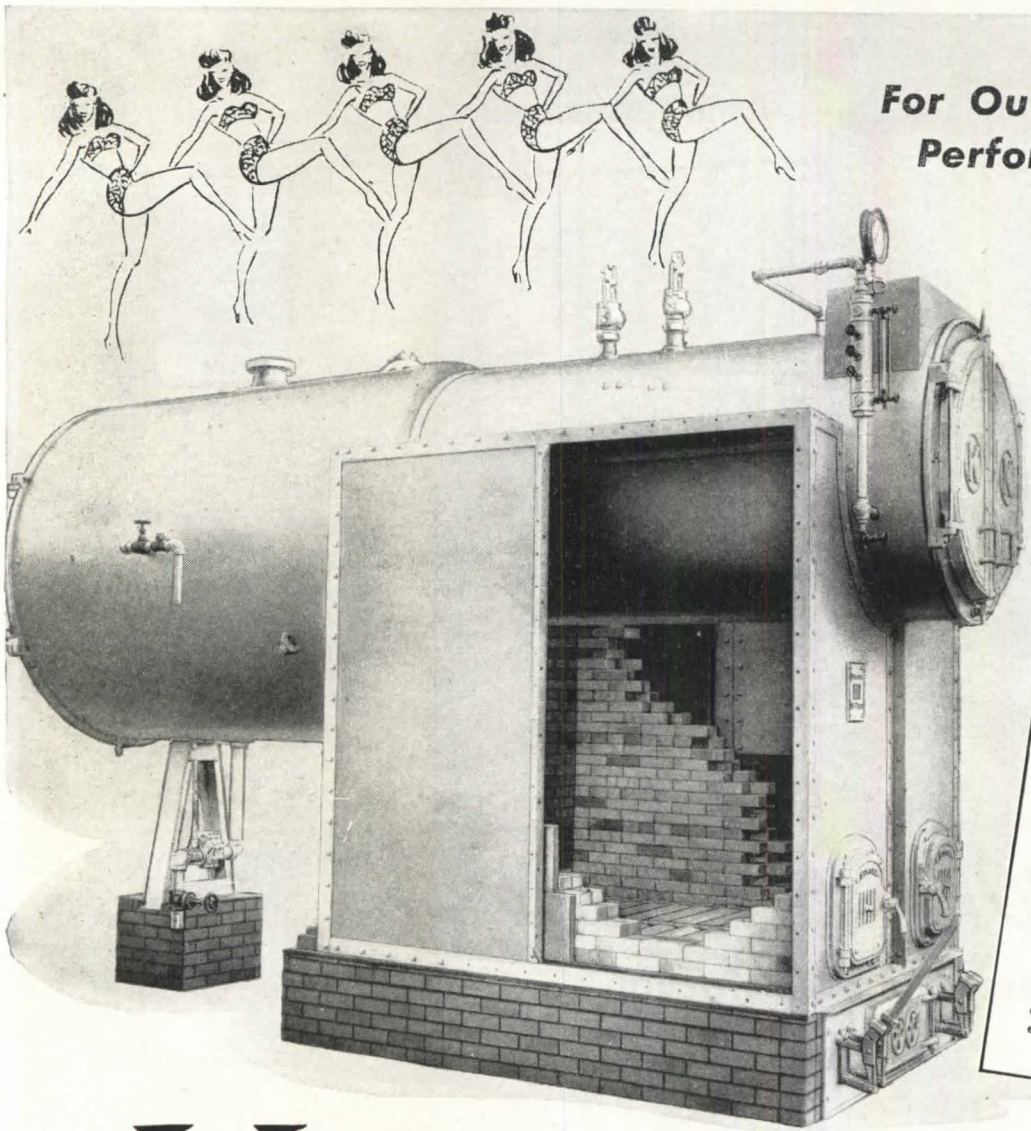
Detroit Steel Products Company,
Dept. PA-10
2253 East Grand Blvd.,
Detroit 11, Michigan

Please send me data on types and sizes of the new Fencraft family of Fenestra Windows.

Name_____

Company_____

Address_____



For Outstanding Performance

FEATURES

1. Welded two-pass portable "streamline" construction for high pressure. No. 1 WELD
2. Extremely rugged and compact yet delivers full efficiency.
3. Entirely self-contained. Conveniently accessible.
4. Refractory lined firebox "steps up" efficiency.
5. Burns any fuel, mechanically or hand fired. AND convertible from one fuel to another . . . quickly and easily.

KEWANEE

HI-TEST BOILER No. 1 WELD

Designed in full conformity with the ASME Code for high pressure boilers, Kewanee Hi-Test has won an important place in the line of outstanding steel boiler performers produced by Kewanee for more than 75 years.

Built in sizes for 50 to 150 Horse Power at 125 and 150 pounds Steam Working Pressure. For coal (hand or stoker fired), oil or gas and *easily and quickly convertible* from one fuel to another and back again, as desired.

SBI
Reg. U. S. Pat. Off.
MEMBER

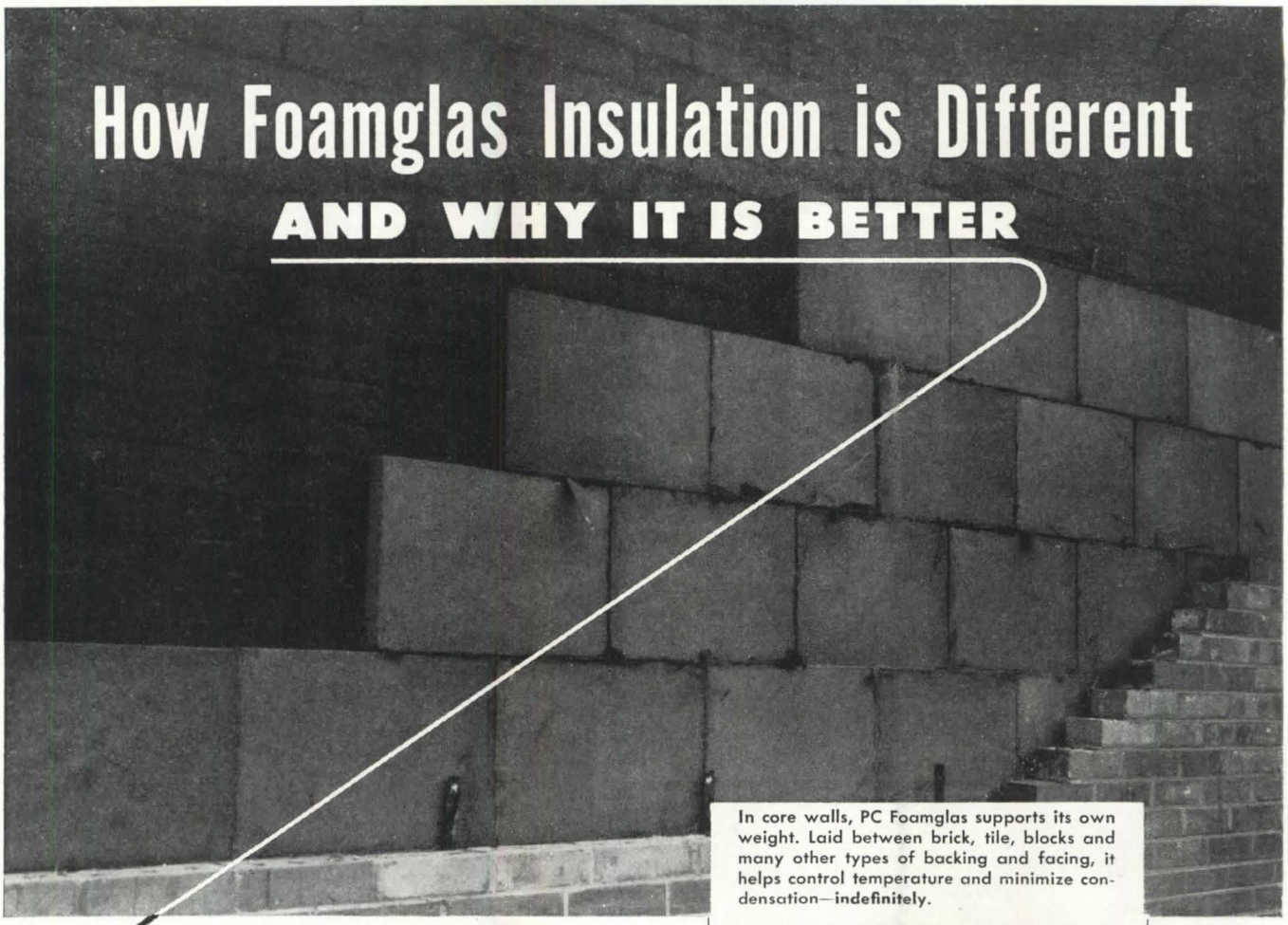
ARMY E NAVY

KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS
Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

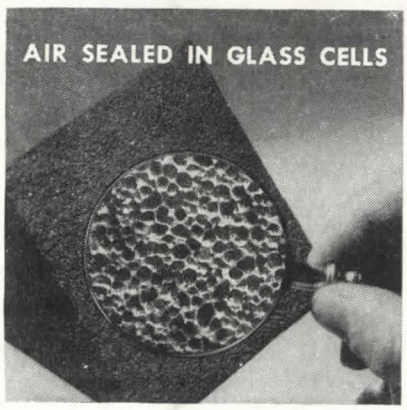
OVER 75 YEARS BOILERMAKERS

How Foamglas Insulation is Different

AND WHY IT IS BETTER



In core walls, PC Foamglas supports its own weight. Laid between brick, tile, blocks and many other types of backing and facing, it helps control temperature and minimize condensation—**indefinitely.**



PC Foamglas is the only material of its kind. It is not a fiber, not a wool, not a board or a batt. It is literally a foam of glass, solidified into big, light-weight blocks, each composed of millions of minute air-filled glass cells. That is how it is *different* from other insulating materials.

Its unique cellular structure gives Foamglas excellent insulating properties. And since it is glass—and therefore impervious to many elements that usually damage or destroy other insulating materials — PC Foamglas retains its original insulating value *permanently*. That is why it is *better* than other insulating materials.

PC Foamglas has proved its ability to help maintain temperature levels, to minimize condensation, in structures of all kinds, without repairs or replacement due to failure of the material. First cost is last cost when you insulate with PC Foamglas — whether walls, floors, roofs or ceilings. When you insulate with Foamglas you insulate for good.

Why not send the coupon for complete information? Pittsburgh Corning Corporation also makes PC Glass Blocks.

WHEN YOU INSULATE WITH FOAMGLAS . . .

YOU INSULATE FOR GOOD!

FOR ADDIT'ONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

PITTSBURGH ® PC CORNING

FOAMGLAS INSULATION

Pittsburgh Corning Corporation
Room 476, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send me without obligation, your FREE booklets on the use of PC Foamglas insulation for:

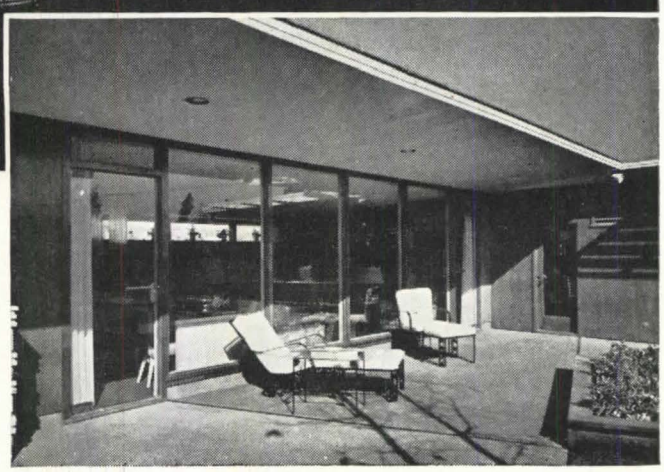
Roofs_____ Walls_____ Floors_____

Name_____

Address_____

City_____ State_____

Postwar house built by Fritz B. Burns. Wall of *Thermopane** unifies living room with terrace. Wide eaves control sunlight.



Living Room Goes Outdoors

United by a wall of glass, living room and terrace seem to be one big room.

This close relation between outdoors and indoors expresses the way American families want to live . . . in houses planned for all of the family's activities. Large areas of glass make rooms seem as "big as all outdoors". For example, the outdoor terrace above becomes an integral part of the living quarters.

When glazed with *Thermopane*, a wall of glass is more practical. This glass insulating unit keeps rooms warmer in winter and more comfortable the rest of the year. Actual use from Iceland to Mexico has proved *Thermopane*'s insulating efficiency in all climates.

Over 60 standard sizes of *Thermopane* units meet most architectural requirements . . . for Picture Windows, window walls, double-hung wood windows and residential steel casements. For data on sizes and installation, see your nearest L·O·F Glass Distributor. Write for our *Thermopane* books. Libbey·Owens·Ford Glass Company, 27107 Nicholas Building, Toledo 3, Ohio.

*Reg. U. S. Pat. Off.

ONLY LIBBEY·OWENS·FORD MAKES *Thermopane*

L O F

LIBBEY·OWENS·FORD
a Great Name in **GLASS**

TH IN A SERIES FEATURING DISPLAYS AT THE G-E LIGHTING INSTITUTE

4 steps to Modern Lighting

Here are four modern lighting designs . . . four new ways G-E Lamps may be used to combine beauty with the functional use of light. The scene is the stair leading from the registration center at General Electric's Lighting Institute at Nela Park, Cleveland.

1 A G-E Circline Lamp in a perforated metal diffuser combined with luminous panel above fits into architectural pattern.

2 Irregular shaped ceiling coffer containing G-E Fluorescent Lamps provide a change of pace, color for decoration and a mixture of light flattering to complexions.

3 A G-E Silverbowl Lamp in suspended fixture gives an accent in the pattern and additional light.

4 Decorative spots and stair illumination are the dual purpose of G-E Circline Lamps in perforated metal medallions on stair walls.

or all lighting urposes, specify G-E amps, so your clients et the benefit of the onstant research that orks to make G-E amps . . .

Stay Brighter Longer!

You are cordially invited to visit the General Electric Lighting Institute. You'll see the latest ideas in lighting and lamps for stores, offices, homes and schools.

G-E LAMPS

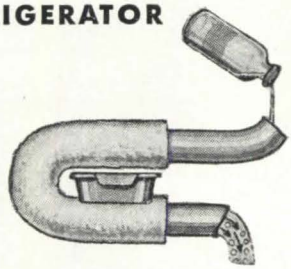
GENERAL ELECTRIC

SEE HOW THE FREEZES

LIQUIDS COOL ON EVAPORATION

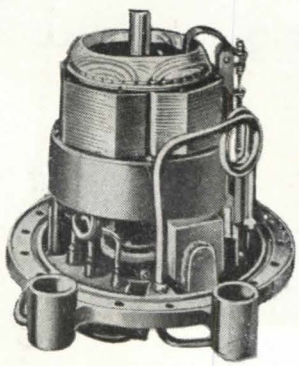
When you pour alcohol into the palm of your hand and blow on it, you know what happens. You experience a cooling sensation. That's because liquids remove heat from the surrounding area as they evaporate. You can prove it with a thermometer. This principle of cooling by evaporation is used by both gas and electric refrigerators. But there's a big difference in application. You'll see why the Gas Refrigerator's method is superior by studying the following illustrations.

SUPPOSE YOU MADE A SIMPLE REFRIGERATOR



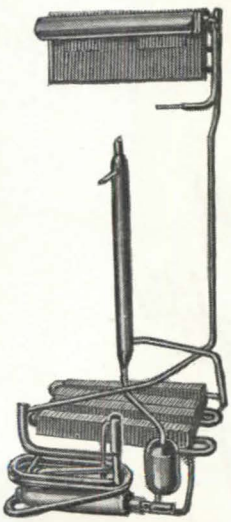
All that's necessary would be to pour continuous streams of ammonia (or any other refrigerant) and air through a bent metal tube. Evaporation will take place on the inside of the tube, causing the outside to cool. Thus, you have simple refrigeration. The evaporated ammonia goes off in vapor gas. However, in practical refrigeration, vapor gas cannot be allowed to escape and go to waste. It must be recovered and used again.

THERE ARE TWO WAYS OF CHANGING VAPOR BACK TO LIQUID FOR RE-USE



In an electrical refrigerator, the vapor is compressed back into liquid by the use of machinery. This machinery, or moving parts, includes a motor, a pump, valves, pistons, and a compressor.

But in the Gas Refrigerator, the vapor is changed back to a liquid by first being passed through water. The water absorbs the ammonia. The mixture is then boiled by a tiny gas flame. The ammonia is driven off in the form of hot ammonia vapor. Cooled by passing through pipes, it condenses again into a liquid. *This entire operation has been performed without the use of a single moving part.*



STAYS SILENT
LASTS LONGER
Serwel

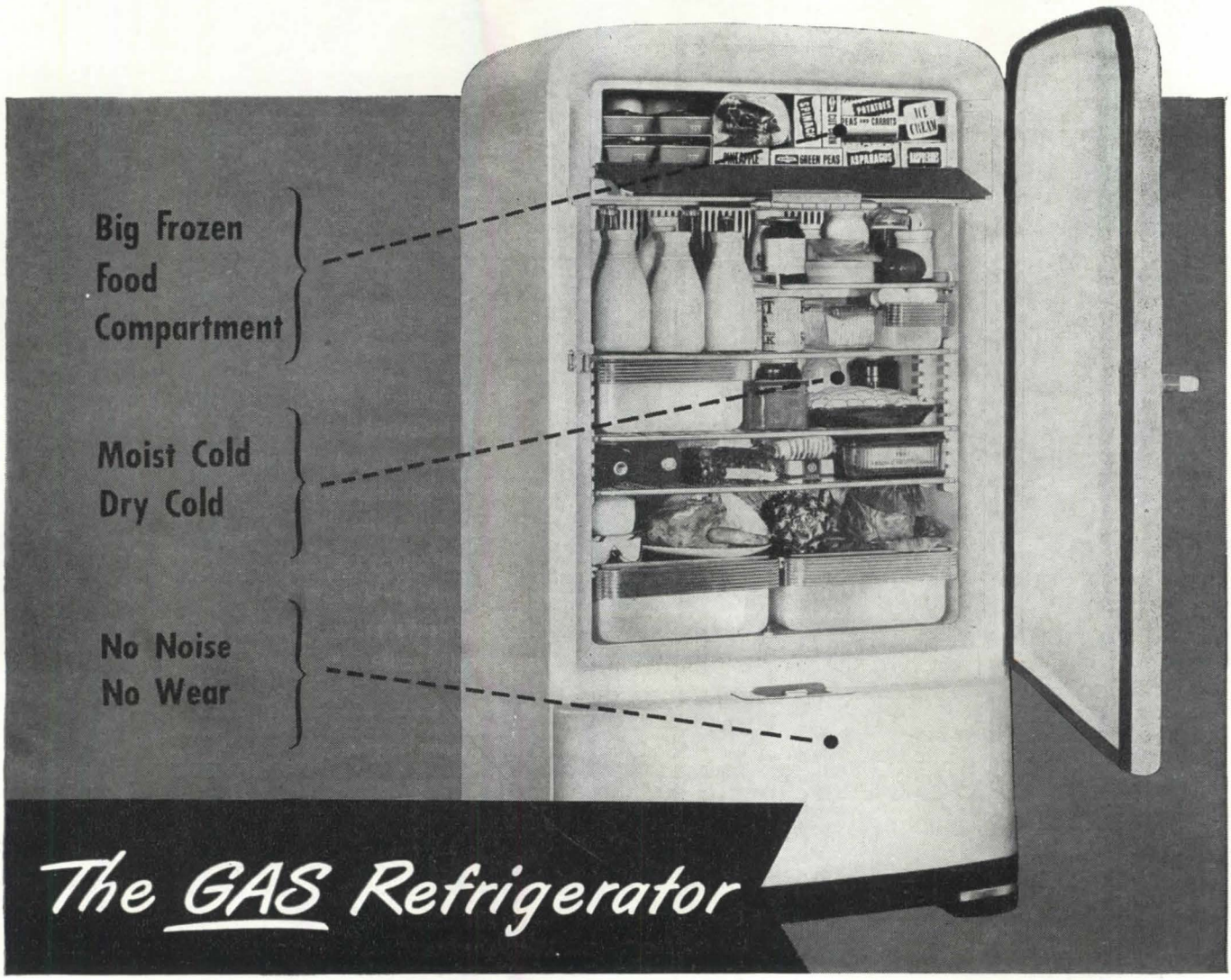
GAS REFRIGERATOR WITH NO MOVING PARTS

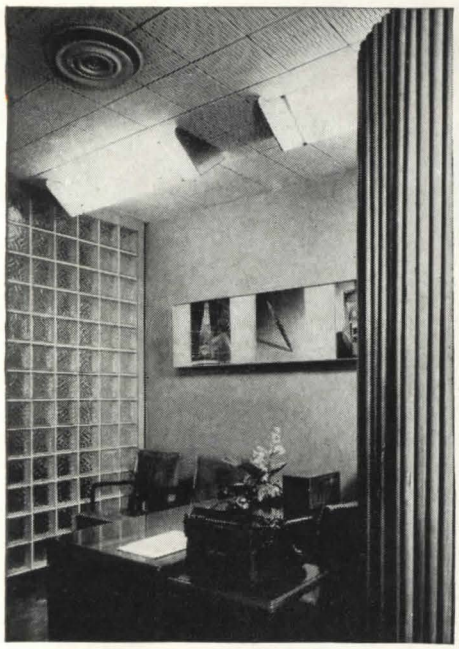
o You've heard many times that the Servel Gas Refrigerator has a simpler, basically different method of operation. Now you can *see* why Servel is different . . . why Servel can operate without making a sound and freeze without using a single moving part. The chart on the left tells the story.

Servel doesn't *need* a motor . . . pistons, pumps, valves, and compressors have no place in the Gas Refrigerator. There's nothing in the freezing system to make annoying sounds like the humming and clicking so prevalent among mechanical refrigerators. A tiny gas flame does all the work.

Today—amid the many noises of this modern mechanical world—people are seeking silence . . . especially for their homes. When the housing shortage becomes less acute, many prospective tenants and buyers will ask for homes that are noise-free. That's why more architects and builders are specifying Servel when they order new refrigerators.

There's another reason, too. Users profit from Servel's long life and year-after-year operation economy. And *you* profit from its lasting dependability and low overhead costs. Repair and replacement bills remain exceptionally low. For complete information, consult Sweet's catalog . . . or write to Servel, Inc., Evansville 20, Indiana.

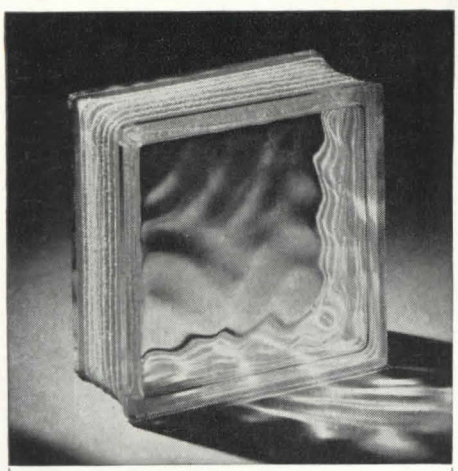




Insulux partition provides privacy in reception room of Walter Dorwin Teague's Los Angeles office—adds daylight and more spacious appearance.

→

Walter Dorwin Teague, eminent Industrial Designer's Los Angeles office utilizes Insulux Glass Block in a floor-to-ceiling partition to highlight office entrance.



OWENS-ILLINOIS

INSULUX

GLASS BLOCK

Insulux Glass Block is a functional building material, designed to do many things other materials cannot do. It is available in three sizes, many functional and attractive face patterns. Investigate!

Open the door to better lighting

LET outside light in, yet maintain business office privacy . . . that's one of the many problems architects are solving with Insulux Glass Block.

Ideally suited for residences, apartments and industrial buildings, Insulux Glass Block is easily installed. When construction is completed, panels are permanent, high in insulating qualities and easy to clean. There's nothing to rot, rust or corrode.

In keeping with modern design trends Insulux relieves dark and gloomy spots and allows a new flexibility and originality in planning.

For complete technical data, specifications and installation details, see the "Glass" Section of Sweet's Architectural Catalog, or write Dept. D-34, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.

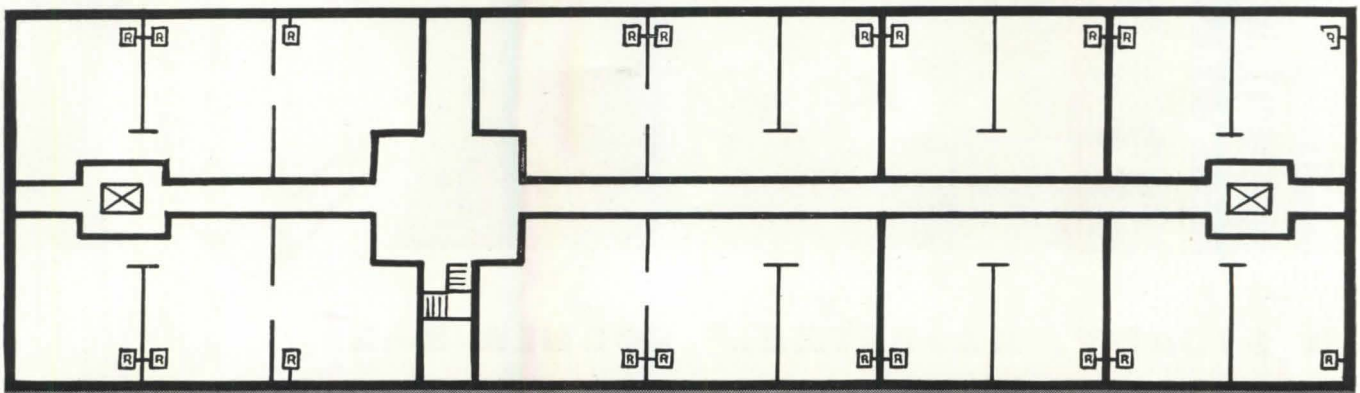
H & H

Multicoupler Antenna System

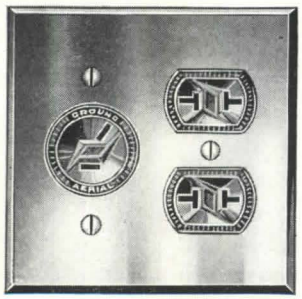
Improved ALL-WAVE

• Frequency Modulation (FM)

• Standard Broadcast • Short Wave



1 Aerial for Plurality of Radio Sets



No. 3120

2 Gang Unit

1 Radio and 2 Power Outlets Complete, — consisting of Two Gang Multicoupler Unit, 2 Gang Cover with Divider Plate, No. 1913 Duplex Convenience Outlet, No. 2149 Radio Outlet, GH Cap, Multicoupler, 2 Gang .040″ Brass Plate . . Use standard 4″ square box (not included).

No. 3124

1 Gang Unit

Radio Outlet Only

Complete,—consisting of Single Radio Outlet Multicoupler, No. 2149 Radio Outlet, GH Cap, Multicoupler, 1 Gang .040″ Brass Plate . . . Standard switch or outlet box can be used (box not included).

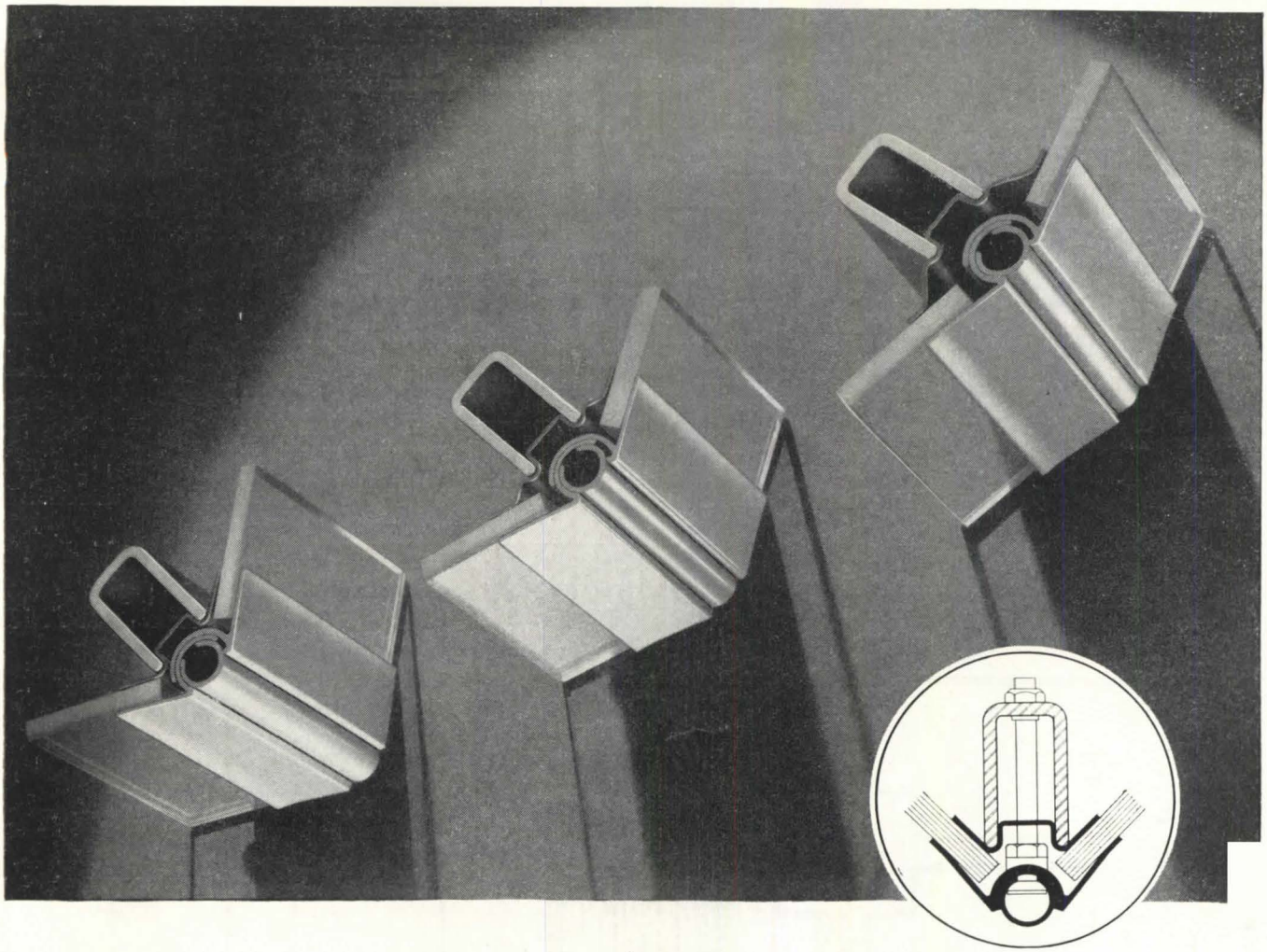
Up to 20 radio outlets may be serviced from *one* antenna where this multiple receiving system is installed. The system brings to each radio set complete "freedom of the air" in getting any desired broadcast, regardless of what programs other sets may be tuned to at the same time. It brings in FM, standard broadcast and short waves with maximum of volume and minimum interference.

Multicoupler-Antenna System is not only the *most adaptable* to the whole range of radio conditions; it's the least expensive and most easily installed of any multiple receiving system. For apartment houses, private homes or hotels, hospitals and dormitories, this system economically *completes* your up-to-date radio facilities.

DISTRIBUTED THROUGH ELECTRICAL WHOLESALERS

HART & HEGEMAN DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD 1, CONN., U.S.A.



A STURDY, ADJUSTABLE CORNER BAR

for use with both lines of Pittco Metal

● A popular member of the Pittco line of Store Front Metal is the versatile corner bar shown above (left to right) at 90, 135 and 150 degree angles. It was styled and finished to harmonize with the mouldings and sashes of both the De Luxe and Premier lines of Pittco Metal. It may be strengthened with five different reinforcing members ranging in weight from light to extra heavy. It is assembled at the factory to the desired angle, but, if necessary, it may be easily adjusted in the field to any angle from 90 to 175 degrees. All Pittco Bars provide a wide, firm grip on the glass, assuring easier setting and greater safety.

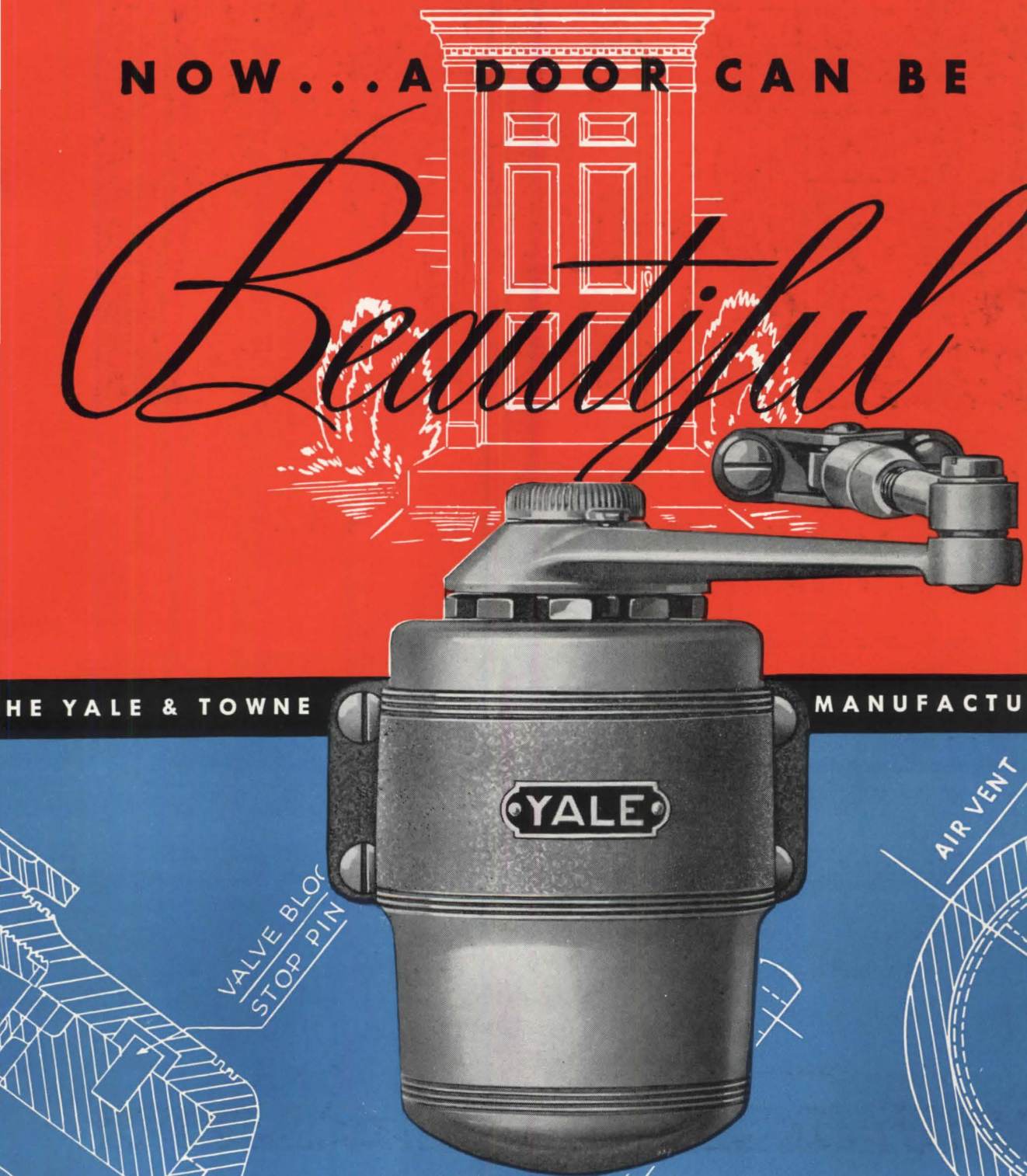
A high degree of engineering skill and artistic styling has gone into the creation of all the members of both Pittco Metal lines. Pittco De Luxe has a wide variety of bars, mouldings and sashes which will please architects and owners who demand the highest quality in their store front installations. Utmost rigidity, sharp outlines and a satin-smooth finish are assured in Pittco De Luxe by its extruded method of production. In Pittco Premier, architects have a lightweight, more moderately priced metal that will satisfy the demand for sales-winning store fronts combining style with economy.

PITTCO
STORE FRONT METAL

"PITTSBURGH" stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY

NOW...A DOOR CAN BE *Beautiful*

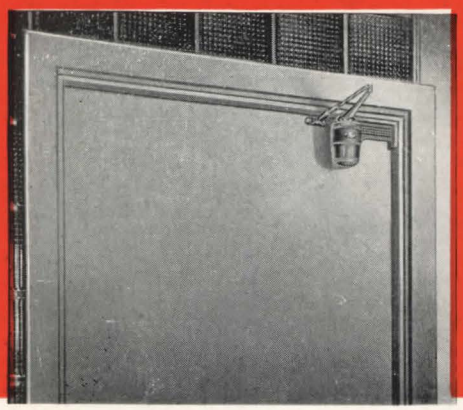


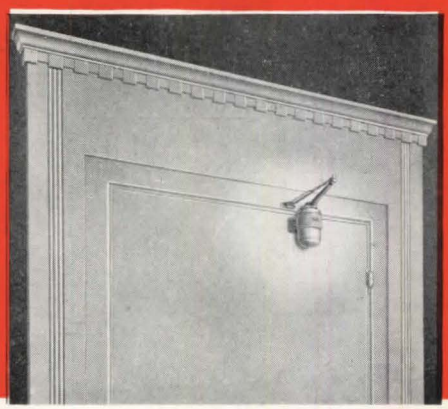
HE YALE & TOWNE MANUFACTURING CO.

THE DOORWAY OF THE FUTURE IS HERE TODAY!

Ugliness Disappears from the "Door Closer Corner"— Here is New Beauty with the Yale Compact Door Closer

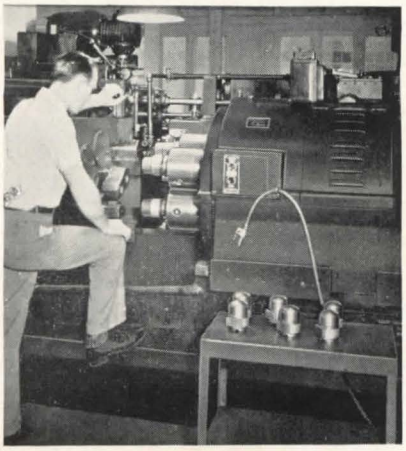
And Building Owners Will Find New Efficiency . . . Longer Door Closer Life!





NEW EQUIPMENT FOR MORE ACCURATE MANUFACTURING

In order to produce the many mechanical improvements which distinguish this new door closer, Yale & Towne employs the most modern kind of equipment in its foundry and door closer plant — new patterns, lathes, boring machines, automatic grinders, drill presses, gauges, etc.



Shown above is a multiple-spindle machine weighing 26,000 lbs. It produces pistons weighing only 2½ oz., seal-plates weighing 4 oz. — to extremely close tolerances.

NEW STANDARDS OF WORKMANSHIP MEAN BETTER DOOR CLOSING

These characteristics of Yale workmanship promise smoother action, much longer life:

A. Concentricity of all machining.

B. Two or more hair-line precision measurements on shaft, piston, valve block, seal-plate and cylinder.

C. Perfect finishing of these parts.

Shown above is an electro-magnetic limit gauge of the type used in making airplane engine parts.

TESTING PROVES VALUE OF IMPROVED DESIGNS

A million opening-and-closing cycles (a lifetime of normal use) — with a force applied sufficient to keep the closer hot — failed to disclose any weakness . . . no leakage and no structural defects.

Hundreds of practical applications in the field have already proved the perfection of the Yale Compact Door Closer.

HOLD-OPEN DEVICE

Positive holder device (optional at slightly higher price) keeps the door at any predetermined position until released by push or pull. Operates smoothly without danger of breakage and without strain on closer and butts. Hardened steel roller bearing in plunger rolls easily in and out of holding lug. Hold-open position easily adjusted.

SPECIFICATIONS

No.	*Types of Doors*	*Max. Size of Doors*
91	Ordinary screen doors Light interior doors	1⅛″ x 2′6″ x 6′6″
92	Heavy screen doors Light interior doors Closet doors	1⅜″ x 3′0″ x 7′0″ 1⅜″ x 2′8″ x 7′0″ 1¾″ x 2′8″ x 7′0″
93	Light exterior doors Corridor or office doors, either wood or metal	1¾″ x 2′6″ x 7′0″ 1¾″ x 3′4″ x 7′0″
94	Ordinary exterior doors Heavy interior doors, either wood or metal	2¼″ x 3′0″ x 7′6″ 2¼″ x 4′0″ x 7′6″
95	Heavy exterior doors Heavy interior doors subject to strong drafts	3″ x 3′6″ x 7′6″

Finishes: Standard finish is Brown Lacquer. Gold or Silver Bronze, Dead Black, or Prime Coat for painting, to special order at no extra charge. Plated and special sprayed finishes available at slightly higher prices.

Printed in U. S. A.

YALE COMPACT DOOR CLOSER

THE YALE & TOWNE MANUFACTURING COMPANY, Stamford, Conn.

Makers of the Famous Yale Line of Locks and Hardware

Q. *Is there an efficient and inexpensive method of insulating plumbing pipes in exterior walls to prevent freezing?*

A. *See Balsam-Wool Application Data Sheet Sec. C, No. 2.*

Q. *How can the proper louver size be established for use in gable walls to ventilate attic spaces?*

A. *See Balsam-Wool Application Data Sheets Sec. E, Nos. 1 and 2.*

Q. *What is the most practical method of insulating floor construction built above grade over an unexcavated area?*

A. *See Balsam-Wool Application Data Sheet Sec. C, No. 3.*

Get this File-Drawer "LIBRARY"

...Balsam-Wool Data Sheets

Years of experience in insulation application are "boiled down" in these factual, helpful Balsam-Wool Data Sheets. Packaged in an A.I.A. file folder, they form an authoritative source of information on application problems. Wood Conversion Company offers these data sheets without cost or obligation as a contribution to progress in providing better insulation for every type of dwelling. Mail the coupon for your set!

Balsam-Wool*

SEALED INSULATION

*REG. U. S. PAT. OFF.

BALSAM-WOOL • *Products of Weyerhaeuser* • NU-WOOD

Wood Conversion Company
Dept. 117-107 First National Bank Building
St. Paul 1, Minnesota

Please send me set of Balsam-Wool Application Data Sheets.

Name.....

Address.....

City.....*State*.....

A COMPANY IS KNOWN *by the customers it keeps!*

512 FIFTH AVENUE, NEW YORK
82 RUE d'HAUTEVILLE, PARIS

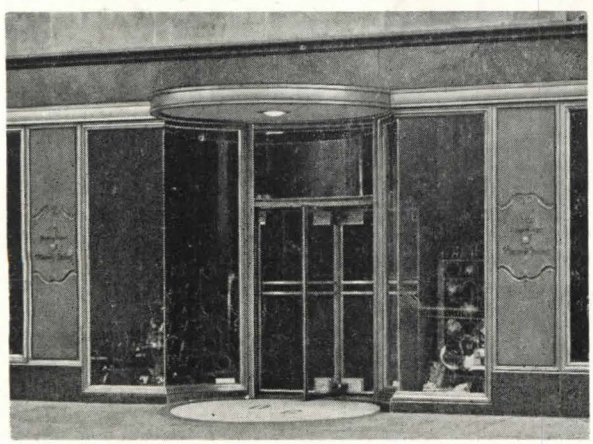
GENERAL OFFICES
205 SOUTH STATE STREET
CHICAGO

O'CONNOR & GOLDBERG
SHOES AND HOSIERY

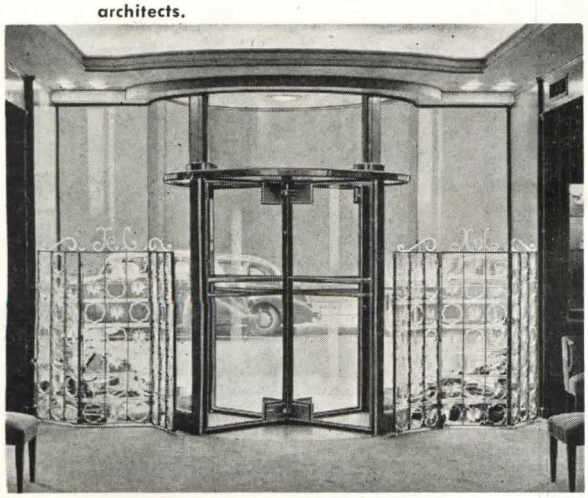
In the operation of our 14 O-G stores of Chicago we have found that revolving doors not only enhance the beauty of the store but are also highly practical in both hot and cold weather. We reached this conclusion after many years of experience.

Very truly yours,
O'CONNOR & GOLDBERG

The classic lines of this revolving door installation in the O'Connor & Goldberg store, Evanston, Illinois, eliminates traffic problems and lends inviting beauty to the building exterior.



The latest O'Connor & Goldberg revolving door as it looks from inside. Of all-glass design, it is floor supported and has minimum 2" cornice, traffic control and special ceiling lights. Maher & McGrew, architects.



29 YEARS OF PERFECT SERVICE

O'Connor & Goldberg, nationally known retailer of fine shoes, hosiery and accessories, installed its first revolving door in 1918. So well pleased were the store's executives with the additional space provided, the greater store comfort, increased operating economy, and reduced noise, dirt and drafts, that they decided to use revolving doors in all O'Connor & Goldberg stores . . . new and old alike. New doors were added in each of the years 1921, 1923, 1926, 1928 and 1929. Four were installed in 1941, one in 1942. The latest, shown at left, has been in operation in the Evanston store since 1946.

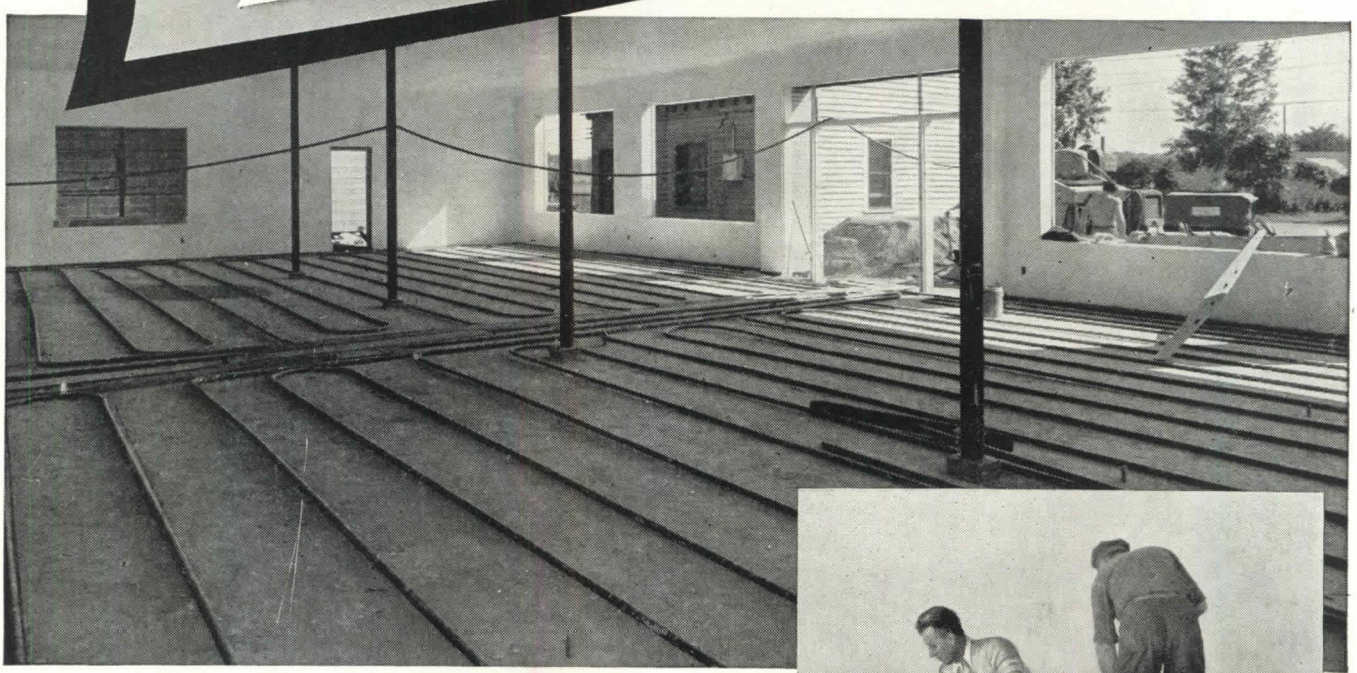
The experience of O'Connor & Goldberg is being duplicated in the nation's busiest and finest buildings everywhere. If yours is an entrance problem, you'll find the advantages of revolving doors by International unequalled by any other make or type of entrance. Complete details for the asking.

REVOLVING
INTERNATIONAL VAN KANNEL
DOORS

1537 EDGAR STREET EVANSVILLE 7, IND.

International Van Kannel Revolving Doors . . . Used in America's Finest Buildings

ZONOLITE* INSULATING CONCRETE IDEAL FOR GRADE LEVEL AND RADIANT-HEAT FLOORS



Radiant Heating Coils resting on Zonolite Insulating Concrete

Another new development for builders—FLOORS THAT INSULATE! By using Zonolite Insulating Concrete for grade level floors in commercial structures or homes, cold and dampness can be eliminated. Heat loss into ground will be avoided.

Zonolite Insulating Concrete floors are made by mixing a specially graded Zonolite brand of vermiculite with Portland cement. This insulating concrete can be placed directly on the ground (vapor seal often placed on ground first) forming a fireproof, rot proof, termite proof, vermin proof floor base.

When radiant heating is specified, these floors are particularly desirable as a base for the coils or ducts. After laying the coils on this highly efficient and permanent base, they should then be covered with ordinary concrete. Heat waste into the ground is greatly reduced and enables the room to heat faster.

Whenever a floor is constructed on grade level, regardless of whether or not it has radiant heat, Zonolite Insulating Concrete should be specified. Because of the low heat capacity of Zonolite Insulating Concrete, condensation on the floor surface on warm, humid summer days is avoided.

Covering coils with a topping of ordinary concrete

ZONOLITE CONCRETE FLOORS REDUCE DEAD LOAD IN HIGH BUILDINGS

Zonolite Insulating Concrete, when used as a fill over steel pan floors, reduces dead load. When used in this way, the fireproofness of the building is greatly increased as Zonolite is one of the most fireproof materials known. Zonolite Concrete aggregate weighs as little as six pounds per cubic foot.

Send now for complete information about Zonolite Concrete Floors.

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Please send complete details on Zonolite Insulating Concrete Floors.

Name.....

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City.....*Zone*.....*State*.....

Please check: ☐ Architect ☐ Engineer ☐ Draftsman ☐ Contractor

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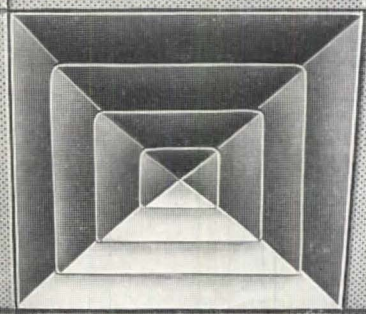
FLASH — AGITAIR TYPE R AIR DIFFUSER

NOW MADE IN STANDARD SIZES



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Resolve now to "be logical" on the next air diffuser specification—call for Agitair Type R.

Write today for Complete Data

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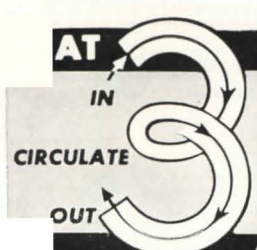
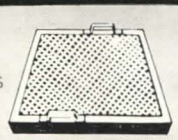


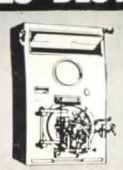
1 FILTERS



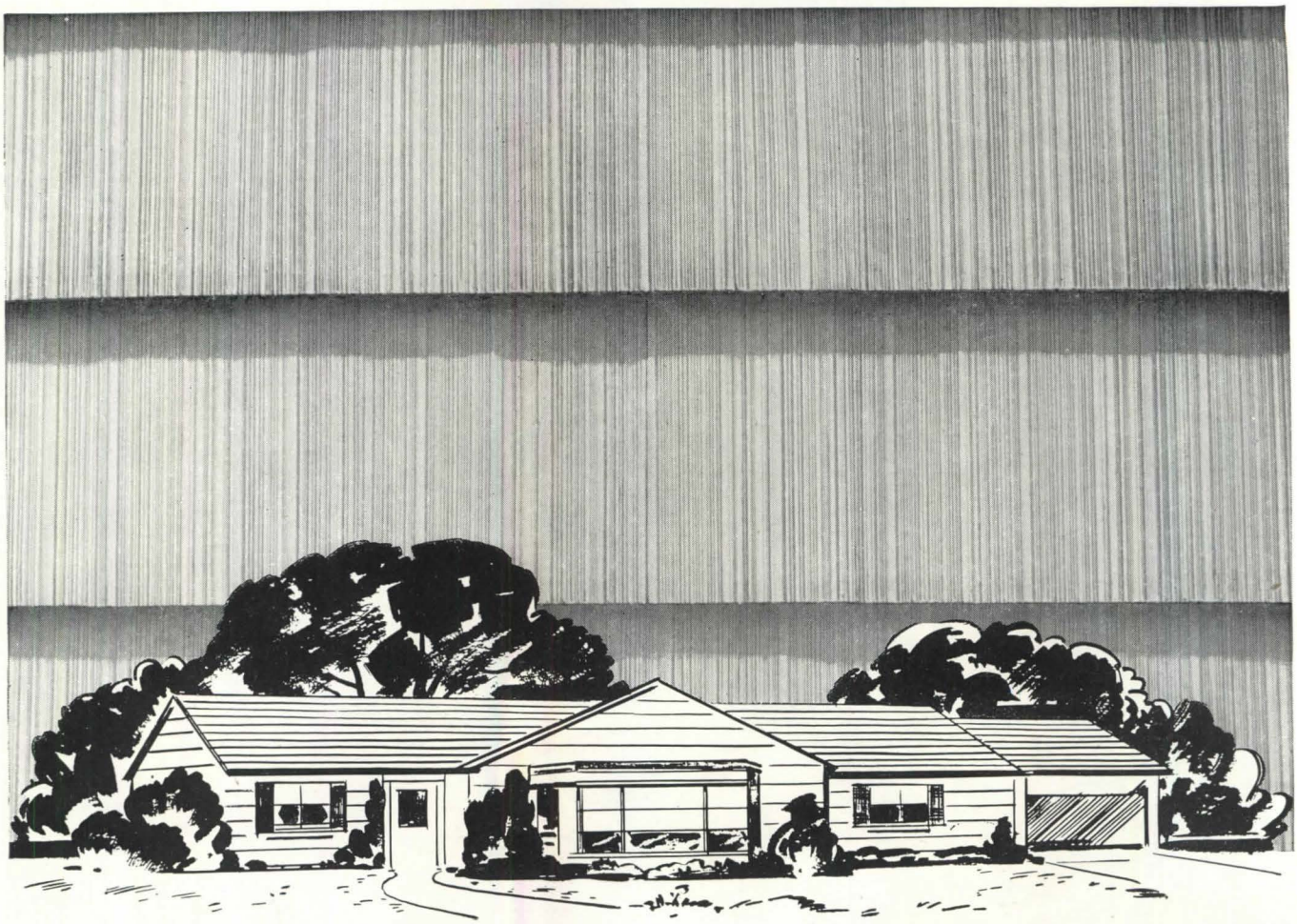
2 DIFFUSERS

3 EXHAUSTERS

DIRECT-FIRED HOT GAS GENERATING FURNACES



AIR DEVICES, INC. · 17 EAST 42nd STREET · NEW YORK 17, N. Y.



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The Red Cedar Shingle Bureau heartily endorses the dealer training schools being sponsored by the regional associations and the National Retail Lumber Dealers Association. Attend the school in your region!

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Specify *Certigrade* Shingles—for Your Protection

Fingertip Control

FOR THE LIGHTING THAT TELLS THE STORY

Subject . . . lighting plan . . . and control of light sources—are the three elements of dramatic lighting.

The first two are illustrated by these photographs of one plaster cast, each conveying a different message in response to varying lighting and arrangement.

The third element—control of light sources—is a matter which the architect can turn over to Ward Leonard's "result-engineering".

Consult Ward Leonard's section in your A.I.A. File*; then call in Ward Leonard engineers for recommendation of the proper equipment. Ward Leonard Electric Co., 22 South Street, Mount Vernon, New York. Offices in principal cities of U. S. and Canada.

CONTROL BY ELECTRONICS—You will be interested in recent Ward Leonard developments in Hysterset electronic control of reactance type dimmers, using small values of current and miniature control devices. Dimming and switching controls for an entire theatre are compacted into a small unit for control by one person.

**Your A.I.A. File should contain Bulletins 71 on Non-Interlocking Dimmers, 72 on Interlocking Dimmers, 74 on Reactance Dimmers, 76 on Autrastat Dimmers, 78 on Cycle Dimmers.*

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FORMICA KITCHEN CABINET TOPS

CHOSEN BY NEW YORK LIFE INSURANCE CO. FOR STANWORTH AT PRINCETON

THE first housing development of the New York Life Insurance Company, Stanworth at Princeton, New Jersey, is nearing completion, and many of the garden-type apartments have already been rented and occupied. In this carefully planned and competently engineered project it is significant that Formica kitchen cabinet tops were used.

Formica gives kitchen cabinet tops a new high in decorative value. The most popular finishes are plain black, pearlescent and line patterns. These latter are available in attractive pastel tints. They may be chosen to harmonize with the decorative scheme of the kitchen as a whole.

Formica does not chip, crack, or break, and is not injured by alcohol, fruit acids, or the alkalies that are ordinarily used in the home.

THE FORMICA INSULATION COMPANY • 4613 SPRING GROVE AVENUE, CU

So far Formica tops have been installed in 153 units of Stanworth at Princeton, specified by Architect Holden McLaughlin, with the approval of Chief Architect Gurney of the New York Life Insurance Company. The tops were furnished by the Kitchen Sales Company of New York. The General Contractor was William L. Crowe, New York.

FORMICA

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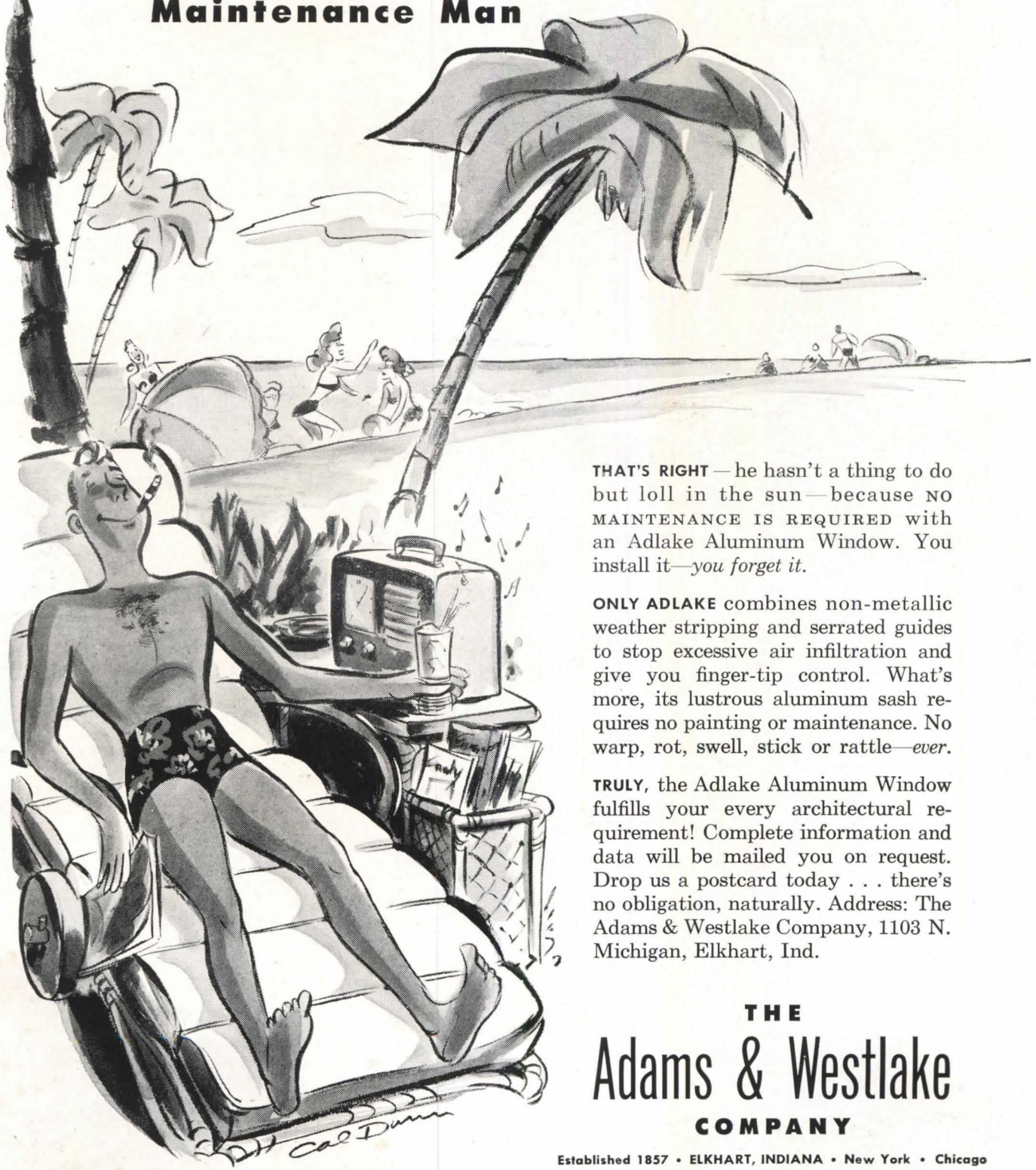
Meet the Adlake Window Maintenance Man



THAT'S RIGHT—he hasn't a thing to do but loll in the sun—because NO MAINTENANCE IS REQUIRED with an Adlake Aluminum Window. You install it—*you forget it.*

ONLY ADLAKE combines non-metallic weather stripping and serrated guides to stop excessive air infiltration and give you finger-tip control. What's more, its lustrous aluminum sash requires no painting or maintenance. No warp, rot, swell, stick or rattle—*ever.*

TRULY, the Adlake Aluminum Window fulfills your every architectural requirement! Complete information and data will be mailed you on request. Drop us a postcard today . . . there's no obligation, naturally. Address: The Adams & Westlake Company, 1103 N. Michigan, Elkhart, Ind.

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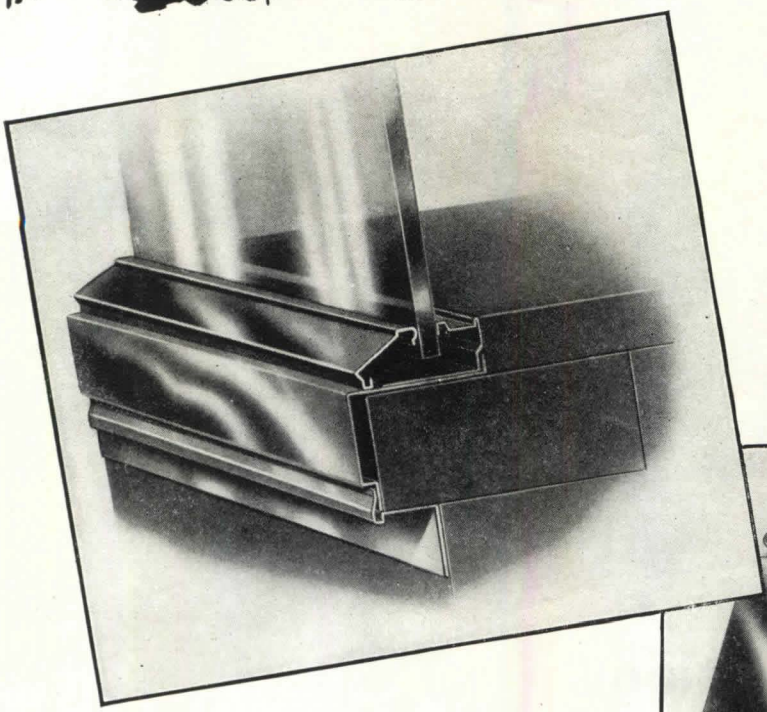
Entirely NEW

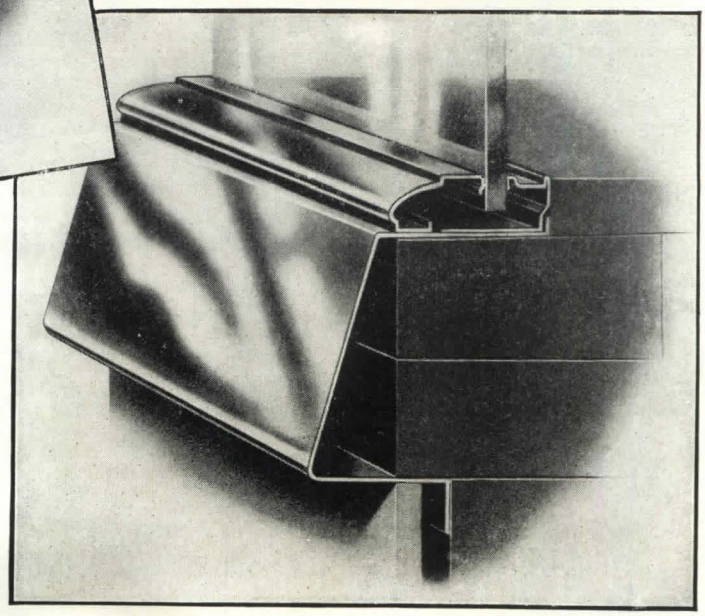
BRASCO'S

Complete

ARCHITECTURAL METAL SETTING

for Advanced Store Front Design





ILLUSTRATED are two of many attractive sash and sill combinations possible with our new construction. Every structural and decorative metal part is provided in both stainless steel and anodized aluminum, for full visibility fronts of character and distinction:

Five sash members, all new, including one rolled in the heaviest gauge now obtainable... lowered sash height, exposing largest glass expanse... heavy-duty bars for heightened areas . . . stronger steel reinforcement... heavier gauges in all sections . . . and FINGERTIP SETTING—exclusive with Brasco (patent applied for)—a new and unique device for holding plate glass firmly and safely, without pressure *and without set screws.*

Our new line is now available in addition to present Brasco Construction. Full size details sent immediately on request.

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Brasco MODERN STORE FRONTS

BRASCO MANUFACTURING CO.

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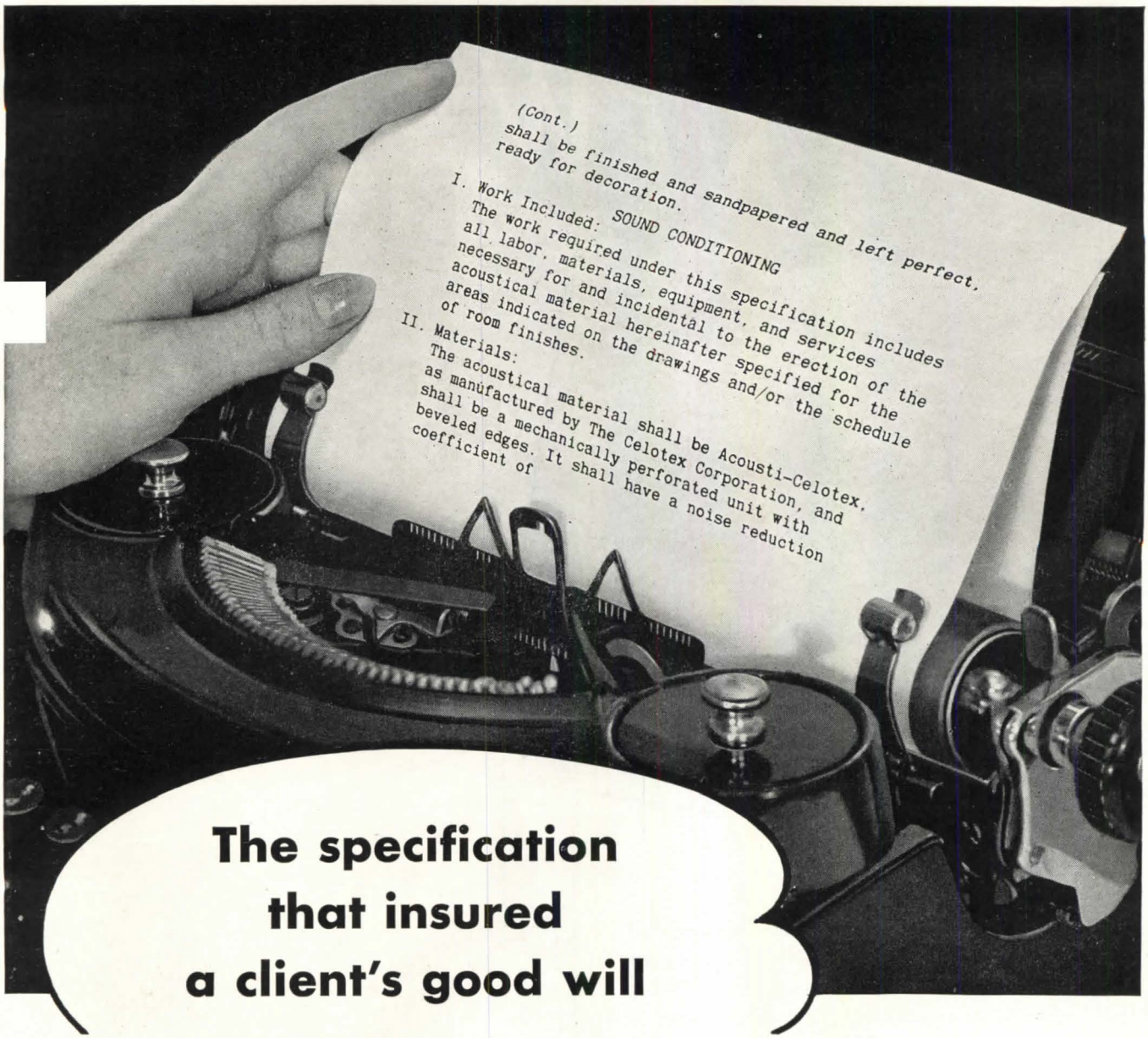
National Distribution Assures Effective Installation



The specification that insured a client's good will

The specification affected only slightly the total cost of the structure. Yet it had a tremendous effect on the client's satisfaction. For where freedom from distracting, nerve-straining noises is important to human comfort and efficiency, no interior can be fully acceptable without suitable sound conditioning.

Yes, even when costs must be cut to the bone, specifying sound conditioning is good counsel—and effective insurance of your client's good will.

When planning a building in which an atmosphere of quiet comfort is wanted, remember this—more sound conditioning has been done with Acousti-Celotex* than with any other material. That is significant evidence of Acousti-Celotex superiority.

The Celotex Corporation line of acoustical materials is complete and up-to-date, as pictured and described in your Sweet's Catalog. For the latest data on availability of any Acousti-Celotex materials in the quantities your specifications may require, consult the local Acousti-Celotex distributor. Or address your question to The Celotex Corp., Dept. PA4710, Chicago 3, Ill.

Sound Conditioning with

ACOUSTI-CELOTEX

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* *Perforated* *Fibre Tile* SINCE 1923

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Best for Radiant Panel Heating

. . . AS WELL AS FOR RADIATORS, CONVECTORS AND RADIANT BASEBOARDS

Radiant heating has taken a firm grip on the interest of both home and industrial builders. More freedom in planning room arrangements—more comfort at lower air temperatures—greater cleanliness—lower operating cost . . . these are a few of the reasons people are asking questions about this *completely concealed* heating.

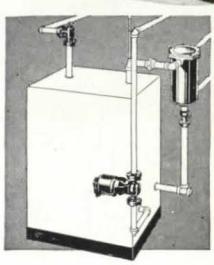
Successful radiant panel heating depends upon the use of comparatively large heating surfaces at *low temperatures!* What other heating method can satisfy these requirements as easily, accurately and economically as B&G *Hydro-Flo* Heat—*a forced hot water system?*

The simple, dependable equipment of a B&G *Hydro-Flo* Heating System positively controls the flow of water through the panels. It smoothly varies the water temperature to meet changes in the weather so that room temperature is maintained constantly at the comfort level. The system circulates water at any level, either above or below the boiler.

Year 'round hot water an added feature

The B&G *Hydro-Flo* Heating System provides an all year 'round supply of low-cost hot water for every household use. Remember that automatic clothes washers, dish washers and showers call for liberal quantities of hot water . . . that's why the economy of B&G water heating is a big selling feature! No separate heater needed—the same boiler that heats the house also heats the water for kitchen, laundry and bath.

If you haven't complete information on B&G *Hydro-Flo* Heating Systems, write today.



B&G *Hydro-Flo* Heating equipment can be installed on any hot water heating boiler.

*Hydro-Flo** HEAT

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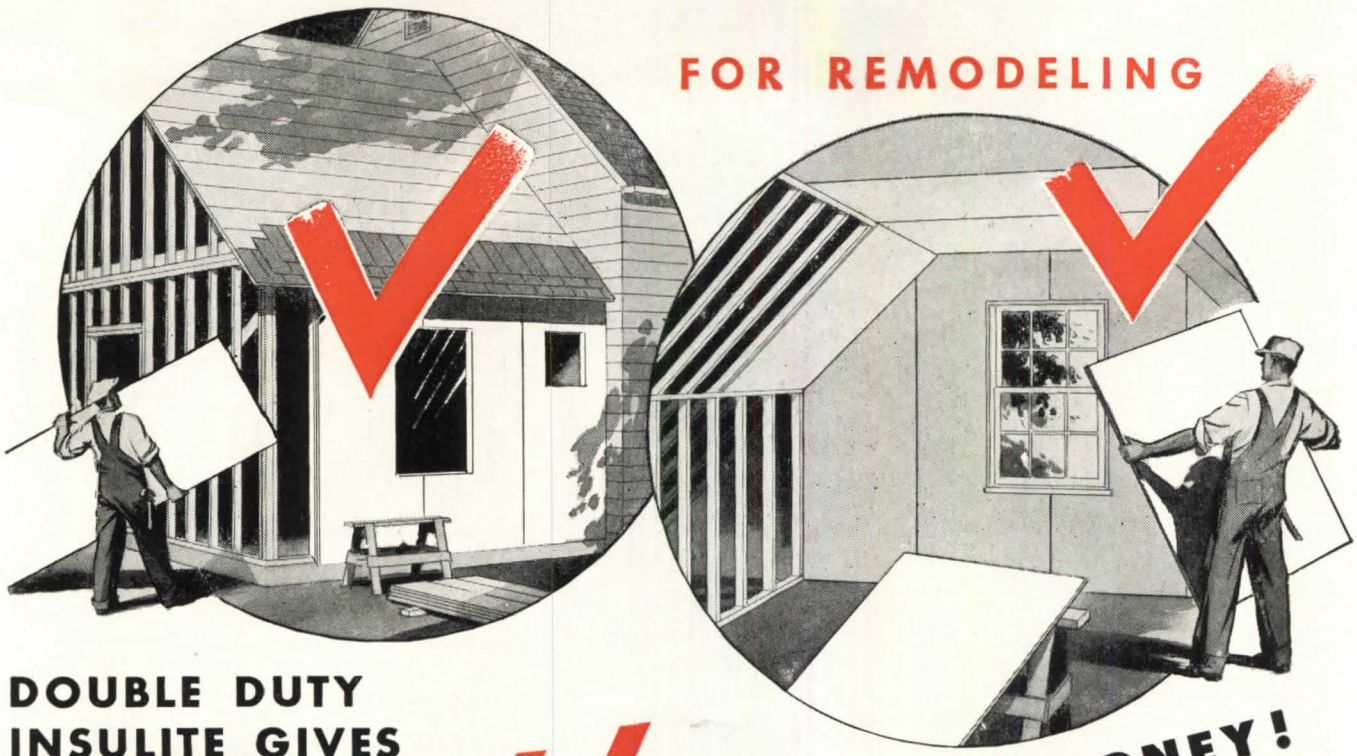

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DOUBLE DUTY
INSULITE GIVES

Double FOR THE MONEY!

Look at it this way:

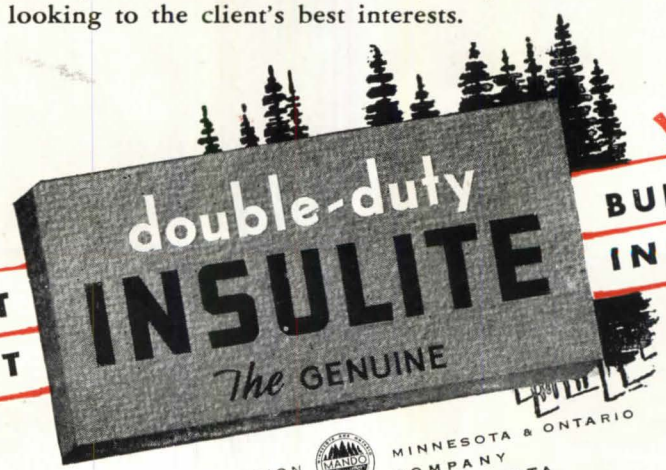
Most remodeling jobs need new walls and ceilings. Walls and ceilings need insulation. Therefore why not use a material that gives you *both* for the cost of one? Double-duty INSULITE performs a double service:

(1st) *It Incloses* (2nd) *It Insulates*

One material — double usage. An ideal material for additions to old structures or modernizing all types of old buildings. The large boards are easy to saw and fit. They go up fast but they hold the cost down. And they *insulate* as they build. That's double for anyone's money. More satisfied clients, more repeat business for you, and a reputation for looking to the client's best interests.

Refer to Sweet's File,
Architectural Section 10 a/9

INSULATES AS IT
BUILDS AS IT



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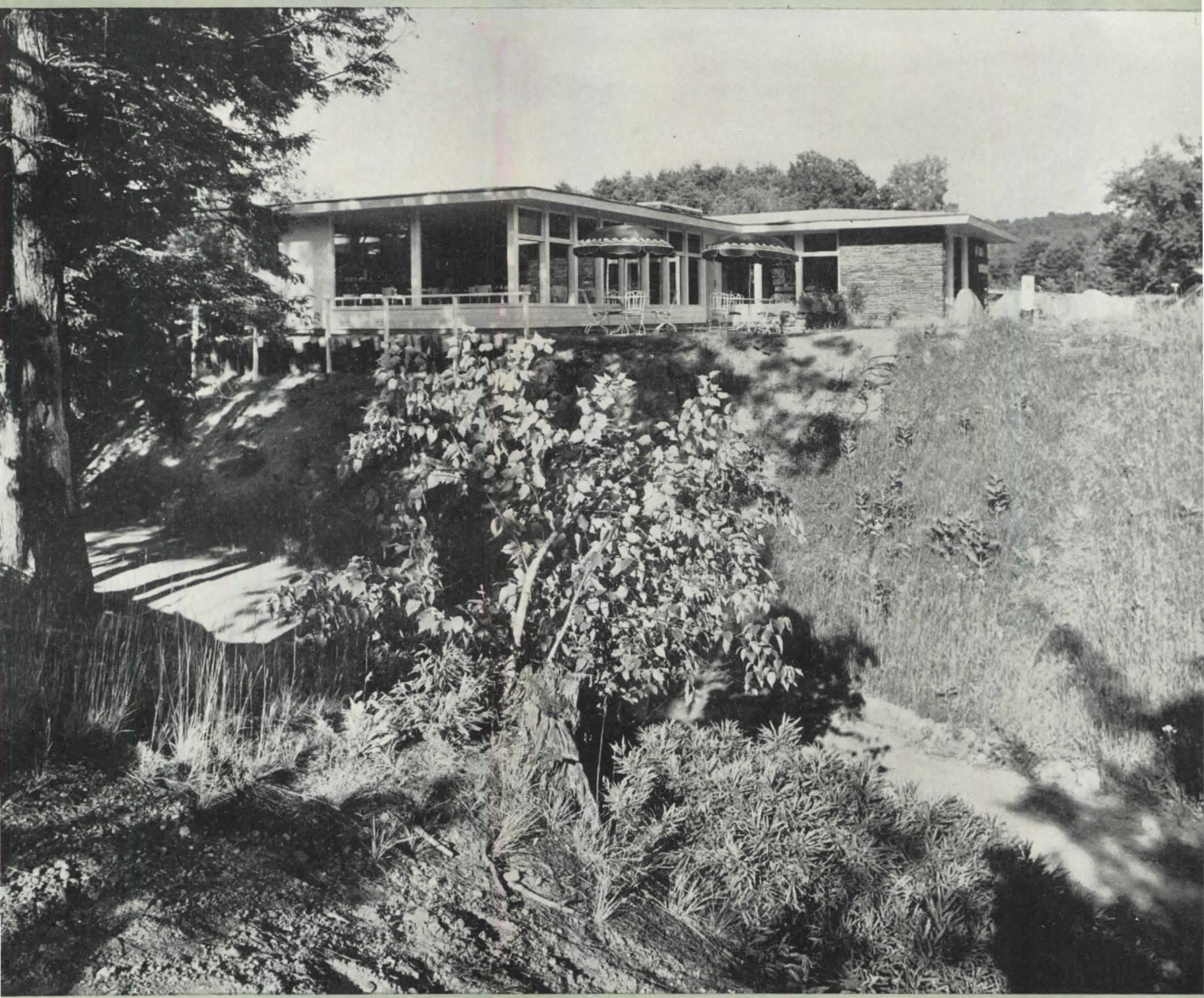
A PROGRESSIVE ARCHITECTURE AWARD WINNER

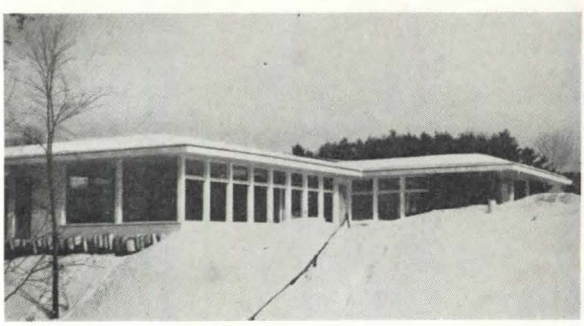


1. IN SUMMER, the generous glass areas are shaded by the four-foot roof overhang.

Richard Garrison Photos

DEWEY SHOWROOM AND RESTAURANT, QUECHEE, VERMONT

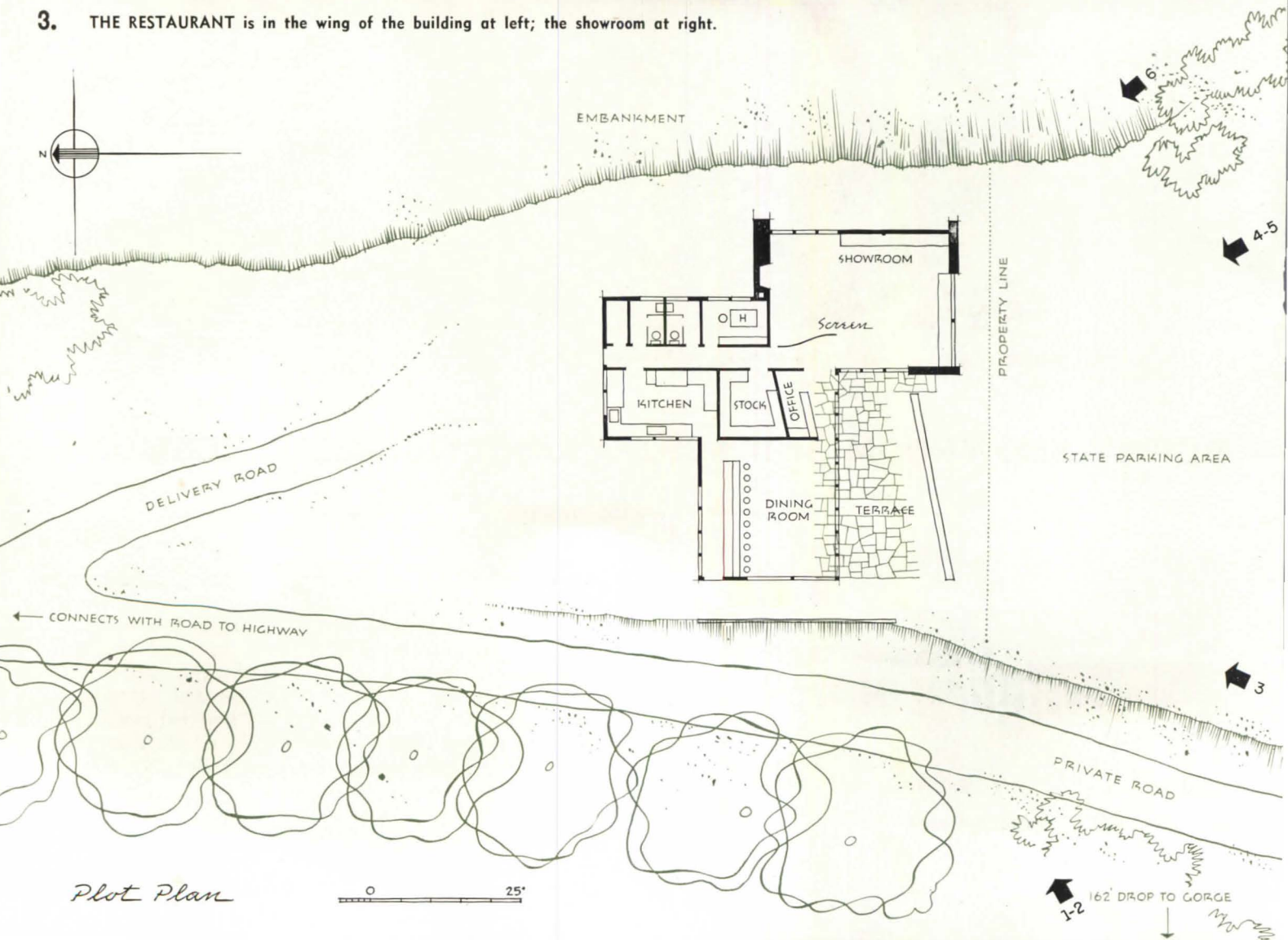
E. H. & M. K. HUNTER, Architects



2. WINTER VIEW of shop from sunken road.

A winner of one of the first annual PROGRESSIVE ARCHITECTURE Awards, for non-residential work completed in 1946 that best exemplifies sound progress in design, this roadside structure was praised by the award jury for its "wonderful contrast to the usual commercial venture when located outside a shopping area" as well as for its general architectural excellence. Photographs submitted to the award jury were made in winter by Pati & Bob Meservey, including the one at left chosen for the award announcement in our June issue.

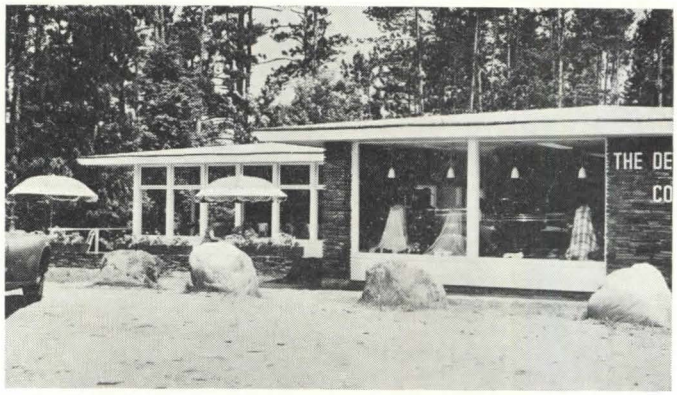
3. THE RESTAURANT is in the wing of the building at left; the showroom at right.



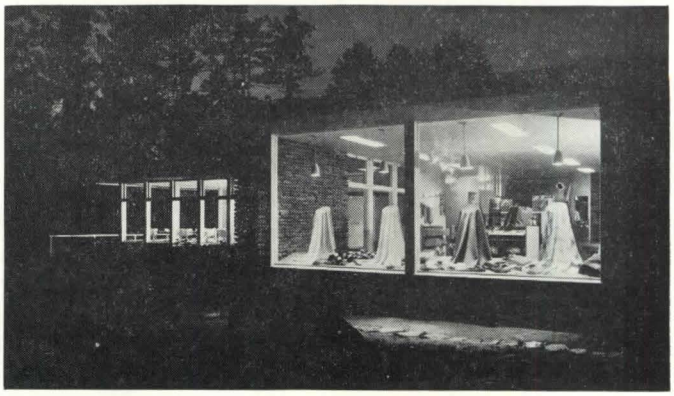
SHOWROOM-RESTAURANT
QUECHEE, VERMONT

E. H. & M. K. HUNTER, Architects

Actually an adjunct to the A. G. Dewey Company's mill, one of the few rural woolen mills remaining in the region, this combined-use structure serves The Dewey Corporation, which was organized to retail the mill's products and to conduct a mail-order business. As there is no good eating place within miles, in either direction on the state highway, it was felt that the addition of a restaurant would augment, as well as supplement, the merchandising activities. The highway site is adjacent to a scenic park featuring the 165-foot-deep, rocky Quechee Gorge.

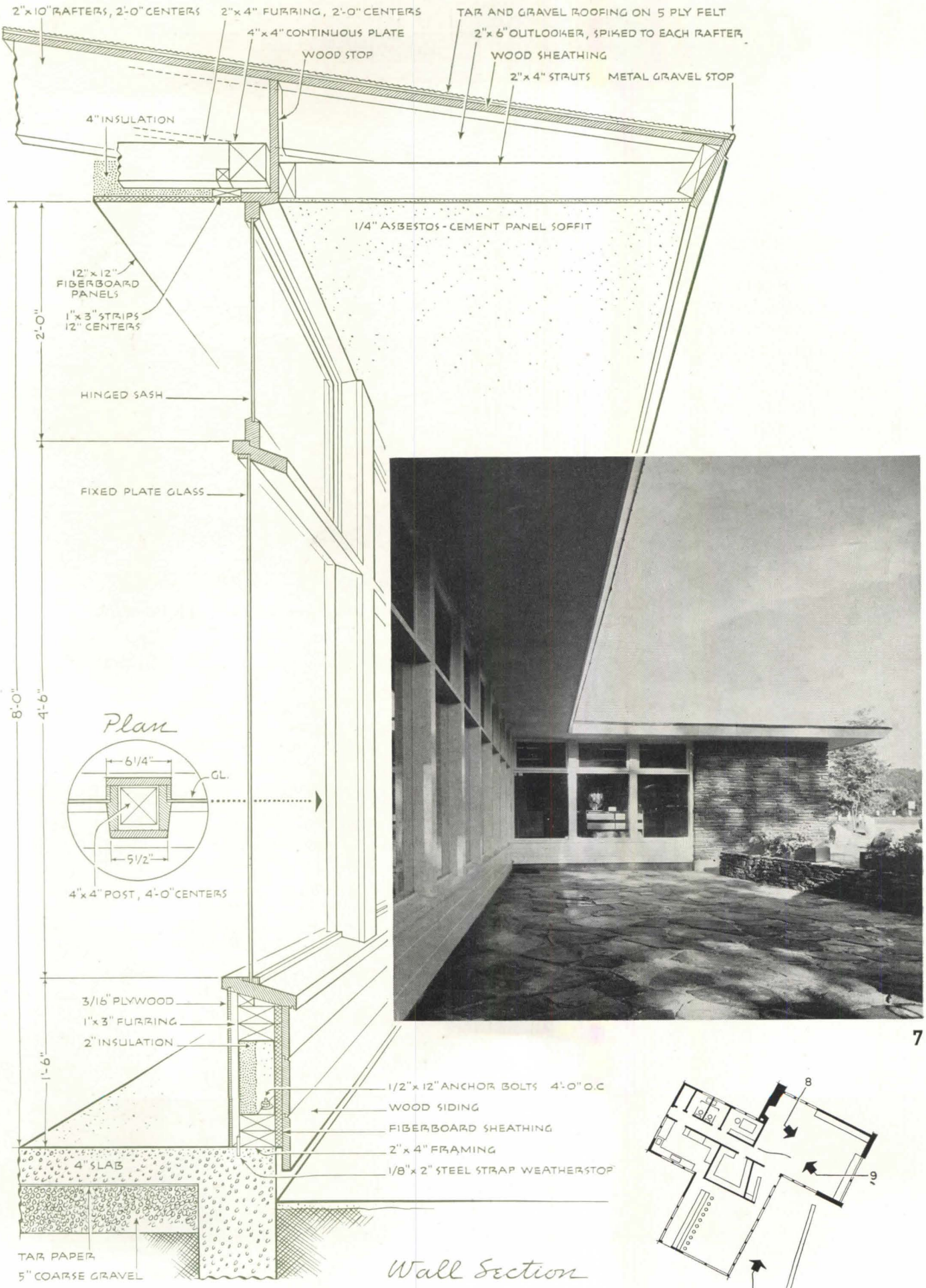


4. DISPLAY WINDOWS of the shop face the parking area.



5. AT NIGHT, the openness of the building is dramatized.

6. TOWARD THE EAST the ground drops off sharply into a ravine.


2"x10" RAFTERS, 2'-0" CENTERS
2"x4" FURRING, 2'-0" CENTERS
4"x4" CONTINUOUS PLATE
WOOD STOP
TAR AND GRAVEL ROOFING ON 5 PLY FELT
2"x6" OUTLOOKER, SPIKED TO EACH RAFTER
WOOD SHEATHING
2"x4" STRUTS
METAL GRAVEL STOP
4" INSULATION
1/4" ASBESTOS-CEMENT PANEL SOFFIT
12"x12" FIBERBOARD PANELS
1"x3" STRIPS 12" CENTERS
2'-0"
HINGED SASH
FIXED PLATE GLASS
8'-0"
4'-6"
Plan
6 1/4"
GL.
5 1/2"
4"x4" POST, 4'-0" CENTERS
3/16" PLYWOOD
1"x3" FURRING
2" INSULATION
1'-6"
1/2"x12" ANCHOR BOLTS 4'-0" O.C
WOOD SIDING
FIBERBOARD SHEATHING
2"x4" FRAMING
1/8"x2" STEEL STRAP WEATHERSTOP
4" SLAB
TAR PAPER
5" COARSE GRAVEL
Wall Section

7

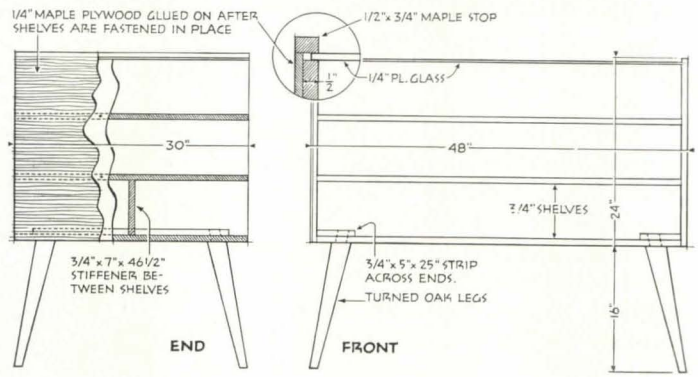
8
9
7

8. SHOWROOM TOWARD HIGHWAY. All cabinet work was designed by the architects, built on the job.

SHOWROOM-RESTAURANT

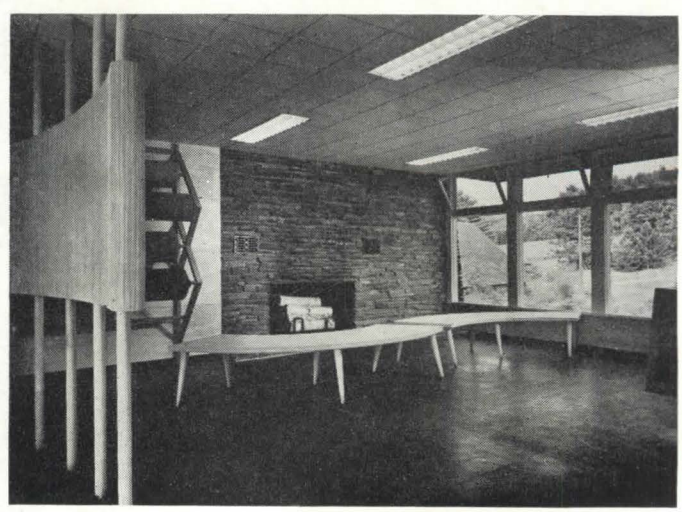
QUECHEE, VERMONT

E. H. & M. K. HUNTER, Architects



Showcase Detail

The plan and structure are developed on a 4-foot module. Posts are 4″x4″ and 8′-0″ high, to achieve an intimate, residential scale. Glass areas extend uninterrupted to the ceiling-soffit level. Floors are asphalt tile over a 4-inch concrete slab laid on five inches of gravel. All sash are native white pine, milled to detail. Acoustical tile was used to finish the ceiling and batt-type insulation was used for walls and ceiling. Stone from nearby walls, lumber from the site, and interior maple plywood from a local mill all went into this unusual building. The openness of the structure reveals the interior to passing motorists and uses sun heat in winter to such an extent that the oil burner which heats radiant coils in the concrete slab normally runs only one hour in twenty-four.



9. SHOWROOM FIREPLACE suggests winter hospitality.

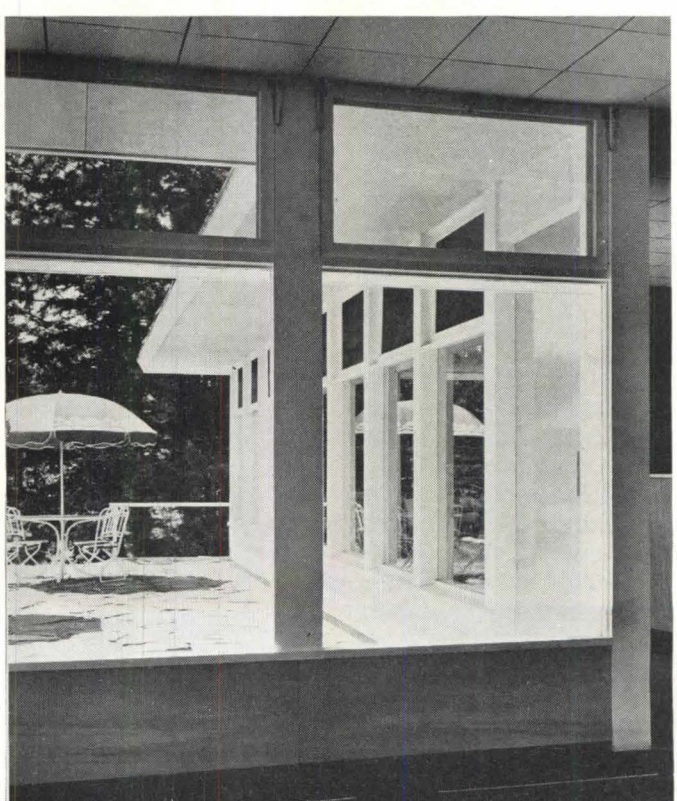
10. PINE TREES screen the restaurant on the west.

11. TRANSOMS above the bar complete cross ventilation.

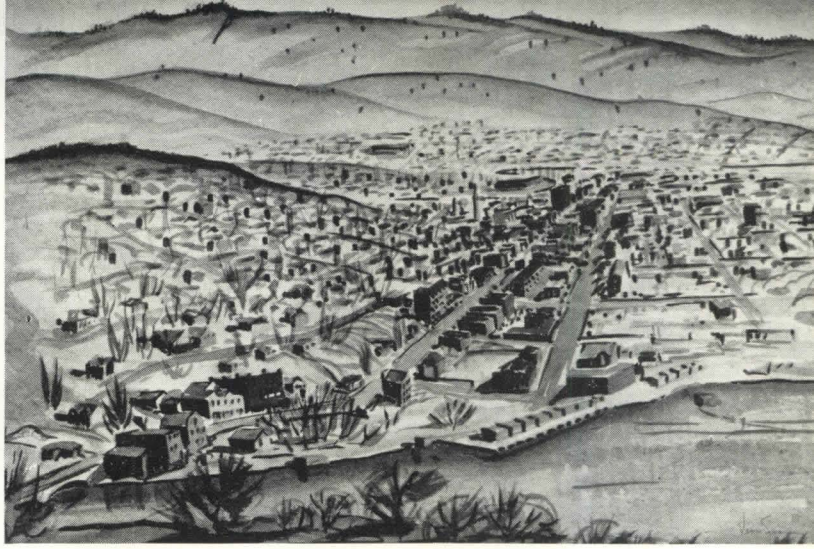
DEWEY SHOWROOM AND RESTAURANT, QUECHEE, VERMONT

E. H. & M. K. HUNTER, Architects

The entrance to the building is so placed that the showroom and the restaurant, with its dining terrace, are equally and independently accessible. Service deliveries all come to the building at the rear, by a service road branching from the sunken private road to the west of the building. Thus, operation of the shop and restaurant is adroitly separated from the public use of the building, which is entirely from the parking area at the front.



12. LOOKING FROM THE SHOWROOM to the paved dining terrace and the restaurant wing. The dual purpose of the building is clear.



KLAMATH FALLS, Oregon, as interpreted by L. R. Swansen, of Sheldon Brumbaugh's office. Says Brumbaugh: "Klamath County still has some of the swing of a lariat."

THE ARCHITECT AND HIS COMMUNITY

A case study: Sheldon Brumbaugh, Architect, Klamath Falls, Oregon

There are many kinds of architecture in our day, resulting from many degrees of ability and many types of practice. There is the architecture of genius, which influences the work of all lesser men and may result in few, widely scattered, highly publicized commissions. There is the architecture of the large business office, which may be of uneven, often excellent quality—the work of an efficient machine, answering industrial, commercial, and institutional needs from many sources. There is the architecture of opportunism, the result of a practice which is secure only because of "contacts"—political, family, social. Finally, there is the architecture of democracy —design which springs reasonably and inevitably from the common everyday needs of a community. An architect who roots his practice in the lives of the people among whom he lives has an opportunity denied to all others. Depending on his abilities, he may produce great architecture or ordinary architecture; he cannot produce unimportant architecture.

The editors of PROGRESSIVE ARCHITECTURE have seen this fact demonstrated over and over again. The following pages present a case history of one architect in one community. Sheldon Brumbaugh, after working in several large metropolitan offices, decided that that sort of practice was not for him. During the depression he established himself in the small town of McCook, Nebraska, and had sufficient work to keep going while many of us in the big cities sold apples. That experience convinced him that a small town could support a good architect who approached his practice sympathetically and intelligently. Several years ago he decided that Klamath County, Oregon (an area with 45,000 population), appealed to him as a place to live and a place to work. His home and office are in the town of Klamath Falls, among people whom he likes and understands. "They are of North European descent, and I talk their language." The town has been described as "having dilapidation without antiquity."

Brumbaugh feels that in his community and in the county he has a responsibility to "do a complete job of architecture: community planning, all types of industrial, commercial, and institutional buildings, and of course houses." He and his associates hope to do outstanding work in individual instances, but their main interest is in the over-all service to the region rather than the particular job. "We hope," he says, "that our jobs not only relate to each other, but to the region as a whole."

That's a big order, and how well Brumbaugh's office is succeeding can be judged by the reader for himself from the work illustrated in the succeeding pages (see also the Klamath Falls County and City Jail, PROGRESSIVE ARCHITECTURE, June 1947, p. 73). The editors were so impressed with the product of this approach to architectural practice that they asked Sheldon Brumbaugh to put down on paper a simple statement of his beliefs and his experiences as a guide to others. There are many other towns the size of Klamath Falls in the United States, where other architects could establish themselves as he has done in his Oregon community. The ability is needed; also required are an understanding of the region, the town, and the people, and, most important, a realization that architecture is more than merely a business.

SMALL-TOWN ARCHITECTURE

By Sheldon Brumbaugh, Architect

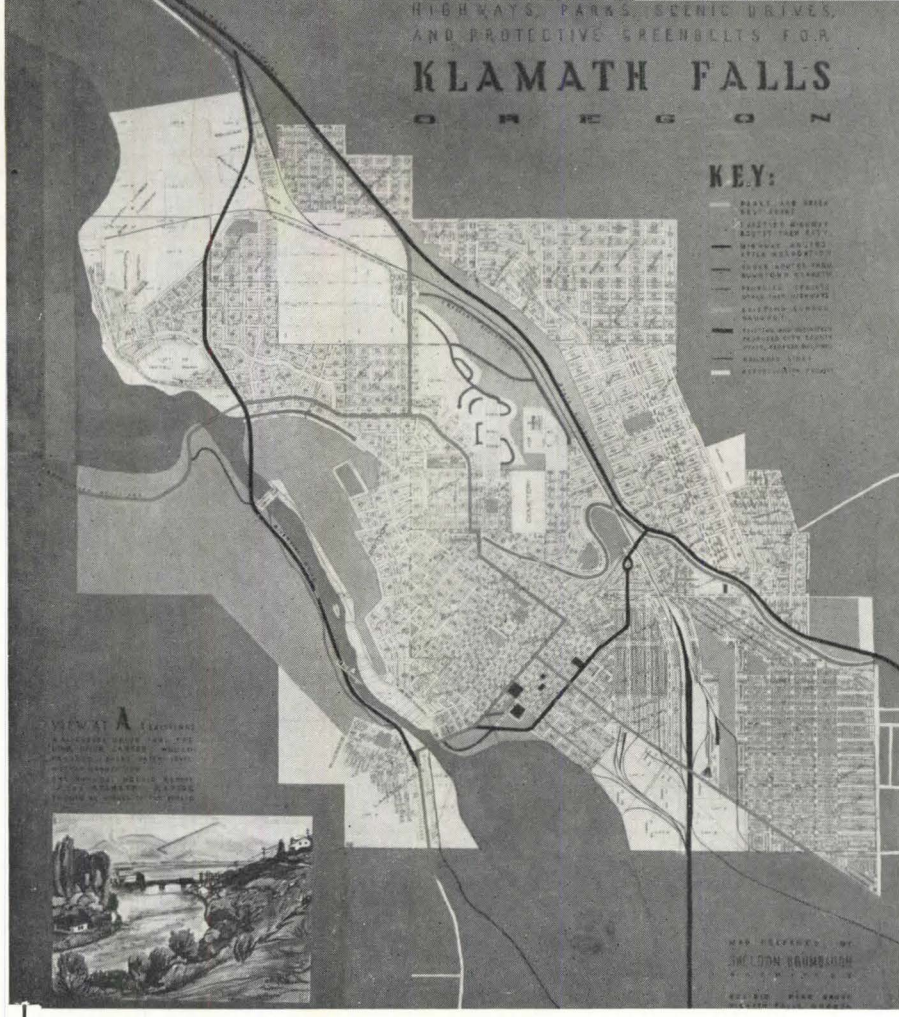
The architect who wants to practice architecture in a comprehensive way, which will include building design, town planning, and landscape design will find that there are hundreds of communities ranging in size from 5,000 to 25,000 inhabitants in urgent need of leadership in planning. The conditions in many small communities at the present time are particularly favorable for a young architect to secure a firm foothold.

The most serious problem in the architectural profession today is the great gap between the architect and society. In place of being integral members of the social structure, guiding form development from its most humble phases through building design to town and site planning, too many architects today are orphans in society. Fragmentary training, obsolete professional barriers, too much departmentalization in our schools, lack of adaptability, all contribute their share to the impotence of the architects in determining form in our environment. In the present decrepit condition of the profession, 10,000 people are supposed to be required to support an architect. To support a so-called exclusive practice (rejecting commissions that do not appeal or may not pay well) requires probably 200,000 people. For this reason, architects have gravitated to the large centers. There they can draw on a clientele made up of the intellectually elite, the wealthy, the socially pretentious, and the large business interests.

We are just about at the end of this trail. The dependence in the past on a few wealthy individuals to subsidize the profession has been a prop that is rapidly being removed. There will no longer be a need for many large centralized architectural offices. The process of decentralization makes it reasonable to work in smaller units rather than the products of giantism which many architectural organizations have been.

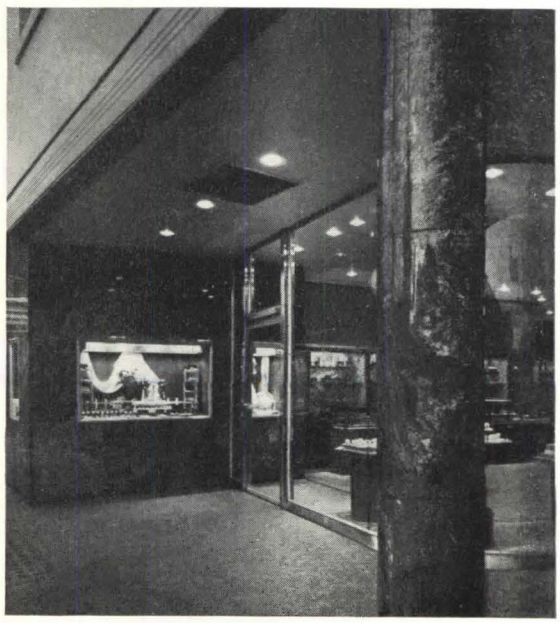
Smaller schools, smaller houses, smaller hospitals, smaller factories, and I might add, smaller communities are the order of the day. The patrons of the architect of today are the average man and the community. Unless the architect has something worthwhile to offer in the design of towns and shelter for the majority of men, he will be cut off from the lifeblood of society and contribute nothing fundamental to its growth or development. There will still be a place for large organizations and some specialists. However, the *average* architect of today must direct his thought to site planning, the puzzling problems of the small house, and the many small structures that a small town needs.

We cannot dodge reality. We cannot offer excuses of lack of wit or training. If it is necessary for an architect to be a town and landscape designer as well as an architect, the training should be secured, no matter what the cost in time and effort. If it becomes necessary for an architect to build small houses as well as design them, then we must meet the condition and extend our capacity to get the job done. We need to clear the boards, forget our pride, and begin in a humble effort to be of genuine service to our neighbors and fellow men. I do not mean by this a sentimental concern over the problem of the underprivileged, or any nostalgic idea of a return to nature. What I do mean is a direct, sensible approach to securing some significant architectural form in our towns and dwellings for the average man.



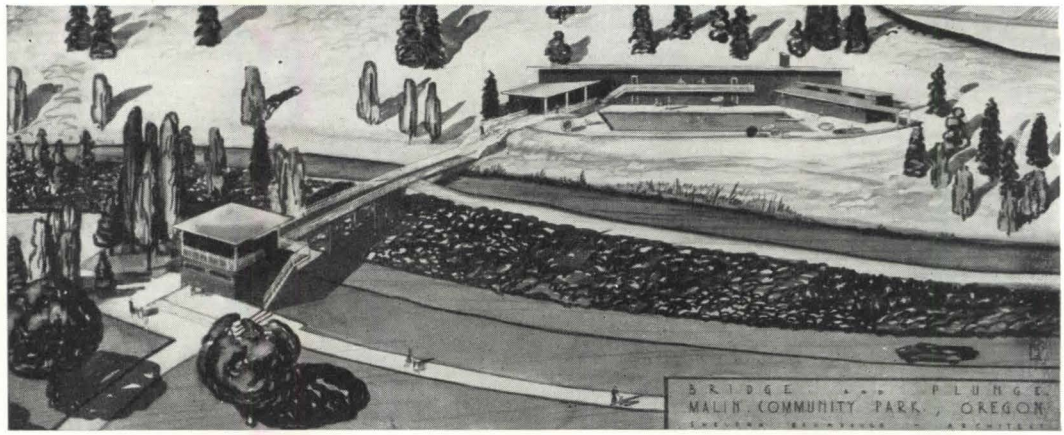
CITY PLAN: Town of Klamath Falls, Oregon; Sheldon Brumbaugh, architect. The proposed scheme carries through traffic away from the town center which it now crosses. Areas on the river banks will be opened for recreation. Brumbaugh says: "Town planning will remain an orphan until every architect adopts a region and guides its character."

RICKY'S JEWELRY STORE.

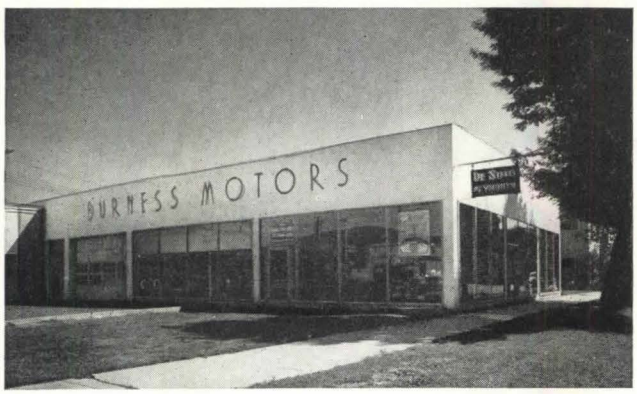


P. A. Dearborn Photos

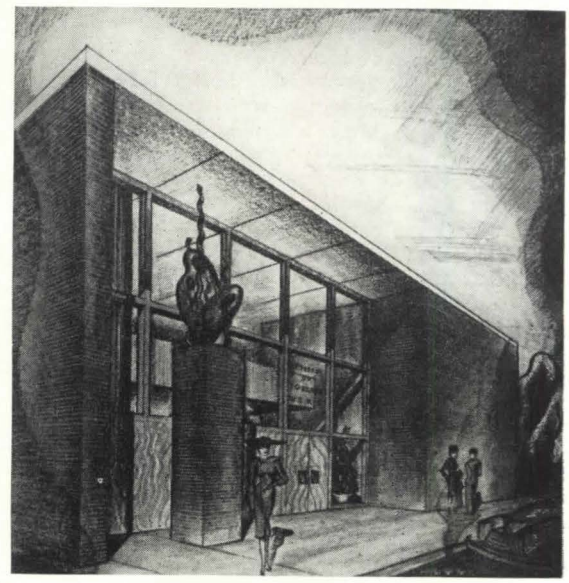
EXTERIOR has open front, granite facing on piers.



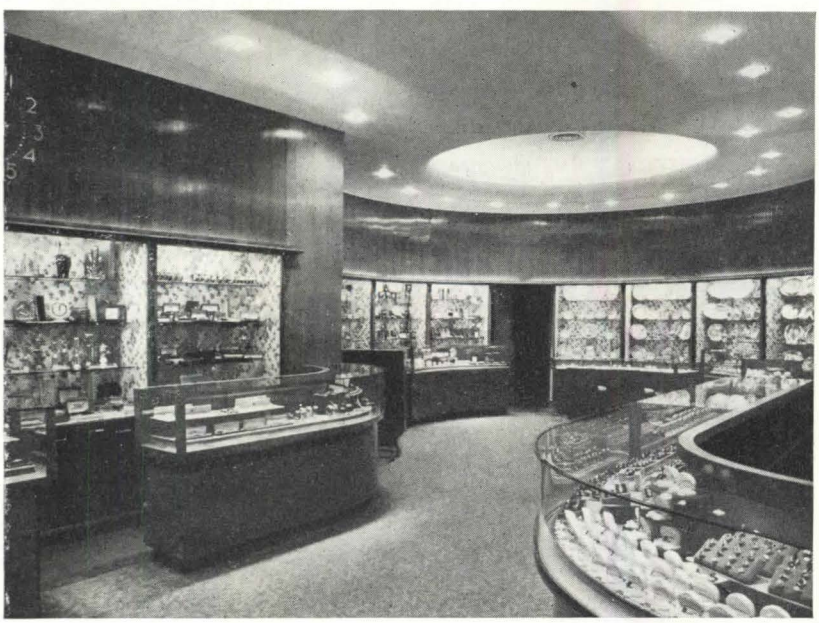
COMMUNITY PARK for town of Malin, Klamath County. Architecture and planting are integrated.



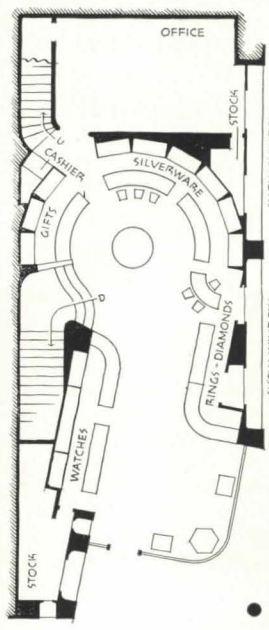
SALESROOM for Burness Motors Co.



OFFICE BUILDING: Veterans of Foreign Wars.



INTERIOR; bleached walnut finish. Ventilation system removes heat from light sources.



Floor Plan 0 5'

What are the chances for a modestly successful, interesting, and useful practice in a small town? I believe that they are great; the character of many communities has not been stratified by obsolete patterns and the countryside in many regions is, as yet, largely unspoiled. Klamath Falls is not the only town in which there is still a pioneering spirit. It happens to be a workers' community—healthy, perhaps rough in spots, definitely artless and direct and full of animal vitality and the willingness to take a chance. There are many other areas of which the same might be said—and they need architects to give them direction in their growth.

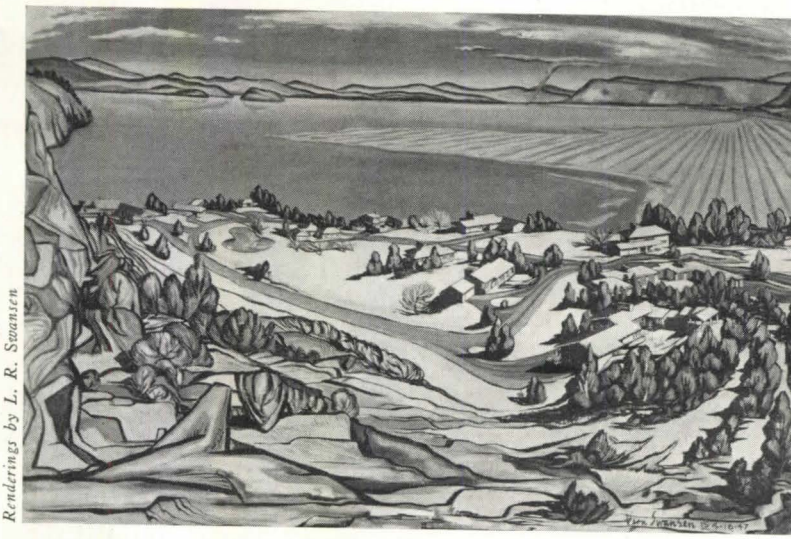
How should a young architect determine where to establish his practice? The deciding factor, I believe, should be a love of the region and an affinity for the people. A young architect would do well to become a tramp draughtsman for a few months and explore these United States to find the place that satisfies his heart and mind. Family connections may or may not be a deciding factor, depending on the individual. Perhaps his own home town will always hold him. However, more than sentimental attachment should determine the choice; a realistic study of the possibilities for business success should be undertaken. Whether the community can support an architectural practice depends upon the building activity in the region and whether the town is standing still, growing, or declining. Generally speaking, a town of 8,000 or 10,000 will provide a good practice. If the architect can draw business from the immediate surrounding area, so much the better. The position of a town geographically in relation to other towns and cities is, of course, very important. One might also consider whether the community is made up of a majority of retired people or salaried employees.

There should be nothing forced about the architect inserting himself in the community; it must be a natural process, accomplished because of a desire to improve the physical surroundings. It might be well to begin working with an established architect in the area who, if he is interested in his profession, will be anxious to encourage the development and eventual independent practice of a younger man.

Whether the young architect does this or immediately opens his own office will depend on two factors. First, whether he has the money to finance himself while he is getting his foot in the door. Second, whether he feels that he has adequate experience and ability to offer something tangible to the community. Generally speaking, the young architect should get into his own office at the earliest possible time even though his experience is fairly limited.

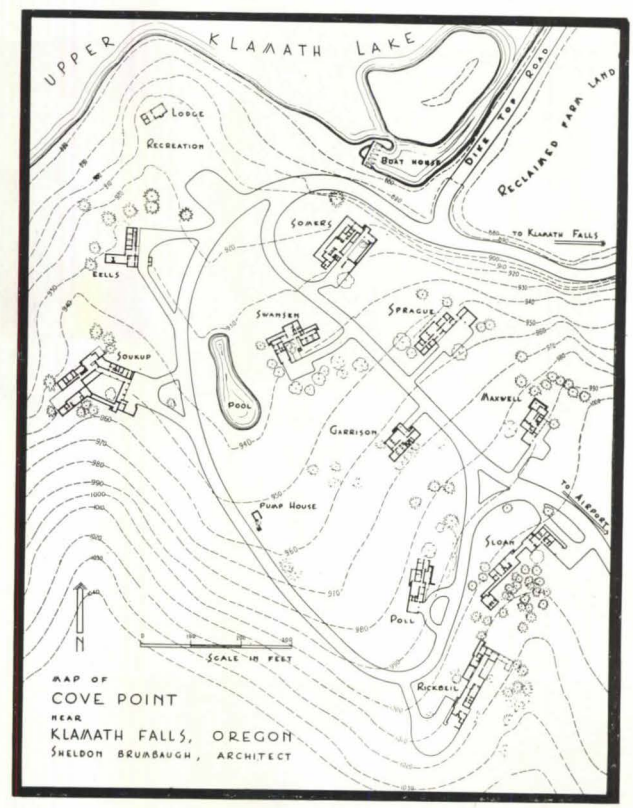
The first problem after opening an office is getting acquainted with the people whom you are going to work for. Joining any club or civic group or religious group that is in harmony with your aims and ideals is, of course, worth-while. You will find that many clubs and organizations are active in civic improvement: the Chamber of Commerce, Planning Commissions, luncheon clubs, garden clubs, and so forth. Assuming the responsibility of social leadership in art and architecture is certainly going to require some sacrifice in time and energy.

The architect must assume the social responsibility of promoting sound city planning wherever and when-

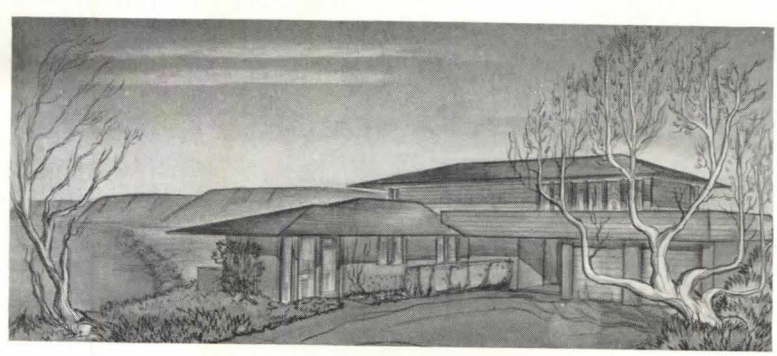


Renderings by L. R. Swansen

GENERAL VIEW of Cove Point looking toward Klamath Lake.



COVE POINT plot plan



FLOYD SOMERS HOUSE

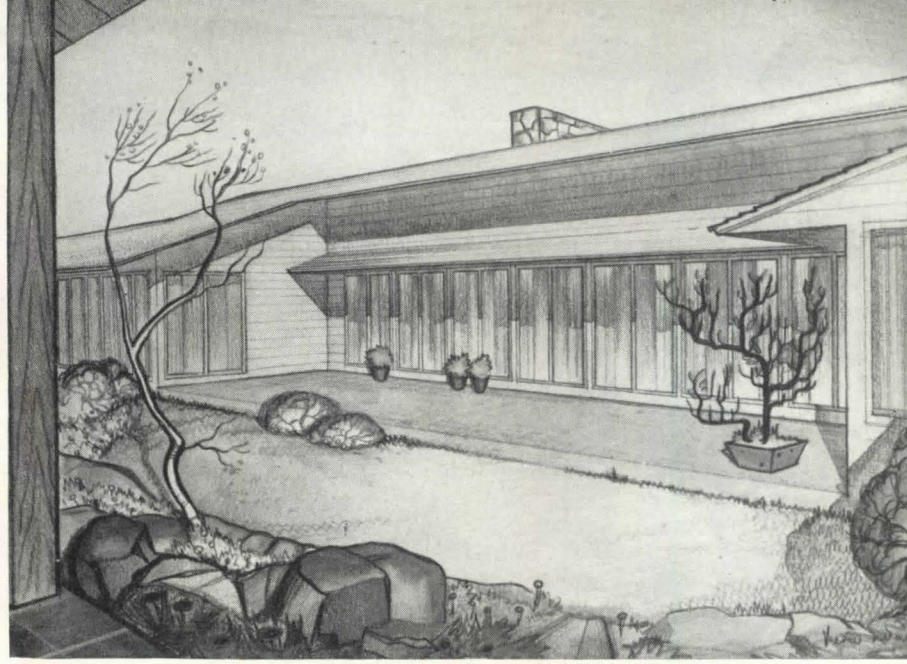
COVE POINT RESIDENTIAL DEVELOPMENT

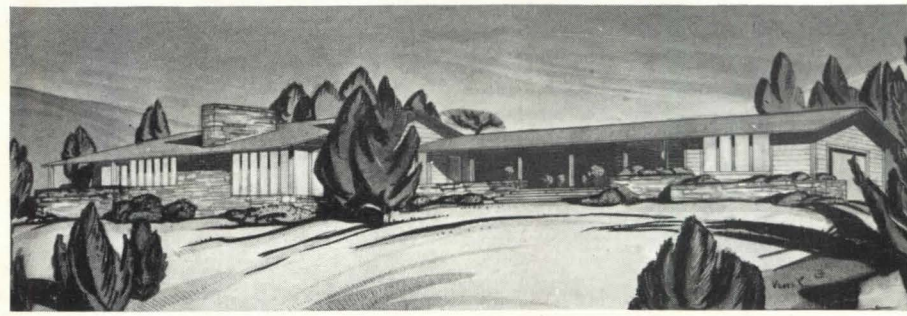
SHELDON BRUMBAUGH, Architect

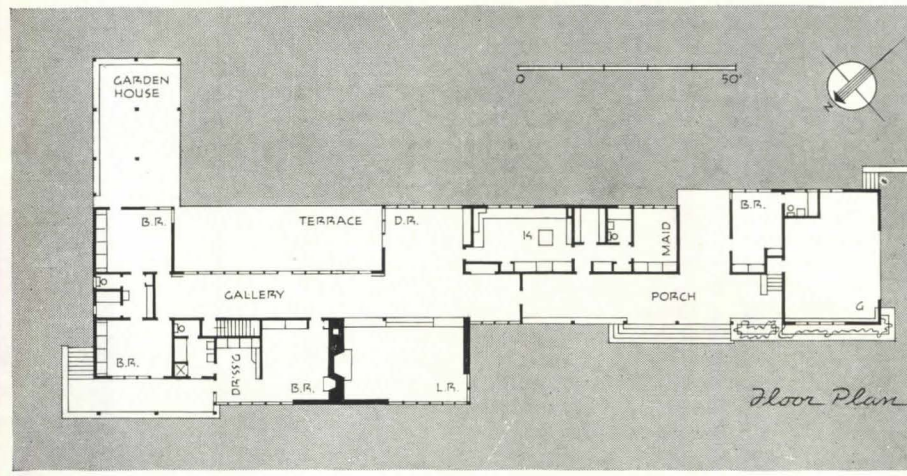
A group of eleven Klamath Falls business and professional men have banded together to develop a point of land on Upper Klamath Lake. Each one of the group owns his homesite outright, and the eleven share ownership of 135 acres of common land, on which a number of community buildings will be constructed.

Sheldon Brumbaugh was asked, first, to assist with the plot planning. Mr. B. E. Eells, organizer of the group, says, "He trudged with me through soft earth, juniper, and sage brush . . . he became very enthusiastic." Needless to say, Mr Brumbaugh was commissioned to design the Eells house. Then, adds Mr. Eells, "though all members of Cove Point are independent thinkers, Mr. Brumbaugh has conformed to their desires so completely that he has been given the assignments for all the buildings." Harmony has, of course, resulted.

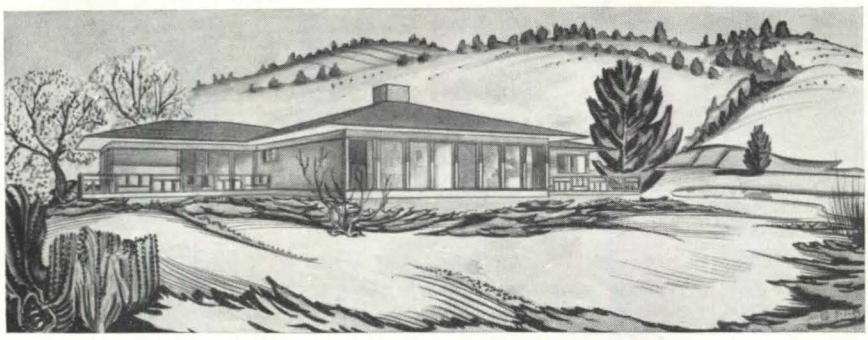
Brumbaugh says of the project (now under construction) : "It has given me the opportunity to design houses as I like them—long interior vistas, spreading out decentralized plan, easy organization that fits the topography, orientation, and view." Sites cost each owner $2,000; houses range in cost from $18,000 to $50,000. Monthly "dues" maintain the common property.



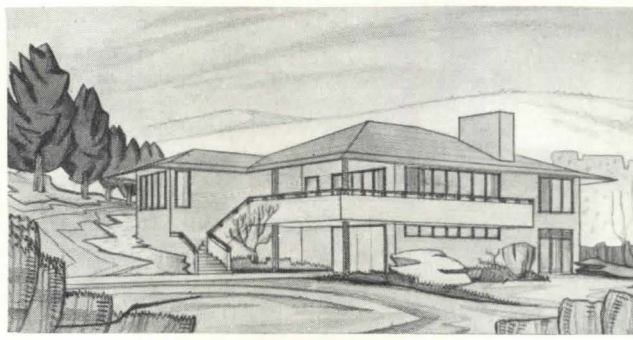




ARTHUR RICKBEIL HOUSE



MERLE SWANSEN HOUSE



RAY GARRISON HOUSE

ever he can to the limit of his financial ability. Time and advice should be given freely to all civic groups. Work that requires financial expenditures will, of course, be limited to ability to absorb these costs in the regular work of the office. Certainly an architect should do everything within his means and make definite sacrifices for his community. Some of these planning activities can be put on a paying basis. Others must be an outright contribution.

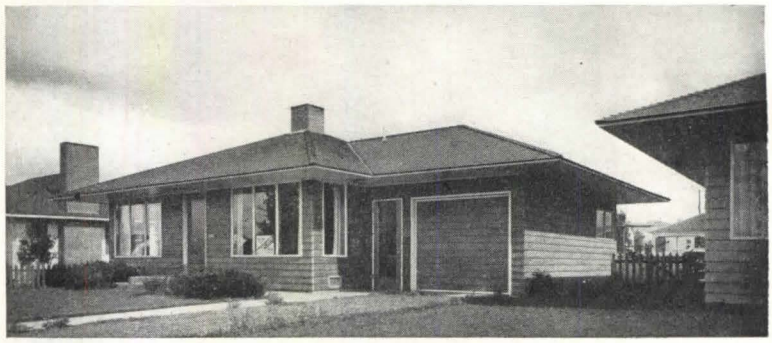
Local publicity is very necessary, in order to interest the people of the community in planning problems. I think that the best local publicity is to choose likely city planning projects, and build and exhibit models of your proposed solutions. The public understands models, and parks or recreation areas offer interest to everyone. If the young architect can scrape together enough money to build his own office building or home to show what he can do and what he stands for, it provides a splendid example and background for his work. Securing national recognition through the publication of work in national magazines gives the contemporary designer strong moral support and encouragement and lends public prestige.

There has been widespread discussion about the possibility of small house design being a self-sustaining part of an architect's practice. An architect in a small community, to do his full job, *must* design small as well as large homes. In my own experience this work can pay its way. It is true that the owner of a small house usually feels that he cannot afford a custom-designed house and it is questionable whether architects on the average produce a product that is enough superior to the speculative builder's to justify the owner in spending the money. I believe that the solution of the small house problem will be helped in two ways. First, the architects will so definitely establish their superior ability in small house design that the public will appreciate and want the architects' product. Second, increasing numbers of large subdivisions will be built under architects' supervision, so that the savings accrued in the design of a large project and the use of standardized parts will make it possible for the owner to secure a better house for less money.

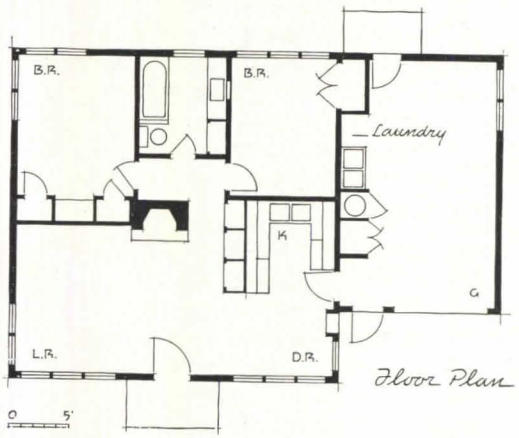
The concern over building as well as designing puzzles me. There is no shortage of very capable builders and certainly no shortage of the engineering knowledge necessary to make a building stand up. Personally, I have no trouble getting contractors to execute jobs as I want them. However, I recognize that this is not so in every region, and that some architects find that they offer a better service to the community when they act as builders as well as designers.

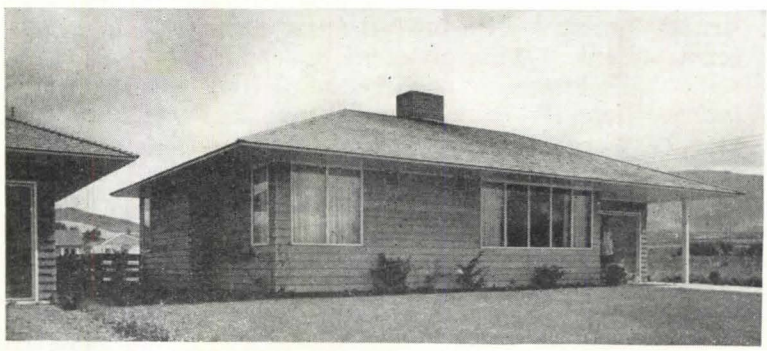
If I were to contract a job, I would charge the owner the usual contractor's fee. If an architect wants to build the buildings he designs, I see no reason why he should not do so if he is willing to spend the time rustling materials, hiring labor, and running the job. The builders that I have confidence in have spent years learning their trade and I don't think I could compete with them in efficiency unless I gave it my full time and attention.

The answer to all the questions that may arise about practice in a small town can be summed up quite simply: a love for architecture, and a love for the community.

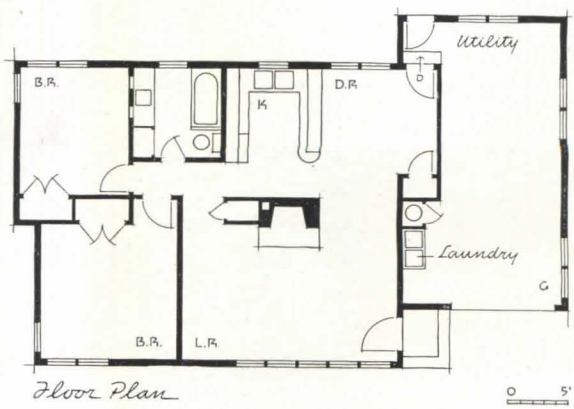


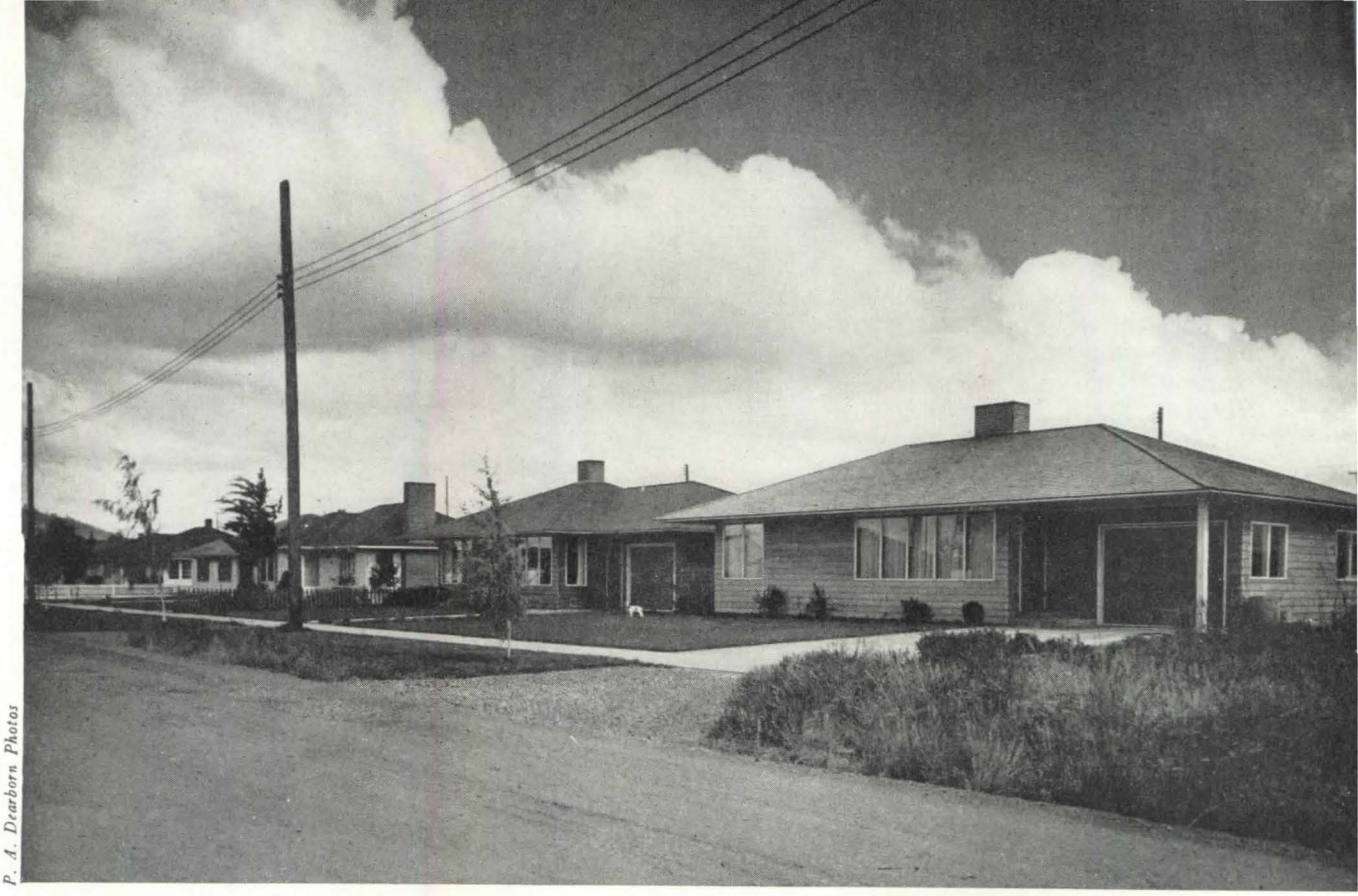
HOUSE NO. 1





HOUSE NO. 2





P. A. Dearborn Photos

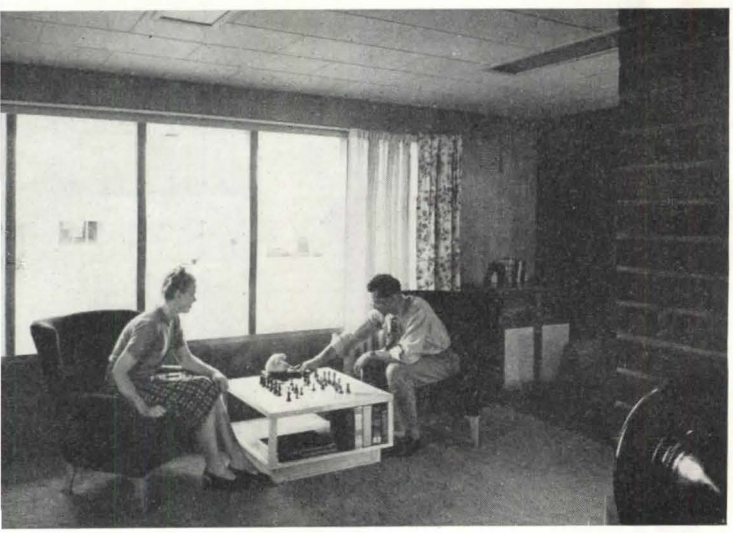
GENERAL VIEW of development

VETERANS' HOUSING,
KLAMATH FALLS, OREGON

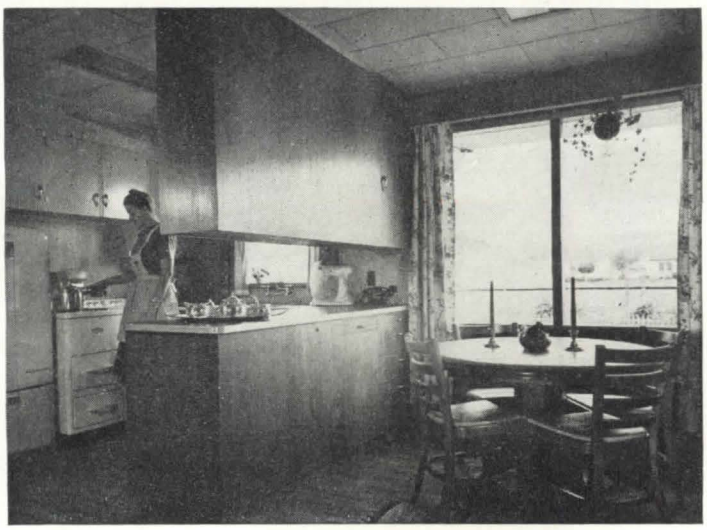
SHELDON BRUMBAUGH,
Architect

These $8,500 houses form an interesting contrast with the more expensive Cove Point homes on the preceding pages. Brumbaugh feels that the architect has a responsibility to produce a better product in speculative homes than the builders or the purchaser could otherwise obtain.

Plan, construction, and appearance are fairly conservative, but the houses have a nice informality and a pleasantness of aspect that are all too often missing from the usual builder's development. In each of the two plans illustrated, living rooms have a great deal of light; dining areas are clearly defined, but open into living space, and bedrooms are well planned. Houses are frame, with cedar siding. Most interior finishes are birch plywood.



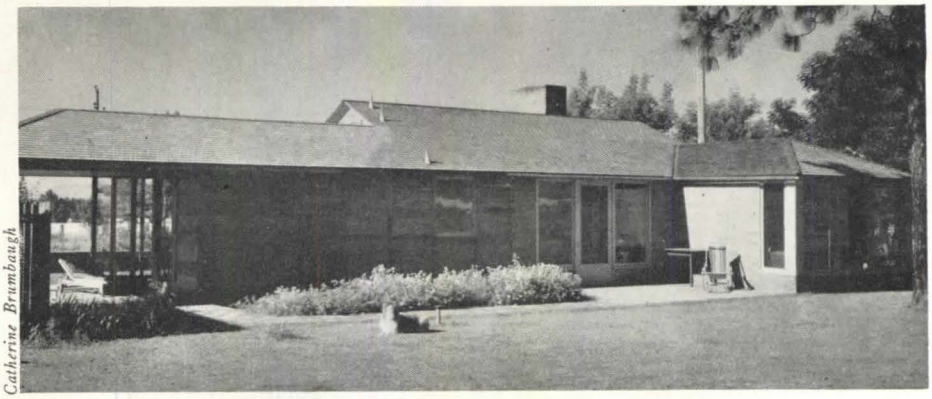
HOUSE NO. 2. Living Room



HOUSE NO. 2. Dining Room—Kitchen

ARCHITECT'S OWN HOME

The Brumbaugh home, which will be published in detail in a later issue of PROGRESSIVE ARCHITECTURE, is designed for informal living and modest entertaining. The design is marked by a pleasing combination of brick, natural redwood, and large glass areas.



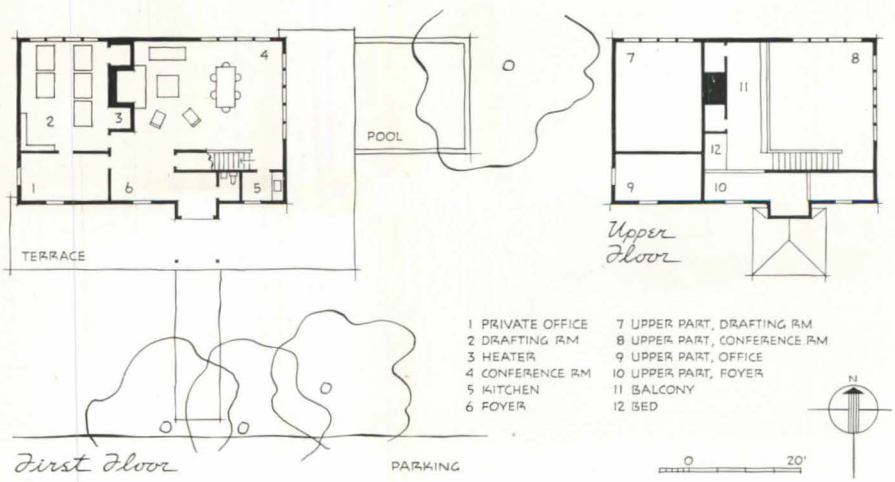
Catherine Brumbaugh

SHELDON BRUMBAUGH, Architect, Klamath Falls, Oregon

P. A. Dearborn Photos

ARCHITECT'S OWN OFFICE

By remodeling an abandoned railway station, Brumbaugh has an office which is distinctive in appearance. Interiors are most pleasant and open. The plan compares favorably with the three other architects' offices which follow.

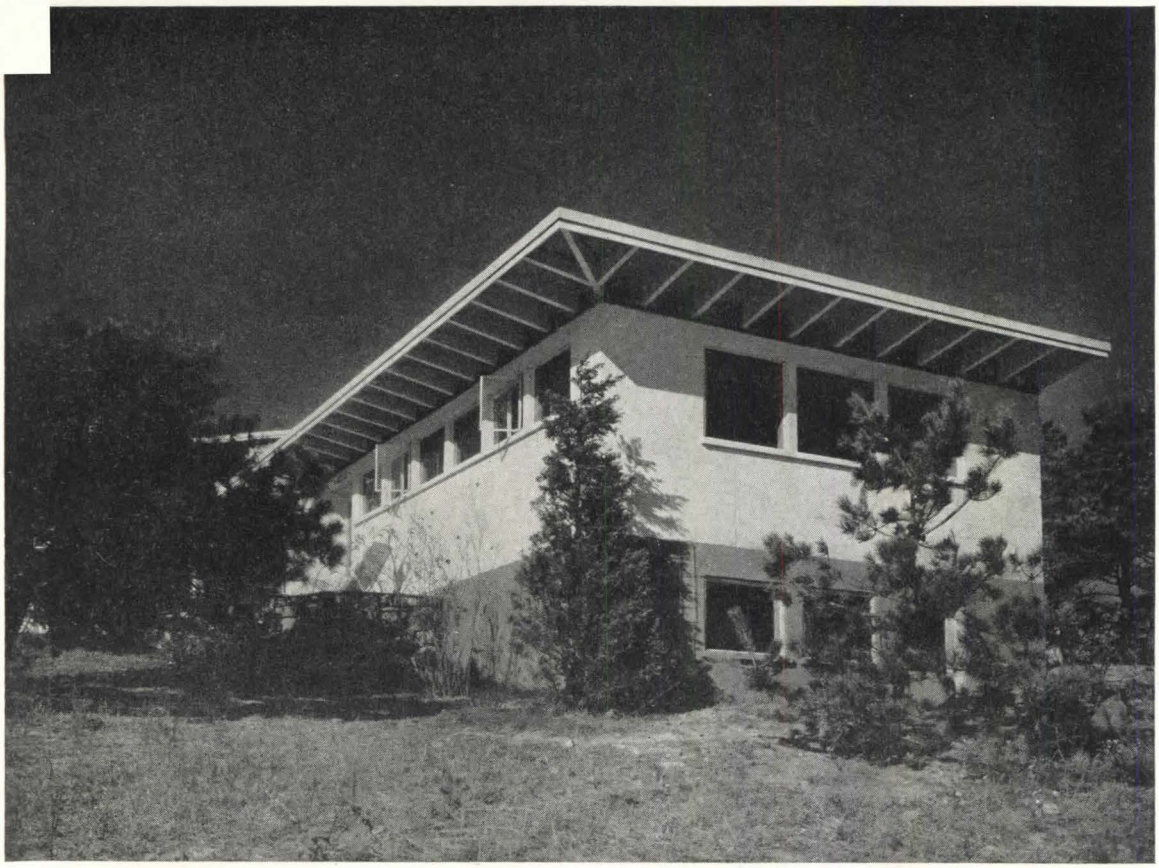


Paul Davis Photos

STUDIO WORKSHOP FOR E. GUNNAR PETERSON, Architect
FALMOUTH, MASSACHUSETTS

Unlike any other offices shown in this group, Mr. Peterson's studio is an addition to his home. Handsomely placed on a hillside with a view out across the water, the new wing comes alongside the house carport at the lower level. Space is provided at one side for car parking. In this forthright structure, exterior walls are of concrete block, painted white. The floor is a concrete slab, and wood studding is the base for interior walls. The wood-framed roof is surfaced with tar and gravel; casement windows are steel. A striking note of color is the turquoise of the soffits of roof overhangs.

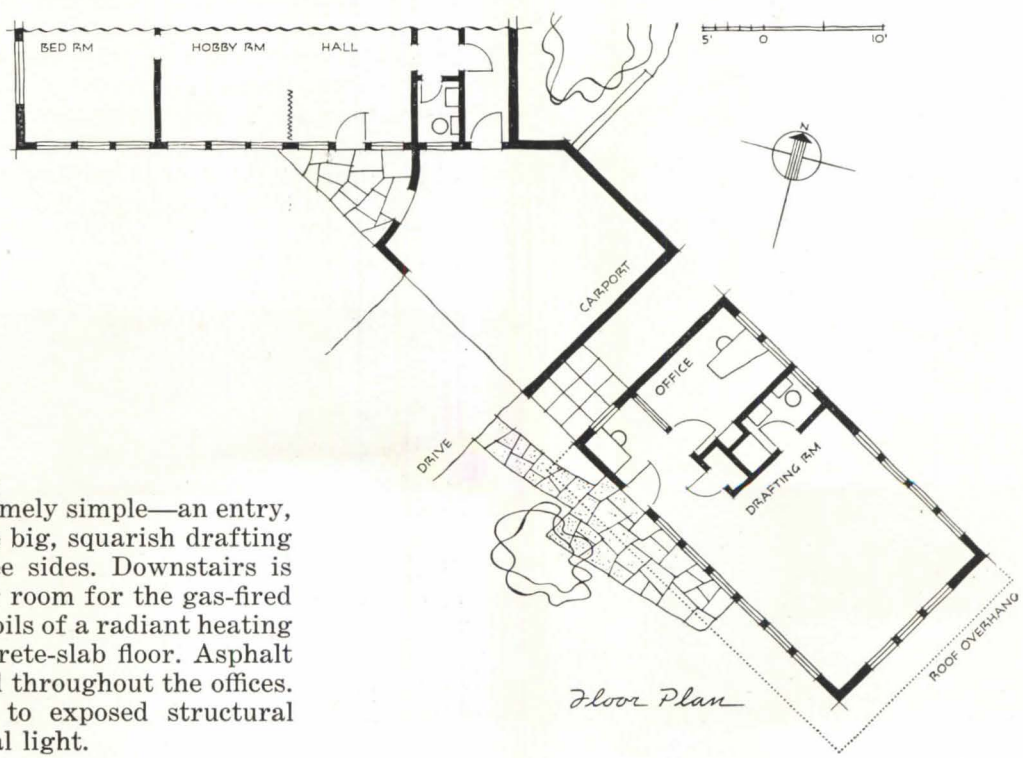
OUTSIDE THE ENTRANCE to the studio is a flagstone terrace used as an outdoor conference room in fine weather. The horizontal lines of the building parallel the horizon line of the sea in the distance.



DOWNHILL VIEW

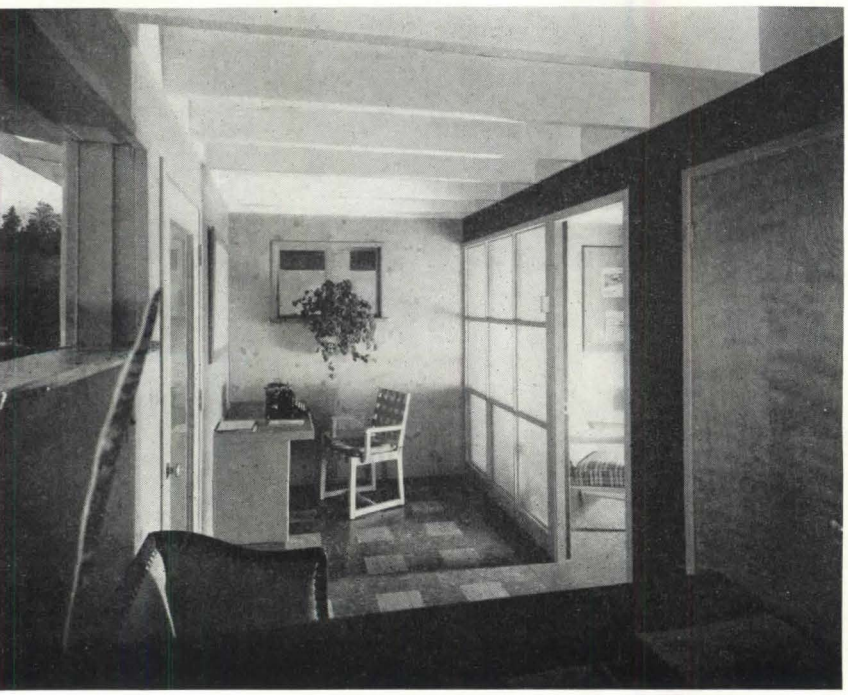
STUDIO WORKSHOP FOR E. GUNNAR PETERSON, Architect

FALMOUTH, MASSACHUSETTS

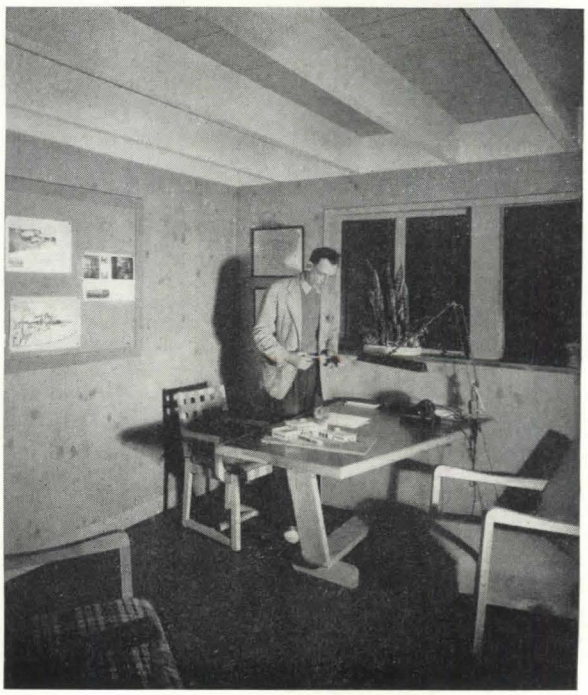


The plan of the studio is extremely simple—an entry, a small private office, and the big, squarish drafting room, with windows on three sides. Downstairs is a work shop and small heater room for the gas-fired furnace that serves the pipe coils of a radiant heating system embedded in the concrete-slab floor. Asphalt tile is the floor surfacing used throughout the offices. Fluorescent lamps attached to exposed structural members provide the artificial light.

DRAFTING ROOM



ENTRY

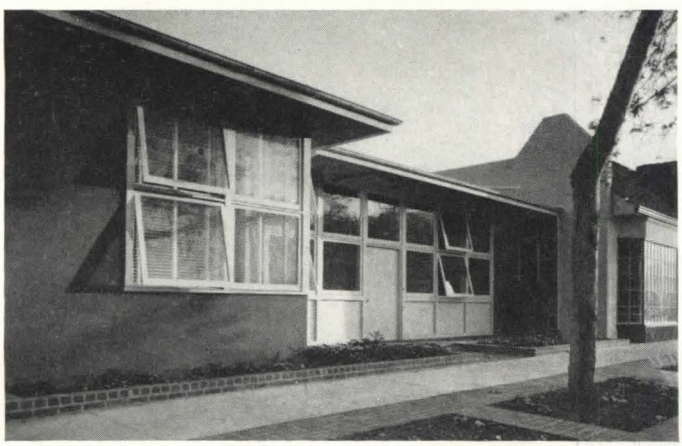


PRIVATE OFFICE

OFFICE FOR RALPH C. FLEWELLING & ASSOCIATES, Architects LOS ANGELES, CALIFORNIA

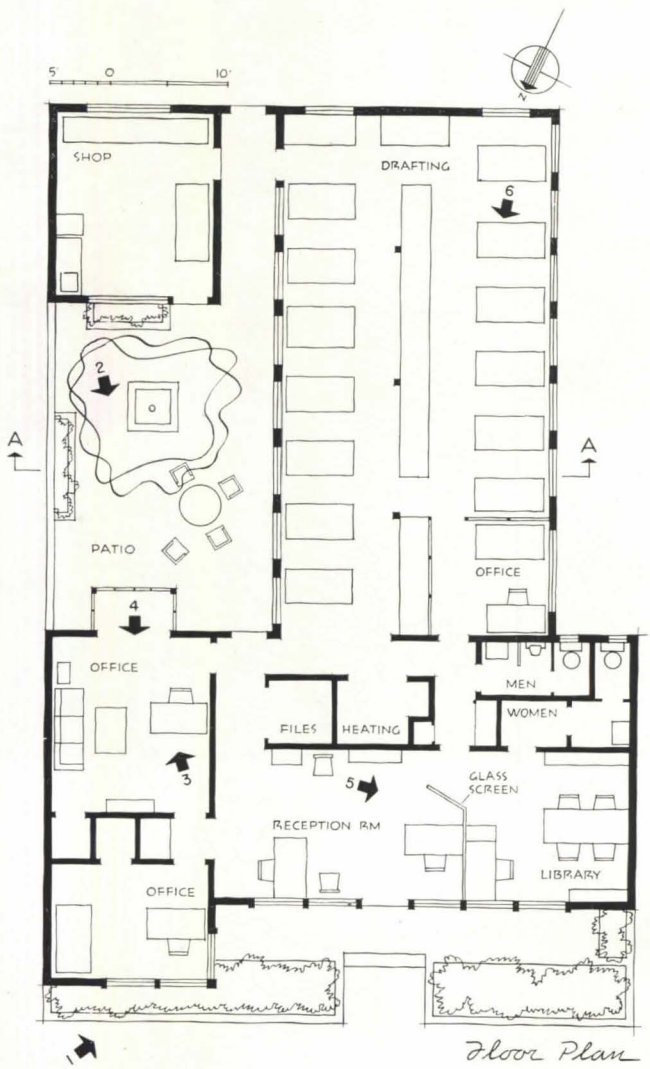
FRED BARLOW, JR., Landscape Architect

In designing these offices on an inside lot, the architect has organized the space to provide good light in all workrooms and an enclosed patio. The drafting room is the office's pride and joy: "We are convinced that we have almost perfect light." The wood-frame building is built on a concrete slab; the ceiling is insulated with 4 inches of wool-type insulation. The shop at the rear includes an ozalid printing machine, mimeograph equipment, and facilities for preparing lunches eaten in the patio. The building is heated by a forced-draft, gas-fired furnace.

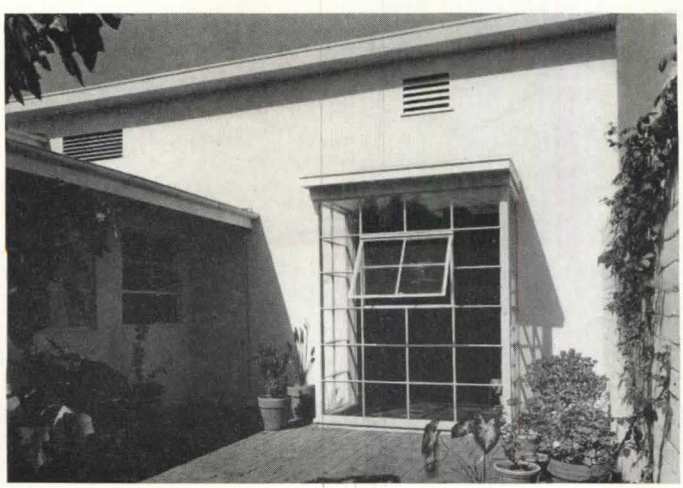


Baskerville Photos

RED-BROWN plaster; off-white trim; light green roof soffit.

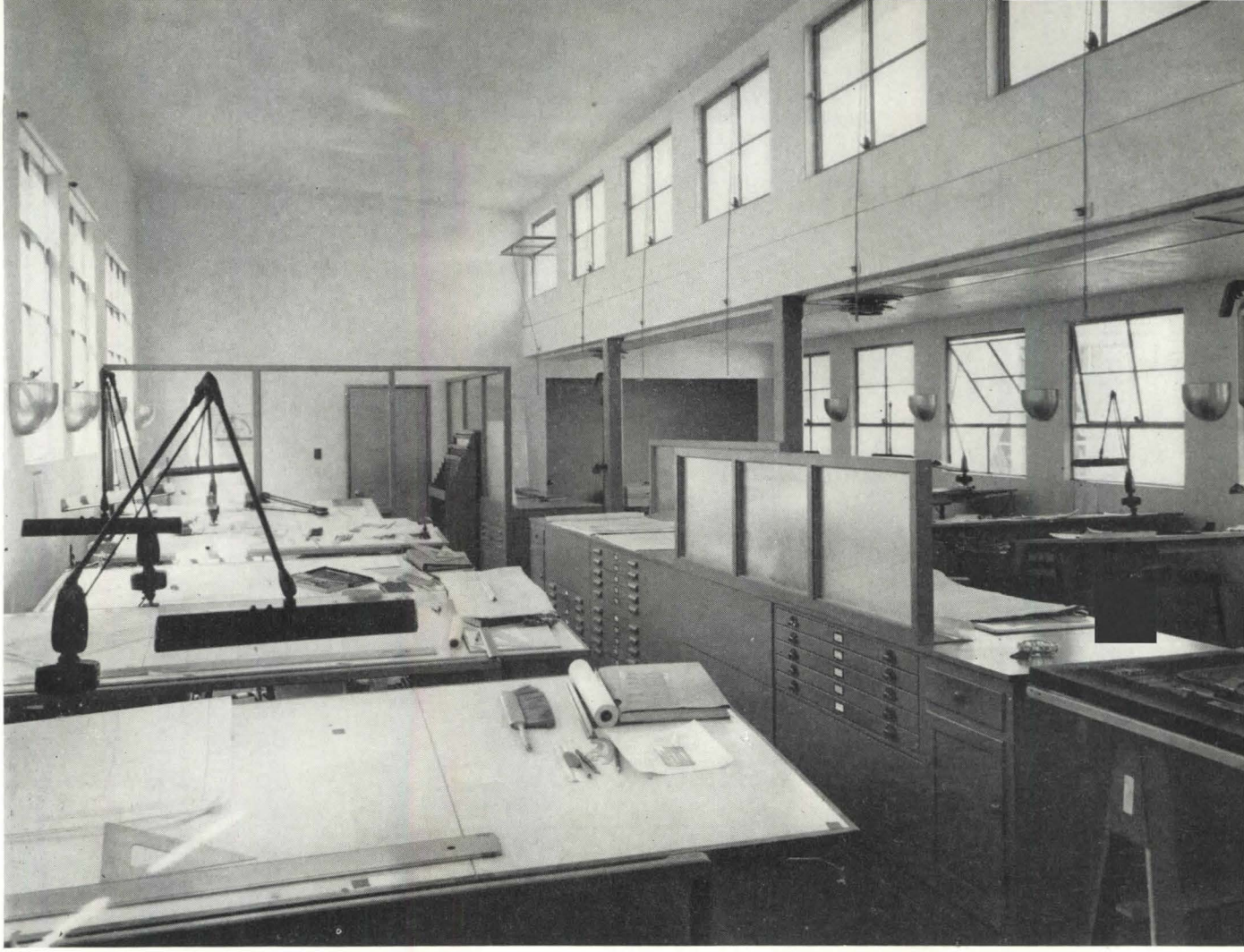


Floor Plan



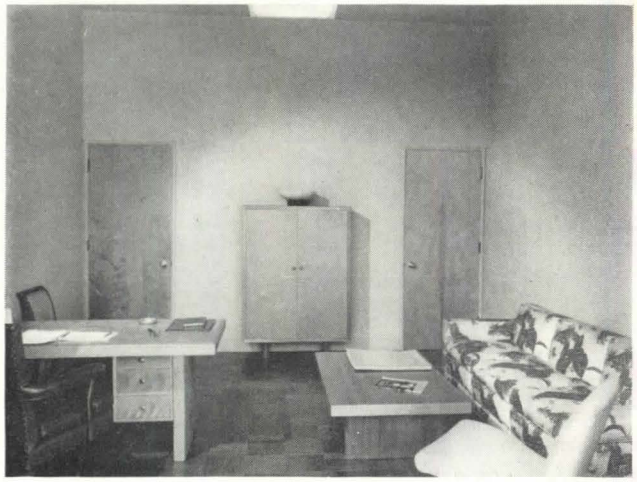
PATIO: drafting-room wing, left.

Mr. Flewelling's OFFICE.

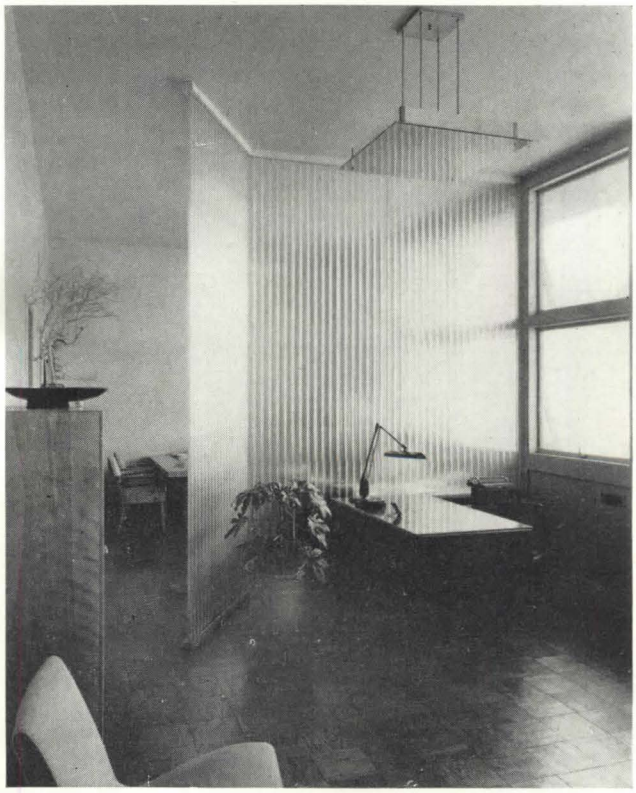


DRAFTING ROOM: See section below for source of "almost perfect light." Walls and ceiling are light cream.

Section A-A



WALLS: light chartreuse; ceiling: light plum.



GLASS PARTITION separates reception room and library.

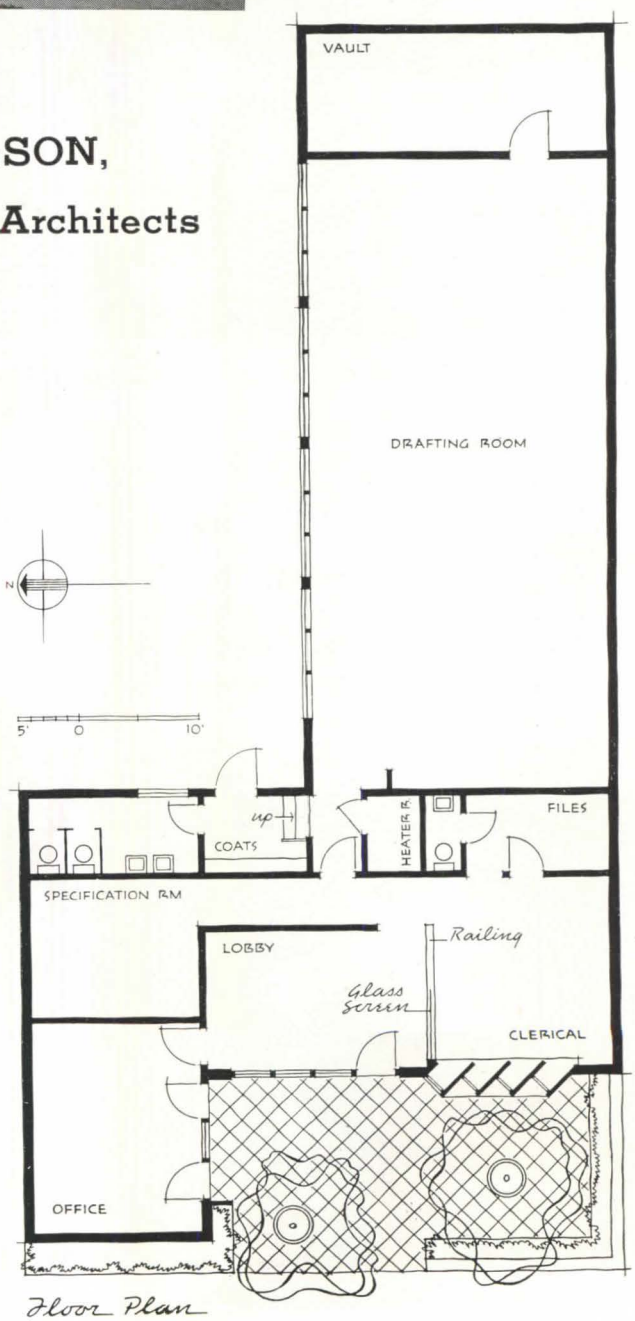
LOUVERS and projections above doors and windows: welded steel channel frame, lath and plaster.

OFFICE FOR PARKINSON, POWELSON, BRINEY, BERNARD & WOODFORD, Architects LOS ANGELES, CALIFORNIA

Built on an interior lot, the plan is stepped back in such a way as to provide a landscaped entrance court and a long rear court that allows unhindered north light to enter the drafting-room windows. The clerical space is shielded from direct western sunlight by a series of vertical louvers placed at an angle. Exterior walls are all brick; sash and doors, wood. Roof construction: beams with 2-inch tongue and groove sheathing surfaced with tar and gravel.

Edgar Otborn Photo

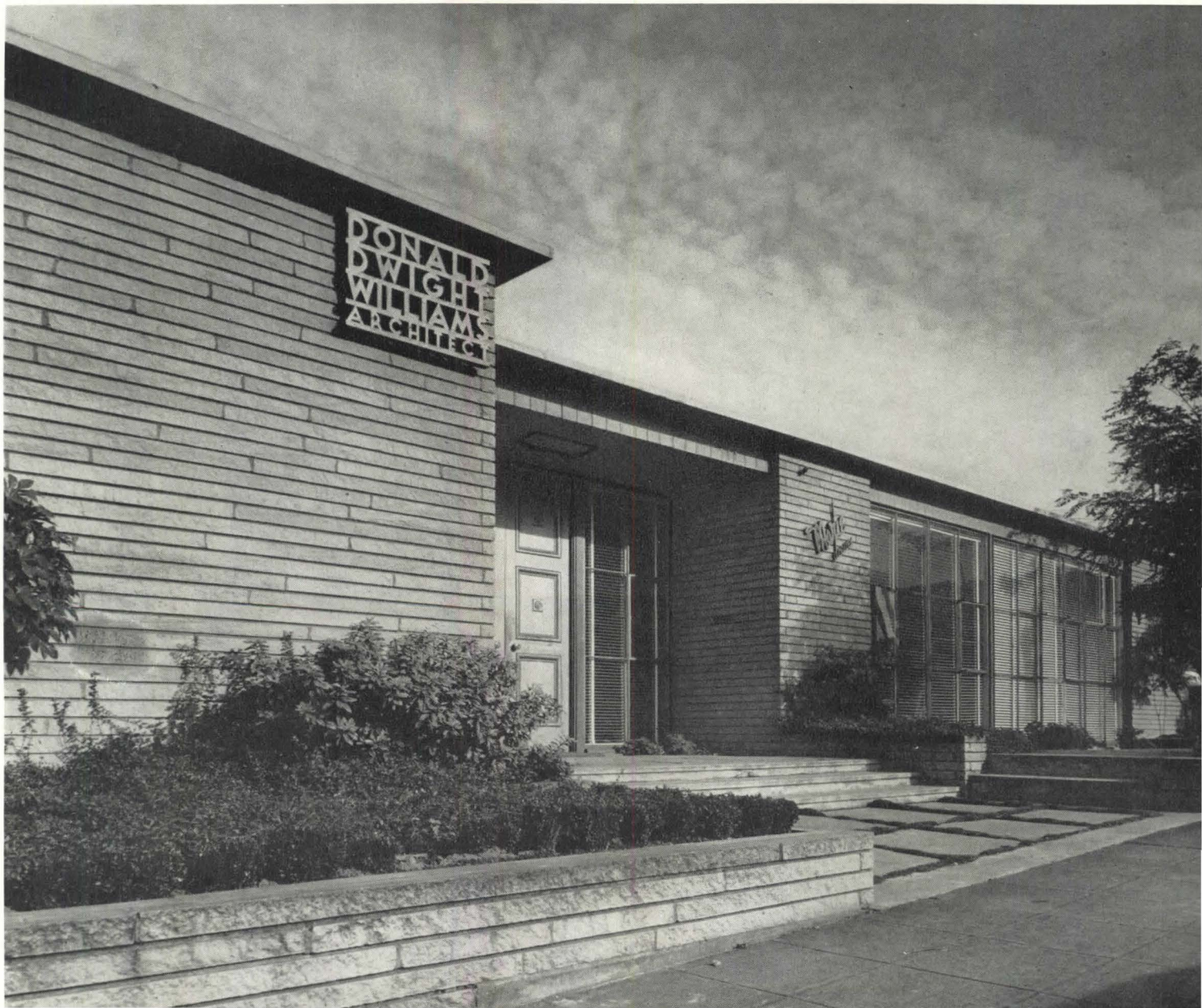
DRAFTING ROOM ceiling slopes up to a wall of north light.



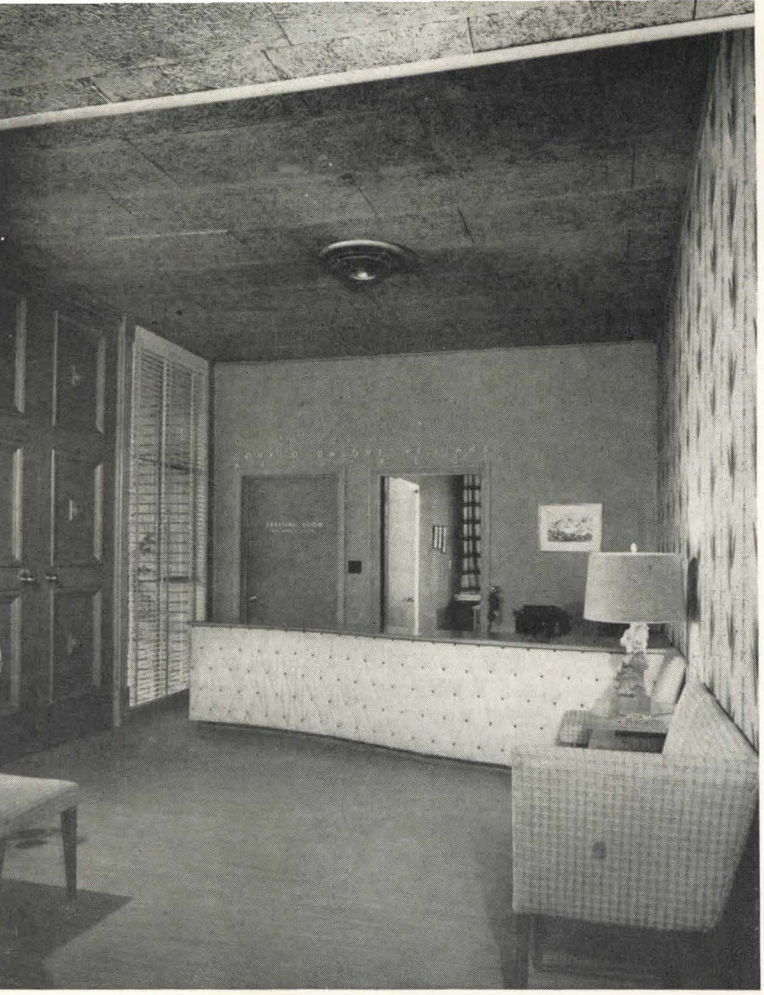
Floor Plan

OFFICE FOR DONALD DWIGHT WILLIAMS, Architect; DRESS FACTORY SALES ROOM; APARTMENT SEATTLE, WASHINGTON

It is probably no exaggeration to say that this building represents a unique combination of functions. Mr. Williams has his professional architectural offices, opening off the central entrance foyer. To the right is a waiting room, sales room, and work room for Mrs. Williams' dress manufacture and sales business, and at the rear is a small apartment with a fenced-in patio opening off the living room. The resultant building is a noteworthy object lesson in the possibility of attaining architectural harmony even though functions to be served within it may be quite distinct in character.



P. A. Dearborn Photos



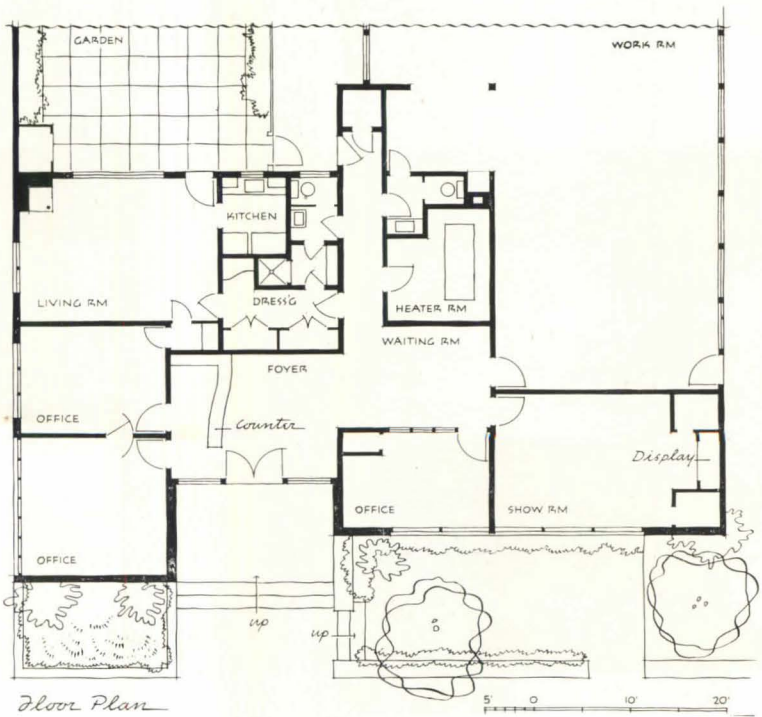
MAIN LOBBY. Architect's office beyond.

PRIVATE OFFICE for Mr. Williams.

OFFICE FOR DONALD DWIGHT WILLIAMS, Architect; DRESS FACTORY SALES ROOM; APARTMENT

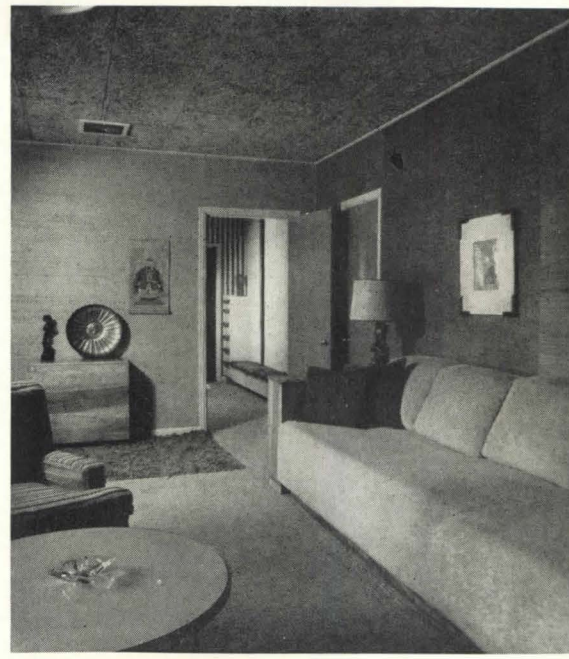
The building is just on the edge of the high-rental, congested business district. As the plan indicates, extension of all departments is contemplated. A second story is also in prospect. Parking space occurs at the rear.

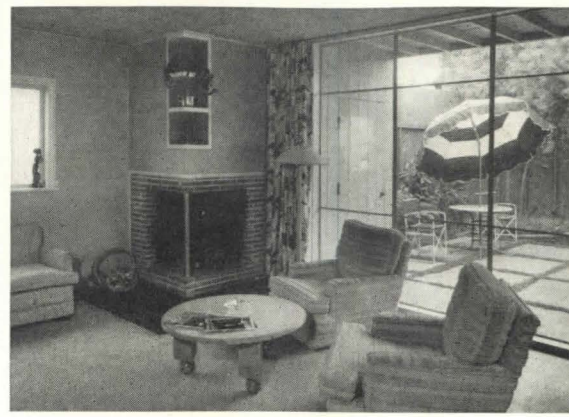
A reception desk in the lobby controls both of the major offices, and the apartment may be entered from either. The wood frame of the building carries the *roof on* but five interior posts; all interior partitions are non-bearing and may be relocated as required. Sandstone surfaces the main fronts; sash are of steel, with certain hinged panels for ventilation. Various types of acoustical and insulative tile are used for ceiling finishes, and floors are surfaced with linoleum or carpet, except in the factory, where concrete is left exposed.



Floor Plan

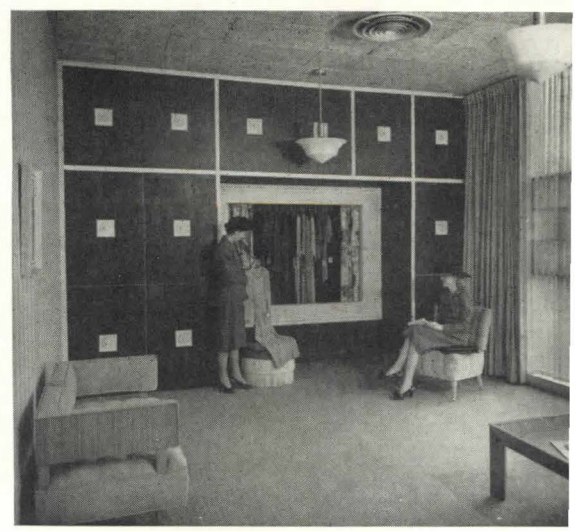
DRAFTING ROOM. Mr. Williams on center.



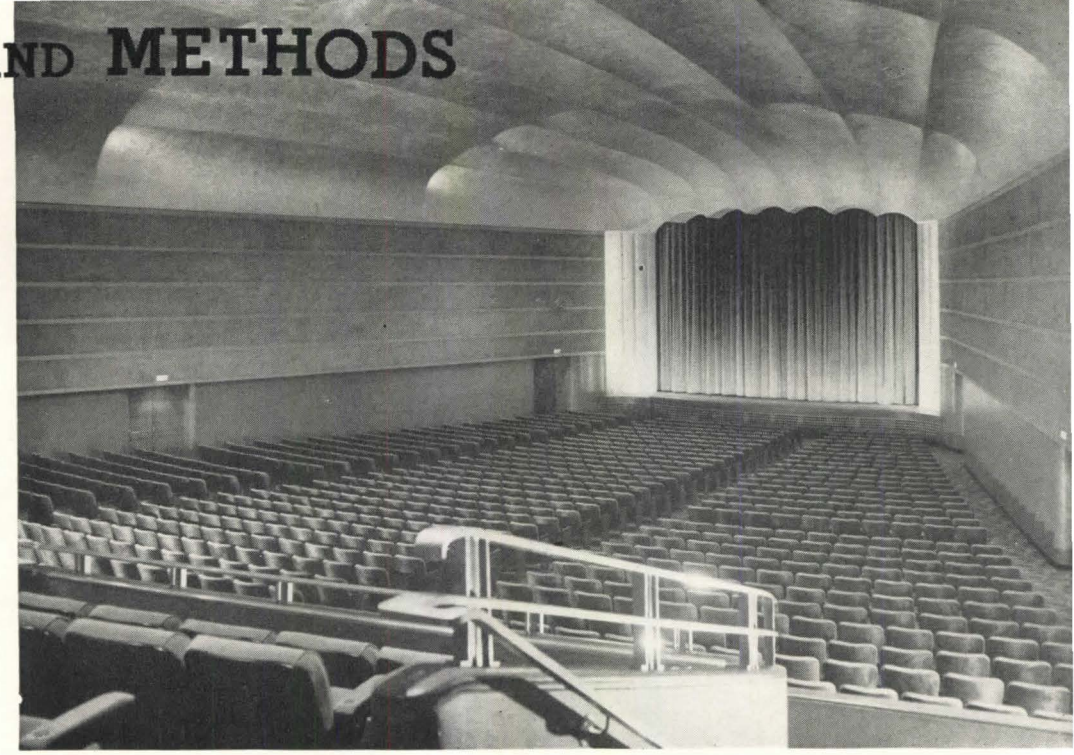


LIVING QUARTERS. The apartment consists of a large general living room, a sizable dressing room, a kitchen, and a bath. Through the window at the rear is a pleasant little fenced garden.

SEATTLE, WASHINGTON



MAIN LOBBY. Toward dress-shop waiting room . . . Mrs. Williams' office . . . . . and the display and sales room.



Isophonic ceiling designed by Prof. H. L. Cooke of Princeton University, installed in Princeton Playhouse (Thomas Stapleton, Architect). Flutings ensure that reflected sound will cover entire audience; added to direct sound from stage, this produces same total value at every seat.

Courtesy Princeton Alumni Weekly

THE AUDIENCE HEARS

By HAROLD BURRIS-MEYER and EDWARD C. COLE

What does the audience want to hear?

The audience and the showman find it to their mutual advantage and satisfaction for the audience to hear only what it wants to hear, or the showman wants it to hear, and that, clearly. This article will concern itself with those parts of the theater building which have a direct bearing on the audibility of the show.

Requirements

The audience wants to hear the actor, the singer, the orchestra, the instrumental soloist, the organ, the audible component of the sound motion picture, and any other sound which is part of the show. It does *not* want to hear the elevated, auto horns, fire sirens, wind or rain outside the theater while the show is in progress, or scraping feet in the aisles and rows, rattling foot rests, squeaking seats, banging lobby doors, or whistling fans, roaring blowers, knocking radiators, or telephone bells, buzzers, snap switches, the noisy shifting of scenery, or any unplanned distortion of any sound which is a part of the show.

It is up to the architect to insure perfect audibility of the show, and by the same token to protect the audience against distracting sounds such as those listed above. He must:

1. eliminate from the audience area all unwanted sound (noise, that which is not part of the show);

2. assure audibility for all sound which is part of the show.

Noise Level

Unwanted sound is noise. Noise in the theater masks portions of the show and limits subtlety. It is therefore desirable to keep the theater as free as possible from outside noise, and noise originating inside the theater.

The average noise level in existing metropolitan theaters with audience present is about 50 db[1]. In the same locations 40 db is an entirely feasible level involving little, if any, additional construction expense. The best theaters often have a level of about 30 db. The level of ordinary conversation (at 3 feet in open air) is about 65 db.

Sound Transmission

Noise is either airborne or solid-borne. Steel structural members transmit sound with considerable efficiency. Sound thus transmitted becomes airborne when wall, floor, or ceiling areas or fixtures are vibrated by the structural members and act much as the sounding board of a musical instrument. Vibration from sump pumps, blowers, etc., hardly noticeable as noise in the air, becomes noise when structurally transmitted to the house[2]. A concrete slab will usually transmit sound more efficiently than a brick wall.

[1] db = decibel, the handy unit of sound intensity; the log of the ratio of the sound power to a standard reference: 10^{-16} watts per square centimeter.

[2] Auditorium exclusive of stage.

Procedure

1. List the sources of noise (this will include a noise survey of the site).

2. List the means of transmission by which such noise might be conveyed to the house.

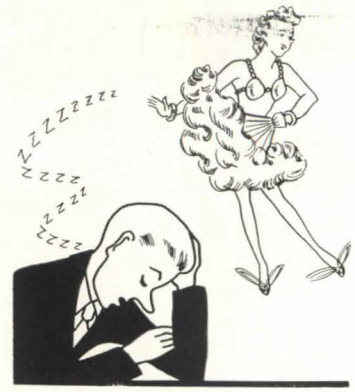
3. Provide in specifications for elimination of noise at the source wherever possible, e.g., maximum allowable noise from machinery, vibration insulating mounts, etc.

4. Provide in design for minimum transmission of sound to the house: doors opening on alleys, roof insulation, no single door having direct access from outside to house or stage which must be used during performance, etc.

5. Provide in specifications for minimum sound transmission by materials in all places where sound exclusion is a factor: adequate minimum transmission factor by emergency exit doors, interior walls, etc.

The specification (5) is arrived at by subtracting the desired house sound level from the level of the maximum outside noise. (30 db inside level, 90 db outside level — minimum allowable attenuation by door in frame 60 db.) Acoustic characteristics of most building materials are known and widely published. Most suppliers of building materials will have sound transmission tests made of their products if they have not been made. Most contractors who install machinery will plan their installation with reference to a maximum noise specification and guarantee to meet such a specification.

Note: All specifications dealing with sound should include a statement of the frequency range to be covered. Acoustic measurements are conventionally made at octave intervals from 128 to 4096 cycles per second. A 60 cycle hum can be almost as annoying as can a 10,000 cycle squeal. The ear responds to frequencies from 16 to 16,000 cycles per second, and a subway rumble is felt at even lower frequencies. For building material specifications and noise level calculations then, materials must often be tested for transmission of higher and lower frequencies than has been conventional practice.



Preventive for snoring?

Airborne Noise Originating Outside the House

Ingress	*Method of Exclusion*
Doors	Airtight fit. (This is requisite for efficient operation of ventilation system also.) Doors opening on alleys or halls are often less of a problem than if they open on the street. Preferably open only into spaces which can be kept reasonably quiet.
Windows	Do not belong in a theater. Double where used and not capable of being opened.
Ceiling cuts	Exclude sound from loft by roof insulation, solid catwalks, tight doors.
Projection booth	Quiet machines. Sound absorbent walls and ceiling in booth. Windows in viewing ports.
Ventilation ducts	1. No metal connection between blower and steel structural members. 2. Ducts large enough not to rattle or whistle when blower operates at full speed (above normal operating speed). 3. Sound insulated ducts.

Airborne Noise Originating in Theatre

Source	*Method of Prevention*
Radiators	Heat the house entirely by circulated air, or wall or floor radiation. On stage, 1. Radiator return line graded to avoid condensate and resultant banging. NO VALVES TO HISS. 2. Circulate hot water rather than steam.
Stage Wagons Discs (Noise magnified because of reverberant stage floor)	1. Well made ball or roller bearing casters running on level tracks installed over stage floor. 2. Revolving stage on its own support structure (quieter than disc on stage floor). 3. Elevators are quiet unless they are of the screw jack type and run too fast.
Audience (Talk, shuffling)	1. Make rear crossover as sound absorbent as possible. 2. Lobby doors opposite aisles used for exit, **not** during show. 3. Divide rear crossover from house by a wall—a glass wall for motion picture houses. (This eliminates the standee rail.) 4. Carpet. 5. Silent seats.
Orchestra pit	Rubber feet on chair legs and stands.
Telephones	Locate only: where one open door will not permit sound to reach house or stage. Light instead of bell on stage.
Snoring	Put on a good show.
Train rumble (subway, elevated, surface)	Only satisfactory solution is to float floor and ceiling supports and, in case of excessive vibration, interior walls, as in radio broadcast studio design.
Vibration from non-theater functions of building (gymnasium, bowling alley)	See above, or float the floor of the facility at which the vibration originates.
Motors, Machinery	Floating mounts.
Switches	Use mercury switches.
Plumbing	More than one wall between house and facility. Isolate from structural members.

To Hear the Show

Sight lines are apparent on blueprints. Anyone can take a ruler and see from the architect's designs whether or not it will be possible for the audience to see the show, and presumably anyone who builds a theater will make a reasonably thorough sight-line analysis of the designs before approving them. No matter how much faith he has in his architect, he seldom cares to overlook any chances of error when he has a large investment to protect. Blueprints per se will not, on the other hand, show whether or not the audience will be able to hear. Much of the data from which acoustic analyses are made are to be found in specifications for wall and ceiling surfaces, equipment, etc. The apparatus and engineering data for finding out from plans and specifications whether the theater is acoustically good or not are not ready to the hand of the layman.

Approaches

Acoustic studies must be conducted coincidentally with the design if the design is to avoid the risk of considerable alteration, but this logical procedure is still lamentably far from common practice. The science of architectural acoustics is new. Architects generally have not been trained in it; in fact where acoustics are concerned, a curious obtuseness often prevails. Though this situation shows some signs of improving, most existing and new theaters suffer from one of the four common architectural approaches to the

problem of making it possible for the audience to hear, each of them successful in getting a good theater about once in a thousand tries.

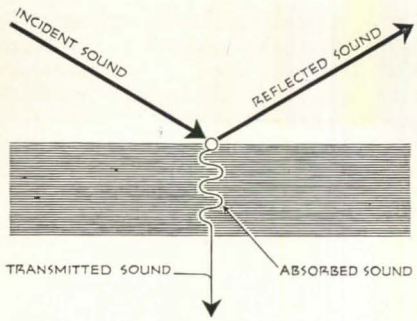
The first is to trust to luck: after all, the Metropolitan Opera House was built on that plan. No one has hit the jackpot since, however.

The second is to use a rule of thumb; it varies with what rule and whose thumb, but a few people, with much experience in theater building, have learned perforce a little about acoustic phenomena, and have used that knowledge, more often to explain why the theater was not good than successfully to make it satisfactory. Most present theaters were built by some rule of somebody's thumb.

Knowing that theaters usually turn out bad acoustically, there is a third architectural approach to the problem: build it first and fix it later. This means padding the walls or hanging up a drapery to stop an echo. No acoustically good theaters have resulted from this approach.

The final architectural triumph, however, is supposed to banish the demon of bad acoustics. It is born of despair and the public address system. If all surfaces in a theater are made very soft and sound absorbent, the audience can hear practically nothing. There are no echoes. Then, if a powerful public address system is installed, powerful enough to frighten children blocks away, the audience can hear everything, including (and this causes much bewilderment) the echoes supposedly banished by the padding. Some of the largest theaters in America were thus designed. In them a strong human voice unamplified can hardly be heard a hundred feet. It takes much amplification to make a mighty pipe organ audible. And in some thousands of seats, everything the audiences do hear, they hear twice.

Oddly enough, a number of acoustically bad theaters were built wrong not because of any of the architectural approaches mentioned, but as a result of a sincere and outwardly intelligent effort to make them good. The miscalculations have come about through: (1) making an auditorium which is acoustically good while the asbestos is down, but bad when the play is on, through lack of provision for acoustic characteristics of stage, fly loft, and scenery; (2) assuming that the seats will all be occupied all the time (in two existing theaters acoustic conditions are fair when the house is full, bad when it is half empty, and it is impossible to rehearse in the empty theater with the curtain up); (3) assuming that building materials with the word "acoustic" in their names will contribute to good acoustics no matter where or how used.



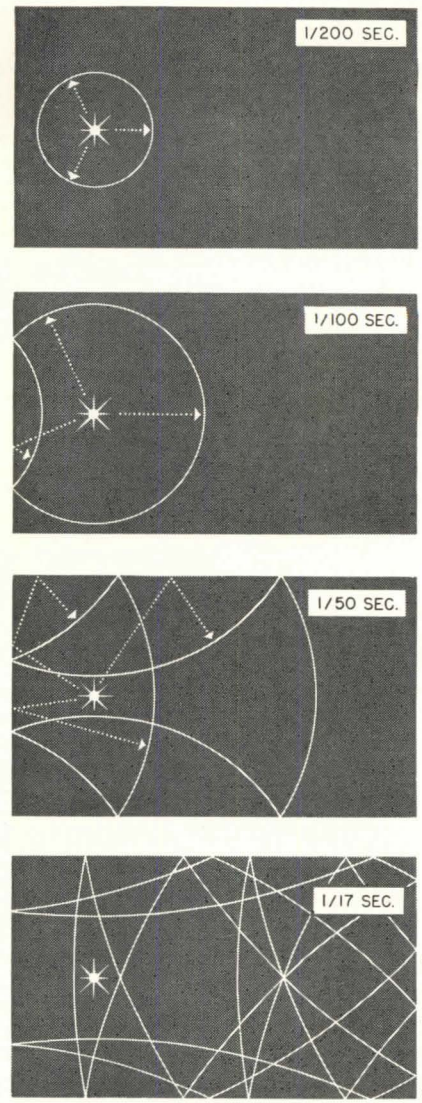
Action of sound on encountering a solid medium; in addition to being partially reflected, absorbed, or transmitted, sound is also refracted (changed in direction) by the more dense medium.

The theater offers an acoustic problem replete with complexities which arise out of the nature of the show and the habits of the audience. The architect and the engineer must work under a severe handicap unless they know show business.

The architect who knows show business well enough to design a theater will often feel competent to prepare plans and specifications which will result in adequate exclusion and elimination of noise. The more specialized task of getting the sound of the show to the audience usually calls for the services of a physicist or engineer trained in acoustics to undertake the requisite calculations and tests.

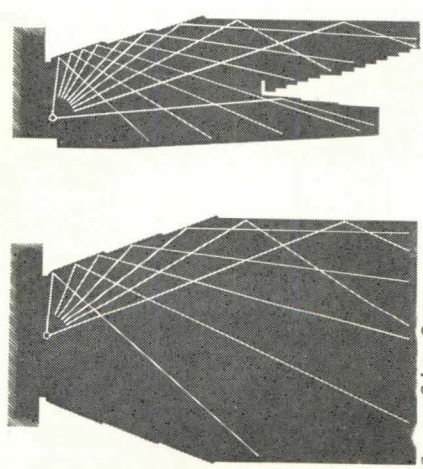
Action of Sound

In the theater useful sound emanates from actors, orchestral instruments, organ, and loudspeakers; located on the stage, in the pit, and above and at the sides of the proscenium. The architect's job is to get it to the paying customers no matter where they sit without distortion or appreciable loss of intensity. Getting the sound to *all* the customers is a problem of **distribution.** Getting it there at almost equal intensity everywhere and having it die away rapidly at a predetermined interval after it has ceased to emanate from the source, so as not to interfere with the next sound as it comes along, is a



Courtesy Celotex Corp.

Multiple reflections of a single sound wave front in a closed room.



Courtesy Celotex Corp.

Section (above) and plan of an auditorium designed to provide maximum reinforcement of direct sound. Stage area at left is incomplete.

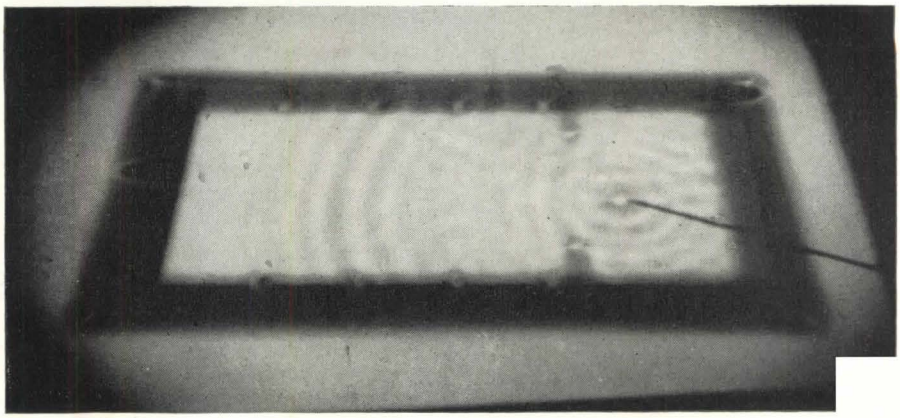
problem to be solved by achieving a certain **reverberation time.**

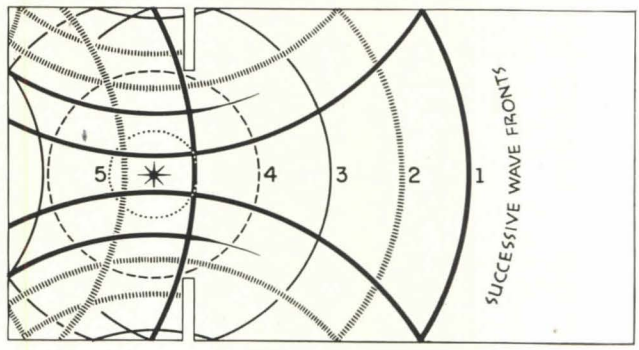
Part of the sound pressure wave goes straight from the source to auditor. Part of it is reflected from ceiling and walls. Part of it gets to the auditor after it has been reflected back and forth about the house many times. Part of it has been for a trip around the stage, or has been reflected from the scenery or cyclorama.

Distribution

Ceilings are the principal distribution surfaces. When ceilings are laid out, they must be planned to reflect the sound back to the audience, either directly or via walls, but in such a manner that it will neither be concentrated in certain spots, nor reflect back and forth between parallel surfaces, nor get to the audience out of phase with the direct wave. Moreover, since sound travels only about 1150 feet per second in air, the length of the path of the first reflected wave must not exceed that of the direct wave by more than 50 feet (preferably less) or the audience will hear everything twice.

The position of the side walls is determined by sight lines. The depth of the house (curtain to back wall) is governed by visibility requisites. Sound distribution requirements govern the shapes of the side walls, ceiling, ceiling under the balcony, and rear wall. The fact that the angle of reflection of a sound wave is equal to the angle of incidence (neglecting diffraction phenomena at low frequencies) makes it possible to lay out tentative shapes on paper. But since even the most unorthodox appearing shapes sometimes result in good theaters and vice versa, tests are necessary to establish the workability of any design. Plan and section of the theater may be tested for distribution in ripple tanks, three-dimensional models by spark photographs and by tracing reflections of a small beam of light. The technique of testing is fairly complex. It can only be pointed out here that rough approximations are possible with single gravity waves in water and mercury tanks and that, within some limitations, varying frequencies may be studied stroboscopically with capillary waves. Photographs and visual observation reveal: (1) desirable distribution; (2) undesirable standing waves (repeated reflections between two surfaces); (3) echoes (a number of reflected waves whose path of travel is long coming to the audience, or part of it, in phase); (4) dead spots, into which very little sound penetrates (as is sometimes the case under balconies or where direct and reflected waves arrive out of phase and cancel out); (5) focal points (such as the concentration of reflected waves on a small area of seats from a ceiling vault). When the wave pattern is rapidly broken up, and waves from all directions, of approximately equal size, cover the audience area, the distribution is probably satisfactory.





Above, actual photo of ripple tank test of a stage-auditorium model (see text); right, diagrammatic representation of multiple sound reflections in a horizontal plane, as revealed by the ripple tank. To the trained physicist or acoustic engineer this type of test indicates the acoustic properties of a specific theater shape. The architect needs the specialist's help.

Spark photographs (actual pictures of the sound waves in air) have the advantage of greater clarity than most ripple tank pictures and are useful in the study of diffraction phenomena, and precise location of sources of trouble.

A small beam of light, reflected from surface to surface in a model, makes it possible to trace with reasonable exactness the path of the center of a sound wave.

There are pitfalls to be avoided when sound distribution tests of architectural shapes are made:

1. Sound sources are at numerous locations and tests must be repeated for from 6 to 12 locations on the stage with various curtain trims as well as for all sound sources other than the stage.

2. Absorbent surfaces must be made non-reflecting (open or beached) in the model.

3. Stage and house must be tested together. They constitute a pair of coupled rooms. Plaster cycloramas *must* be designed as part of the acoustical planning of the *house* and tested with the house model. (A cyclorama can be tipped toward the back of the stage far enough to put its focal point out of harm's way. Thus rigged it is also easier to light than if it is vertical.)

4. Chandeliers, ceiling cuts for lights, and ventilation ducts *must* be included.

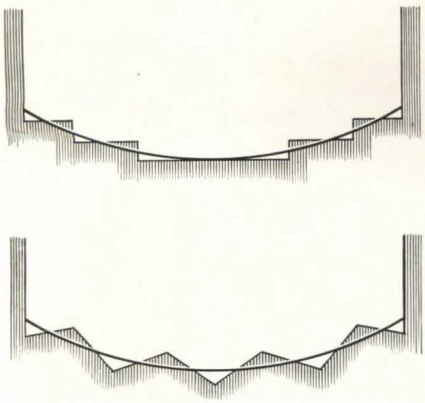
5. If reverberation calculations show any absorbent wall material to be desirable, its location must be determined by test so as not to interfere with sound distribution.

Finally, a ceiling under a balcony sloped up toward the back of the house, or a back wall which follows the curve of the seats, will almost invariably render good hearing impossible in at least part of the theater.

Reverberation

Reverberation is easy to calculate. But *what reverberation is desired* is another thing. The scale of desirable reverberation times runs from long for Widor's "Toccata" on the organ (it was composed to be played on the organ in St. Sulpice which is highly reverberant), to short, for speech which requires a high percentage of definition. In legitimate production, reverberation will vary from scene to scene depending upon the settings. The ideal theater will have provision for controling reverberation. At least one attempt to do this has been made, using wall panels which can be changed, but an analysis of the results is not at hand. Unless some means of controling reverberation is provided, the best that can be achieved is a compromise between the optimum times for the various types of productions.

Reverberation optima have been the subject of much investigation. Recent studies directed toward the determination of optimum reverberation time for various house volumes show slightly longer times than those considered optimum five years ago. Moreover, as clients demand more and more precise acoustic conditions, optimum reverberation times tend to increase slightly. In a theater planned for more than one type of production, if means are not provided



Methods of breaking up a curved rear wall of an auditorium to avoid focussed sound reflections. *(This and the two preceding drawings credited to Celotex Corp. are reproduced with permission from* Less Noise—Better Hearing, *by Hale J. Sabine, published by The Celotex Corp.)*

for reverberation control, it is well to choose a reverberation time which is an average between optima for speech and orchestral music. The better the first reflections are controlled the closer orchestral optima should be approached.

For the calculations, the house and the part of the stage enclosed in a box set are considered. Tolerances, if any, are best taken on the long side. This is done for two reasons: (1) tolerance involves a margin of error. If the house is too dead, its correction is costly; if it is too live, correction is usually simple and cheap; (2) in calculation of reverberation time no account is taken of the stage house outside the set. The stage house has, however, some effect on the reverberation: when plein-air sets are used, the effective volume is greater than with a box set. In hung shows in which the flies are full, there is more absorption than with a box set. Both these conditions in practice call for slightly longer reverberation than would be requisite in the house with the proscenium closed.

Optimum reverberation time, it must be noted, varies with frequency. In large houses (over 200,000 cu ft) a slightly longer reverberation in the low frequencies than in the highs is generally considered requisite. Recent investigations seem to indicate the desirability of reverberation times more nearly equal throughout the audible range than was standard some years ago. If the reverberation time is made equal throughout the audible frequency range, the sound absorption characteristics of the audience will slightly unbalance it in favor of the lows.

Unfortunately the theater does not play to the same sized audience at every performance. And the most neglected feature of acoustic planning is the provision of means of compensation for audiences of varying size. Yet it is possible to have the reverberation time the same with no one present as with a capacity house.

Each person in the audience absorbs a certain amount of sound. The unit of absorption is the sabine. If the acoustic specifications for the seats are so drawn that each seat empty absorbs as many sabines at the same frequencies as the seat plus a person sitting in it, the total absorption (and therefore the reverberation time) will be unchanged whatever the size of the audience. Seats and audience are therefore used to keep the reverberation time the same though the audience may vary in size. Before drawing seat specifications it is necessary to look into the question of what kind of people will constitute the audience and how they will dress. An audience of children will have fewer sabines than a matinee audience of women shoppers. Stiff shirts and bare shoulders are reflective as compared to soft shirts and afternoon dresses, a phenomenon which makes the traditional first night audience, at least acoustically, live.

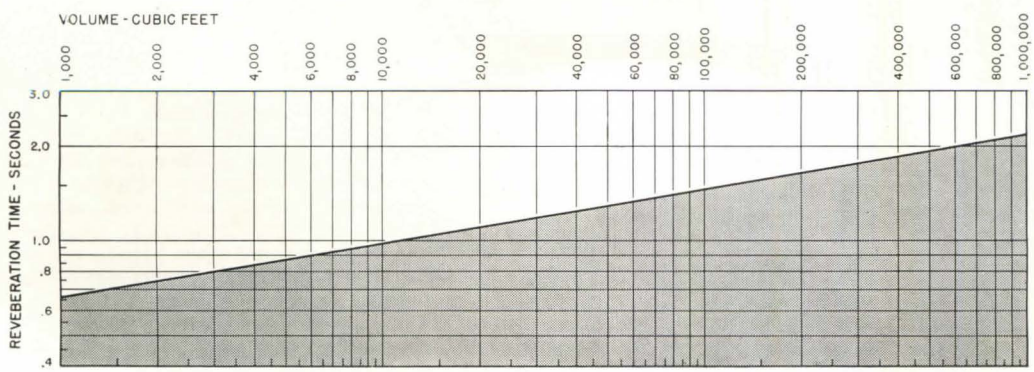
When more absorption than that furnished by the seats or audience is necessary, it is well to get it next from carpet (which serves to eliminate the distraction of noise emanating from the audience), next from decorative hangings which can be changed in position and size, and last from permanent absorbent wall surface materials located so as not to interfere with sound distribution.

Summary

The architect determines his house size from the necessary number of seats; its wall splay and depth from the requirements of good seeing; ceiling shapes from sound distribution and front stage lighting requirements; back wall and plaster cyclorama shapes by the necessity of preventing echoes and focal points. When model tests confirm the correctness of this much of the design, he may proceed.

His structure is conditioned by the necessity of avoiding resonance (it is generally believed that the organ caused the collapse of the roof in one theater). His wall surface and heat insulating materials he specifies to give him: (1) the correct total reverberation time; (2) absorption where and to the extent he needs it. His ceiling he generally keeps as highly reflective as possible to insure undiminished sound distribution.

He specifies seats which provide the same amount of absorption empty as do seat and occupant together when they are occupied. He insulates the theater against outside noise and prevents inside noise. One can count on the fingers of one hand the theaters in which all these requirements have been scrupulously met. No theater in which an honest attempt is not made to meet them is worth building.



Curve (developed originally for radio studios, also adaptable to other auditoria) showing optimum reverberation time with artists in place, as a function of studio size. Values within 30 percent of those shown can be compensated for by microphone placement. *(From an article by J. P. Maxfield in the Western Electric* Oscillator, *Copyright 1947, Western Electric Co., Inc.)*

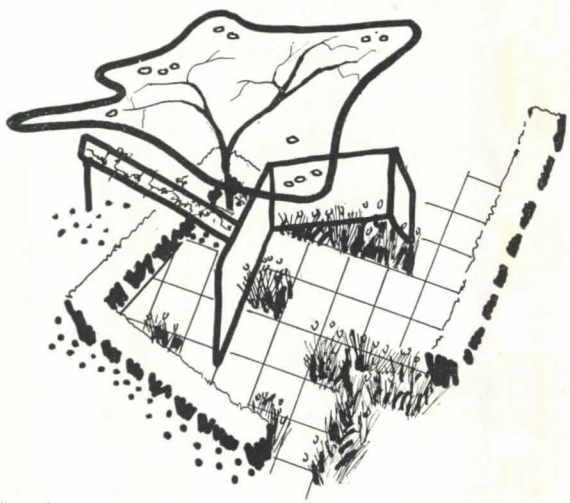
MODULAR GARDENS: PART II

JAMES C. ROSE, Landscape Architect

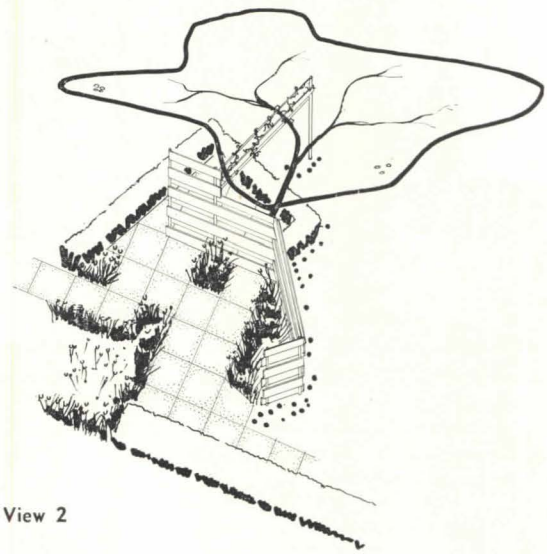
Last month we presented here the seven principal modular, standard elements necessary to design and build a wide variety of garden units, as well as several examples of their use. The seven modular elements were the trellis, 3-ft-square paving slabs, 3-ft-square planting beds, pool designed around the same module, basket-weave fencing, shojis (translucent screens), and steps composed of standard paving slabs on prefabricated risers which permit variable riser height. Below is another garden possibility which employs another type of fence.

The plant list, part of which also appeared last month, is continued on the next several pages. This list is set up for maximum usefulness. Thus plant materials are arranged according to their growth characteristics: *tracery* (trees; see September issue); *ground cover* (see September issue); *perennials* according to habit of bloom (spire, broom or bushy, horizontal, etc.), and so on. The designer searching for materials to achieve a certain desired effect can find, under the habit of growth or bloom, normal heights for each species, color and time of bloom, and any special requirements (time of planting, type of soil, unusual care needed, etc.) which would be important as guides to selection. Only the unusual requirements are noted. For instance, if no special soil requirements are listed, the assumption is that average good soil is satisfactory.

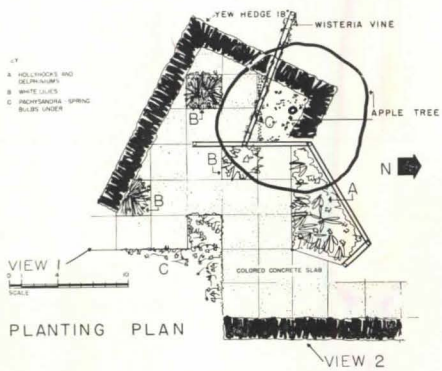
This is an *architectural* plant list; perennials, for instance, have been included on the basis of positive, generally pleasing color (no indeterminate or "difficult" shades) and transplantability (all can be moved into the garden at or close to blooming time and removed afterward). Thus planting materials can be chosen for definite color schemes and almost immediate effect, in the same way that wood, brick, or stone are selected for color, grain, texture, etc.



View 1



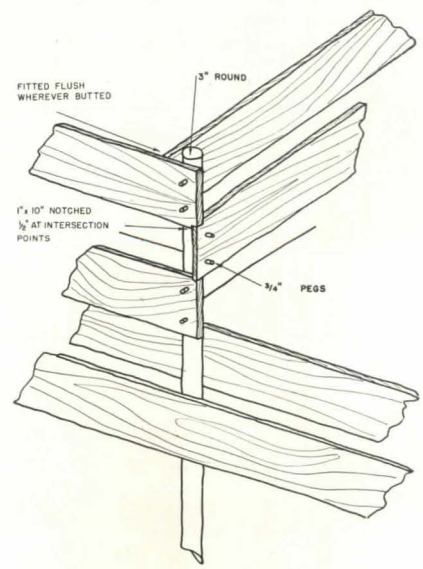
View 2



PLANTING PLAN

FENCED GARDEN

Another in the series of landscape incidents in which are used the modular garden elements introduced in these pages last month, this small garden is designed around the barrier which must often be erected between two areas used for different purposes. To screen off a mulch pile, garage entrance, drying yard, children's sandbox, etc., a fence may be needed. The type of fence illustrated, with horizontal boarding applied alternately on opposite sides of round posts, will screen out an unsightly view or unwanted activity, or will break up an undesirable strong wind to form a sheltered sitting space. Yet not all light will be blocked off; the open boarding should permit good air circulation. Access to other parts of the garden is assured by paths leading from the paved area.



Fence Details

PLANT LIST

CLIMBING VINES according to method of climbing

TWINING BY STEMS: climb best on an open, freestanding construction, sufficiently open to permit disentangled twining.

Actinidia arguta
Bower Actinidia
July: small, fragrant white flowers. **Sept.:** fruit greenish-yellow. Sun or shade. Fruit edible. Plant both sexes.

Akebia sp.
Akebia
May: reddish-brown fragrant flowers. **Sept.:** fruit bluish. Full sun. Light foliage causes lacy shadow pattern.

Aristolochia durior
Common Dutchman's Pipe
May: large yellow and brown flowers. Full sun or light shade. Rapid growth. Large leaves cause dense shade. Handpick or spray with lead arsenate for black caterpillars.

Celastrus orbiculata
Oriental Bittersweet
Oct.: red, yellow fruit. Sun or shade. Plants from seed often will not fruit. Buy certified plants; plant both sexes.

Lonicera sempervirens
Trumpet Honeysuckle
July, Aug.: scarlet flowers. **Sept., Oct.:** scarlet fruit. Full sun. Semi-evergreen.

Menispermum canadensis
Common Moonseed
Sept.: blue fruit. Full sun. Damp soil. Perennial.

Polygonum auberti
Silvervine Fleeceflower
Sept., Oct.: white flowers. Full sun. Prune back to live wood each spring.

Pueraria thunbergiana
Thunberg Kudzubean
July, Aug.: purple flowers. Full sun. Heavy soil. Withstands drought. No insect pests. Well-established clumps grow 50 ft in one season. Perennial in colder latitudes.

Wistaria floribunda
Japanese Wistaria
June, July: lavender or white flowers. Full sun. Flowers with foliage. When newly transplanted is often slow to bloom. Buy certified plants.

Wistaria sinensis
Chinese Wistaria
May: lavender or white flowers. See above.

CLINGING BY AERIAL ROOTLETS: climb best on flat, slightly rough surfaces, such as a brick wall.

Campsis radicans
Common Trumpetcreeper
July, Aug., Sept.: yellowish-red flowers. Full sun. Pinch back to keep bushy. Rich, moist soil; leafmold. Flowers attract hummingbirds.

Hedera helix baltica
English Ivy
Evergreen. Shade. Very hardy. **Gracilis** is the best cut-leaf variety.

Hydrangea petiolaris
Climbing Hydrangea
June, July: large clusters of small, cream-white flowers. Sun or light shade. Bold, dark foliage. Clings to stone, brick, wood without support.

Parthenocissus quinquefolia
Virginia Creeper
Sept., Oct.: blue fruit, red coloring into **Nov.** Sun or light shade. Almost any soil or location. Fast growing, hardy. Side shoots droop gracefully. Variety, **engelmanni** has small, leathery leaves, dense growth.

Parthenocissus tricuspidata
Boston Ivy (Japanese Creeper)
Aug., Nov.: red coloring, blue-black fruit in bunches. Sun or shade. Hardy wall covering. Clings to stone or wood.

COILING BY TENDRILS: climb best on freestanding constructions having some members not more than ½ in. in diameter.

Ampelopsis brevipedunculata maximowiczi
Porcelain Ampelopsis
Sept., Oct.: blue fruit. Sun, light shade. Clusters of porcelain-blue berries like miniature grapes.

Clematis jackmani
macropetala
montana
paniculata
July, Aug.: white, pink, violet, red, purple flowers. Full sun. Plant with tops of crowns 2 in. below surface. Prepare soil deeply and richly.

Vitis sp.
Grape
Sept., Oct.: purple, blue-black, green fruit. Full sun.

PERENNIALS: Spikes

HEIGHT	SCIENTIFIC and COMMON NAMES	BLOOM	PLANTING, TRANSPLANTING	REMARKS, SPECIAL REQUIREMENTS
3′-4′	**Aconitum fisheri** Azure Monkshood	**Sept.**, blue	**Oct., Nov.**	Soil: some moisture. Shade. For best bloom do not disturb clumps often.
4′	**Aconitum napellus** Aconite Monkshood	**Aug.**, blue	**Oct., Nov.**	Same as above.
4′	**Anchusa azurea, dropmore** Italian Bugloss	**June**, blue	**Mar., Apr.**	Soil: rich. Handle as biennial. Do not break fleshy roots.
2½′	**Artemisia albula** Silverking Sagebrush	**Apr.-Oct.** silver foliage	**Oct., Nov.**	Soil: good. Prune to prevent growing too large. Flowers inconspicuous.
2′	**Astilbe arendsi**	**June, July,** white, pink, red	**Oct., Nov.**	Soil: good. Plants well shaped, flowers profuse. Can be moved easily.
2′	**Campanula persicifolia: (var. grandiflora alba)** Peachleaf Bellflower	**June, July,** white	**Sept., Oct.**	Soil: good. Can be moved in full bloom.

PERENNIALS: Spikes (continued)

HEIGHT	SCIENTIFIC and COMMON NAMES	BLOOM	PLANTING, TRANSPLANTING	REMARKS, SPECIAL REQUIREMENTS
	Delphinium, Larkspur:			
3′-4′	Belladonna	June-Sept., light blue	Mar. or Nov.	Soil: rich, limey, deeply cultivated. Remove old flower spikes for continued bloom. Use Pyrox or Bordeaux spray for delph. black. Seedlings sown indoors, Mar., bloom Nov. Transplant seedlings in May.
3′-4′	grandiflorum, (var. chinense)	gentian blue		
3′-7′	Giant Pacific Hybrids (Galahad)	white		
3′-7′	(King Arthur)	dark blue		
3′-7′	(Summer Skies)	light blue		
3′-4′	Bellamosum	June-Sept., dark blue	Mar. or Nov.	Same as Belladonna. Foliage small, feathery; several flower spikes per plant. Plant 10-12 in. apart. Massed effects striking.
2½′	Dictamnus albus, Gasplant (var. Giant)	June, July, pink	Oct.	Soil: rich loam. Best grown singly. Avoid root disturbance after planting.
2′-3′	Kniphofia: new early-flowering hybrids Torchlily Hybrids	June, July, white, yellow, red	Oct., Nov.	Soil: good, deep. Dainty grass-like foliage with flowers above. Blooms best when well established. New hybrids noteworthy.
6′	Liatris scariosa: Gayfeather (var. September Glory)	Sept., purple	Oct.	Transplant after flowering. Striking plant in fall.
3′-4′	Lupinus polyphyllus Washington Lupine	June, July white, pink, blue	Mar. or Oct.	Soil: good, deep, some lime.
	Phlox decussata:			Transplant divisions in Nov. Water
2½′	(var. Daily Sketch)	July, Aug., pink	Nov.	well in growing season.
3′	(var. Leo Schlageter)	July, Aug., red	Nov.	Same as Daily Sketch.
2½′	(var. Marie Louise)	July, Aug., white	Nov.	Same as Daily Sketch.
1½′	Physostegia virginiana (var. Vivid), Virginia Lionsheart	July, Aug., Sept., pink	Sept., Oct.	Long flowering period
1′	Primula japonica Japanese Primrose	June, white, red, pink	Sept., Oct.	Moist location, shade. Does well near water. Foliage dies down in winter.
9″-12″	polyantha, Primrose (Munstead Strain)	May, June, white, yellow, red, pink	Mar. or Sept., Oct.	Soil: moist, rich, well manured. In flower a month or more.
4′	Thalictrum dipterocarpum Yunnan Meadowrue	Aug., Sept., rosy purple	Oct., Nov.	Transplant after flowering.
15″	Veronica: (Blue Peter) Speedwell	June, July, blue	Mar., Apr. or Sept., Oct.	Soil: good, deep. Easy to grow. Plant in groups of three or more.
4′-6′	Yucca filamentosa, Adamsneedle	June, July, white	Oct.	Soil: deep. Evergreen; do not disturb.

PERENNIALS: Broom

1½′	Achillea ptarmaica, Sneezewort (var. Snow Ball)	June, July, white	Oct., Nov.	Cut back in August after flowering. Divide every 3 years.
2′-3′	Anemone japonica: Japanese Anemone	Sept., white, pink	Oct.	Soil: rich, good drainage, water in dry weather. Plants improve year by year.
2′	Anthemis, Moonlight Chamomile	June, yellow	Oct.	Soil: rich. Lift and divide in October. Flowers profuse, long stemmed.
1′	Aster, dwarf Dumosus hybrids	Sept., pink, white, blue	Nov.	Divide in Nov. Can be potted (12″ pots) and plunged for immediate effect.
1′	Aster, species, hybrids: Frikarti, Wonder of Staffa	June-Aug., lavender	Mar. or Oct.	Early flowering; low. Can be grown in pots.
1′	Star of Wartburg	Apr., May, blue	Mar. or Oct.	Same as Frikarti.
1½′	Chrysanthemum: Coccineum, Pyrethrum	May, June, white	Mar. or Sept.-Oct.	Showy, early flowering. Divide every 3 years.
2½′	leucanthemum (var. White Swan)	June, white; double	Mar., Apr.	Soil: rich, moist. Divide when centers of plants die (every 2-3 yrs.).
2½′	maximum (var. Majestic) Pyrenees Chrysanthemum	June-Sept., white	Mar., Apr.	Same as leucanthemum. Flowers single.
2′	Coreopsis lanceolata (var. Mayfield Giant)	June-Oct., yellow	Oct.	Soil: good, well drained.
2½′	Dicentra spectabilis Common Bleedingheart	May, June, pink	Oct.	Soil: cool, deep. Foliage dies August, plant dormant until spring.

PERENNIALS: BROOM (continued)

HEIGHT	SCIENTIFIC and COMMON NAMES	BLOOM	PLANTING, TRANSPLANTING	REMARKS, SPECIAL REQUIREMENTS
2′	**Doronicum caucasicum** Caucasian Leopardbane	**May**, yellow	**Oct.**	Soil: cool, rich. Avoid moving. Relatively pest-free.
2½′	**Echinops ritro**, Globethistle	**June, July**, blue	**Apr.**	Sun or semi-shade. Striking flower.
2′	**Eryngium amethystinum** Amethyst Eryngo	**June, July**, amethyst blue	**Apr.** or **Oct.**	Light soil. Plant in groups of 5 or 7 for massed effect.
	Geum—Avens:			
1½′	**(var. Fire Opal)**	**June, July**, red	**Aug., Sept.**	Fine foliage. Divide every 3 years.
1½′	**Lady Stratheden**	**June, July**, yellow	**Aug., Sept.**	Same as Fire Opal.
3′	**Heliopsis scabra incomp.**	**July, Aug.**, yellow	**Oct., Nov.**	Soil: rich, plenty of moisture.
	Hemerocallis—Daylily:			
1½′-2½′	**Dr. Regel**	**May, June**, yellow	**Sept., Oct.**	Lift and divide every 3 years. Needs sun for best bloom. No real basic color in new hybrids yet.
1½′-2½′	**Hyperion**	**July, Aug.**, yellow	**Sept., Oct.**	
1½′-2½′	**Mrs. W. H. Wyman**	**Late July, Aug.**, yellow	**Sept., Oct.**	
1½′	**Heuchera sanguinea** Coralbells	**June, July**, red	**Oct.**	Soil: rich, light. Sun or semi-shade. Divide every 3 years. Water in dry weather.
	Iris Germanica—German Iris:			
4′	**(var. Alta California)**	**June**, yellow	**Sept., Oct.**	Soil: good, well drained. Do not plant deeply.
3′	**(var. Goblin Red)**	**June**, red	**Sept., Oct.**	Same as Alta California.
3′	**(var. Midgard)**	**June**, yellow	**Sept., Oct.**	Same as Alta California.
3′	**(var. Wedgewood)**	**June**, blue	**Sept., Oct.**	Same as Alta California.
	Iris Kaempferi—Japanese Iris:			
3′	**(var. La Tosca)**	**July**, white	**Sept., Oct.**	Soil: moist, rich. Dislikes lime.
3′	**(var. Light in the Opal)**	**July**, pink	**Sept., Oct.**	Same as La Tosca.
3′	**(var. Queen of the Blues)**	**July**, blue	**Sept., Oct.**	Same as La Tosca.
	Iris sibirica—Siberian Iris:			
2½′	**(var. Caesar's Brother)**	**June**, dark blue	**Sept., Oct.**	Extremely hardy. Showy flowers on stiff stems. Divide every 3 or 4 years.
3½′	**(var. Perry's Blue)**	**June**, light blue	**Sept., Oct.**	
3′	**(var. Snow Queen)**	**June**, white	**Sept., Oct.**	
3′-6′	**Lilium: Auratum** Goldenband Lily	**Aug.**, gold banded, white; fragrant	**Oct., Nov.**	Soil: loose, rich, well drained, pH6-6.5. Sun, semi-shade. Stem-rooting; plant 10″ deep. No lime.
3′-4′	**candidum** Madonna Lily	**June**, white	**Aug., Sept.**	Soil: loose, rich, pH6-6.5. Plant French-grown bulbs 2″ deep.
1½′-2′	**elegans (var. Alice Wilson)** Thunberg Lily	**June, July**, yellow	**Oct., Nov.**	Soil: loose, rich, pH6-6.5. Sun, semi-shade. Plant 8″ deep. Stem-rooting. Endures lime.
3′-4′	**formosanum** Formosa Lily	**Aug., Sept.**, white; fragrant	**Oct., Nov.**	Soil as above. Sun, semi-shade. Stem-rooting; plant 5″-6″ deep.
4′-5′	**Henryi** Henry Lily	**July, Aug.**, orange	**Oct., Nov.**	Soil: loose, rich, tolerates lime. Plant 10″ deep; stem-rooting. Hardy, vigorous. Semi-shade.
3′-4′	**regale** Regal Lily	**July**, white	**Oct., Nov.**	Soil: endures lime. Sun, semi-shade. Stem-rooting; plant 6″ deep.
3′-4′	**speciosum album** Speciosum Lily	**Aug., Sept.**, white	**Oct., Nov.**	Sun, semi-shade. Not as robust as S. rubrum. Stem-rooting.
3′-4′	**speciosum rubrum** Pink Speciosum Lily	**Aug., Sept.** pink spotted	**Oct., Nov.**	Same as album.
2′	**umbellatum erectum** Western Orangecup Lily	**June**, orange red	**Oct., Nov.**	Sun, semi-shade. Stem-rooting; plant 6″ deep. Flowers upright, stiff stems.
1½′	**Linum narbonnense** Narbonne Flax	**June-Aug.**, blue	**Oct.**	Soil: light, sandy. Forms spreading clump; attractive foliage.
1′	**Lychnis viscaria (var. splendens florepleno)** Double Rose Campion	**May, June**, pink	**Oct.**	Brilliantly colored.
1½′	**Mertensia virginica** Virginia Bluebell	**May, June**, blue	**Sept., Oct.**	Soil: woodland, no lime. Shade. Easy to grow.
3′	**Monarda didyma**, Beebalm **(var. Cambridge Scarlet)**	**June-Aug.**, red	**Oct.**	Soil: light.
1′	**Polemonium caeruleum (var. Blue Pearl)**, Valerian	**Apr., May**, blue	**Mar.** or **Sept., Oct.**	Sun, semi-shade. Divide every 3 years.
2′	**Salvia pratensis** Meadow sage	**June, July**, blue	**Aug., Sept.**	Soil: light, well drained. Grow in masses, plant 9″ apart.
1½′	**Stokesia laevis alba** White Stokesia	**July-Oct.**, white	**Mar., Apr.** or **Sept., Oct.**	Soil: rich. Sheltered location. Var. **Blue Moon** is blue.
1½′	**Trollius europaeus ledebouri** Common Globeflower	**May, June**, orange	**Oct., Nov.**	Soil: moist. Transplant after flowering. Very showy.

MANUFACTURERS' LITERATURE

PROGRESSIVE ARCHITECTURE—330 West 42nd Street, New York 18, N. Y.
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★ *Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

Air and Temperature Control

1-131. *Blowers and Exhausters (Bul. B-5)*, 18-p. illus. booklet on centrifugal heavy-duty, cast iron, high-volume blowers and exhausters. Sizes and capacity tables. Ordering and technical data. Applications. Other Billmyre systems and equipment. Lamson Corp., Allen Billmyre Div.

1-126. *Pressure Controllers, External-Pilot-Operated (Bul. 462)*, Leslie Co. Reviewed September.

1-127. *Rules and Regulations for Installation of Heating Cable for Radiant Heated Buildings, Soil Heating*, Div. of Safety, Dept. of Labor and Industries, Electrical License Div., State of Washington. Reviewed September.

★ **1-132.** *Marvair, Year Round Comfort*, 20-p. illus. booklet on a "heat-pump" (reverse-cycle refrigeration) heating system which, by compression, uses heat extracted during a refrigeration process to warm air which is then circulated through the space to be heated. Marvair requires a deep well as its heat source. One setting of the heat control maintains even temperature all day. 220-V 60-C current; no other "fuel." For houses, other small buildings. Charts, tables, selection and application data. Muncie Gear Works, Inc.

1-133. *Rheem, Residential Stoker Furnaces, AIA 30-B-1*, 7-p. illus. booklet on stoker furnaces for winter air conditioning in houses. Bin-feed models; types of controls and dimensional drawings. Specifications, capacity tables and appliance products charts. Rheem Manufacturing Co.

1-128. *Base-Ray Taco Radiant Heating Systems (BT-147)*, Taco Heaters, Inc. Reviewed September.

1-135. *South Wind, Sealed Heat (Form 07-490)*, 6-p. illus. booklet on a gas-fired forced warm air unit heater (adapted from airplane heaters) for installing between studs or joists. Vented directly outdoors; no chimney needed. For houses, small installations. Stewart-Warner Corp., South Wind Div.

1-129. *Refrigeration Units (C-1100-B-42)*, Worthington Pump and Machinery Corp. Reviewed September.

Doors and Windows

4-105. *Ceco Residence Casements, Types, Sizes, and Suggested Details (Bul. 1006)*, 7-p. illus. booklet on residence casement windows with swing-out ventilators with underscreen. Specifications. Illustration of types and sizes available. Installation drawings and details. Data on screens. Ceco Steel Products Corp.

4-101. *The Window of the Future Today!* Gate City Sash & Door Co. Reviewed September.

4-106. *Preferred Nation-Wide, The Grand Rapids Invisible Sash Balance (Form 47-SB-1), AIA 27-A-1*, 12-p. illus. booklet on a concealed sash balance for double-hung wood windows. Available in 10 sizes for residential use. Installation data. Tension adjustment chart. Specifications. Grand Rapids Hardware Co.

4-102. *Golly! It's Magic (Bul. 2077)*, Marquart Millwork Co. Reviewed September.

4-103. *Orange Metal Doors, AIA 16-A*, Virginia Metal Products Corp. Reviewed September.

4-104. *Design Into Your New Construction*, Zegers, Inc. Reviewed September.

Electrical Equipment and Lighting

5-92. *Colors that Sing Under "The Invisible Ray,"* 10-p. illus. booklet on "black light" used in combination with fluorescent paints, etc. Accessories. Price list. Black Light Products.

5-89. *Tulox Fluorescent Diffusers*, Extruded Plastics, Inc. Reviewed September.

5-93. *Cold Cathode Fluorescent Lighting* (5" x 8½"), 16-p. illus. booklet on "cold cathode" lamps. Explanation of principles. Technical data on manufacture of the tube and equipment used to regulate it. Current, life, and output tables. Charts on effect of ambient temperatures. Fluorescent Lighting Assn.

5-91. *Tung-Sol (Form A-41)*, Tung-Sol Lamp Works, Inc. Reviewed September.

★ **5-94.** *The "General" Idea is Simple*, 14-p. illus. booklet on a remarkably well designed series of lighting fixtures for commercial, residential, and office use. Series includes *Accentlights* with swivel mounting, with or without gooseneck or rigid arm; louver and color filter attachments available; one or two lights per outlet box, also portables and pin-ups. Also: *Rotobeam* which has recessed box for flush installation; box revolves 360°, lamp housing tilts to 45°. *Hi-Hat* is circular fixture for flush recessing, shallow or deeper models; Fresnel lens units, round or square, also for flush mounting. Fluorescent fixtures for recessing or showcase lighting, and suspended *Fluorobeam* which combines fluorescent tubes and incandescent adjustable fixtures. All available in brushed aluminum finish, some in white. General Lighting Co.

★ **5-95.** *Portfolio of Planned Lighting Equipment, AIA 31F-23*, 8-p. illus. booklet on recessed deep and shallow troffers. Variety of lighting accessories provides versatile use. Specifications and installation data. Also seven data sheets (punched for 3-ring binder) on other fluorescent models. Applications. Detailed drawings. The Edwin F. Guth Co.

5-96. *Kayline, Commercial Lighting, AIA-31-F (Cat. 47)*, 34-p. illus. booklet on lighting fixtures for hotels, schools, restaurants, offices, etc. Illustrations. Sizes, wattage. Price list. Kayline Co.

★ **5-97.** *Swivelier Lighting Units (Bul. 105-A)*, 16-p. illus. pamphlet on various lighting units with swivel mounting; also adjustable hood-shades to direct light to any position desired. Applications, sizes, prices. General specifications. Swivelier Co., Inc.

Finishers and Protectors

6-103. *Cut-to-Length Flock*, 10-p. booklet on rayon flock for decorative and functional uses. Contains 24 standard-color samples. Data on manufacturing process; list of applications. Behr-Manning Corp.

6-104. *Camp Floor Resurfacing and Patching Materials* (3½" x 9"), 6-p. illus. brochure on various flooring materials for underlayment, leveling, patching, and resurfacing industrial floors. Uses and application data. Sizes, weights, and prices. The Camp Co.

6-102. *101 Useful Luminescent Applications*, The New Jersey Zinc Sales Co. Reviewed September.

MANUFACTURERS' LITERATURE

6-105. *Aquella and Concrete Masonry Construction,* 12-p. illus. booklet on this well known waterproofer for masonry surfaces. Pictorial examples of use. Specifications. Prima Products, Inc.

Insulation (Thermal, Acoustic)

9-72. *Steel Sheets That Insulate,* American Flange & Mfg. Co., Inc. Reviewed September.

9-73. *Facts You Should Know About Home Insulation (TD-2-346),* Armstrong Cork Co., Building Materials Div. Reviewed September.

★ **9-75.** *Holding Low Temperatures with Better Insulation,* 20-p. illus. booklet on methods of improving insulation in cold storage, freezing, cooling, air-conditioning, refrigeration, and food distribution. Presents problem, solution, and benefits for each category. Vapor-proofing data. Specifications. Industrial Mineral Wool Institute.

9-76. *Johns-Manville Built-Up Roofs (Bul. 51A),* 20-p. illus. specification manual. Installation data on *Flexstone* roofs, tar and gravel roofs, special roofs; *Asbestile* systems of flashing. Analysis charts. Detail drawings. Johns-Manville.

9-74. *Insulating Varnishes (CDR-13),* General Electric Co., Resin & Insulation Materials Div. Reviewed September.

9-77. *Para-Plastic,* 4-p. illus. folder on rubberized asphalt joint sealer for pavements. Lists types available, and specific applications. Advantages. Servicized Products Corp.

Load-Bearing Structures

12-126. *Marble Forecast, AIA-22-A,* Marble Institute of America, Inc. Reviewed September.

12-129. *Ideas for Commercial Application, Insulux Glass Blocks,* 16-p. illus. booklet. Application, advantages, and installation data. Designs, sizes, descriptions. Owens-Illinois Glass Co., Insulux Products Div.

12-130. *Rilco Dwellings,* 4-p. illus. folder on a prefabricated house consisting of wood panels assembled with bolts, available in sizes 7″-24″ wide by any length in multiples of 0″-4″. Rilco Laminated Products, Inc.

12-131. *How to Raise Rilco Rafters,* 4-p. illus. folder on method of raising rafters for barn frames. Foundation data; preparing and raising the rafters. Barn frame drawings and details. Rilco Laminated Products, Inc.

12-127. *Modern Building with Wood,* Timber Engineering Co. Reviewed September.

12-128. *Western Concrete Piles and Caissons,* Western Foundation Co. & Western Concrete Pile Corp. Reviewed September.

Materials of Installation

13-60. *Installing Teco Timber Connectors in Light and Heavy Timber Structures, AIA 19-B,* 12-p. illus. booklet on various types of connectors for timber structures; replace nails and bolts. Installation data. List of lumber and connector literature available. Timber Engineering Co.

★ **13-61.** *U. S. Aluminum Building Wire Handbook (Form M-7876),* 31-p. illus. booklet on use of aluminum for electrical wires and cables. Test results. Tables of current-carrying capacity, weight comparison, physical and insulation properties. Soldering data. Advantages. Lists complete line of wire and cables produced. Also 4-p. brochure lists prices, sizes, weights, and current carrying capacities. U. S. Rubber Co.

13-58. *Chromtrim Aluminum Mouldings,* R. D. Werner Co., Inc. Reviewed September.

13-59. *Champion Light-Duty "C" Clamps (Bul. 49),* The Western Tool & Mfg. Co., Inc. Reviewed September.

Non-Load Bearing Structures

14-40. *Julius Blum & Co.,* Julius Blum & Co., Inc. Reviewed September.

14-44. *Magnesium (Form DM 102-50M-746),* 16-p. illus. booklet on magnesium for all types of commercial uses when lightness in metal facilitates handling. Mechanical properties of alloys. Applications. The Dow Chemical Co.

14-41. *Magnesium Alloys (Form DM 76C-75-C-746),* The Dow Chemical Co. Reviewed September.

14-42. *Textolite Laminated Plastics (CDP-548),* General Electric Co. Reviewed September.

★ 3 booklets on *Johns-Manville System of Unit Construction (Form BM 312 A),* Johns-Manville:

14-45. *Wall Units,* 24-p. illus. booklet on construction of movable transite walls facilitating expansion or subdivision. Installation data and technical drawings.

14-46. *Ceiling Units,* 16-p. illus. booklet on acoustical materials. Application. Construction details and drawings.

14-47. *Floor Units,* 10-p. illus. booklet on asphalt tile flooring. Application. Color charts.

14-43. *Plastics, The Story of an Industry,* Society of the Plastics Industry, Inc. Reviewed September.

14-48. *Lumitrim, Aluminum Castings with Color,* 4-p. illus. folder on aluminum trim to replace wood trim. Advantages. Specifications. Color selections, installation data. Southwestern Mfg. & Supply Co.

Sanitary Equipment, Water Supply and Drainage

★ **19-165.** *Bradley Group Washing Equipment (Cat. 4701), AIA 29-H,* 24-p. illus. booklet on various kinds of group showers, washing and drinking fountains. Description and technical drawings. Applications and specifications. Dimensional details and installation data; also washroom planning information. Bradley Washfountain Co.

19-157. *Pump Engineering Data,* Economy Pumps, Inc. Reviewed September.

19-158. *Solves Today's Biggest Problems in Underground Pipe Insulation (Form 4704-3-47 SPS),* Ric-Wil Co. Reviewed September.

19-159. *Washroom Advisory Service, AIA 29-i,* Scott Paper Co. Reviewed September.

★ **19-166.** *Laundromat-Equipped Planned Laundries for Apartment Houses (7AW M 5901),* 8-p. illus. booklet on planned laundry centers for new or existing apartment houses. Tables and data on location, number of buildings served and utility services needed. Ventilation requirements. Westinghouse Electric Corp., Appliance Div.

19-167. *Yeomans Expelsor (5M-I-47-ERW),* 10-p. illus. booklet on large-size centrifugal pump for pumping sewage and drainage for municipal and industrial use; institutions, city buildings, ships, etc. Operates with plant's own air or steam, or by means of separate air compressor. Installation and specification data. Dimensional drawings. Guides to sizes and types. Yeomans Bros. Co.

19-160. *Yeomans Type HSD, Single Stage, Double Suction Pumps, AIA 29d5 (Bul. 1600),* Yeomans Bros. Co. Reviewed September.

★ **19-168.** *Service Catalog (47-1),* 76-p. illus. catalog on complete line of Zurn plumbing, building, and drainage products. Sizes, weights, and dimensional tables. Prices and specification data. Technical drawings. J. A. Zurn Mfg. Co.

Specialized Equipment

19-161. *American Standards, 4701,* American Standards Assn. Reviewed September.

19-169. *American Safety Standards (PM 87),* 20-p. booklet listing 200 standards of safety and industrial health issued by American Standards Assn. Gives brief description of standard and price of each. Brief introduction on development of safety standards. American Standards Assn.

19-170. *Autocall, The Great Time Saver,* 10-p. booklet illustrating benefits of an electrically operated paging service. The Autocall Co.

19-162. *How To Get The Most Value with Ozalid,* Ozalid, Div. of General Aniline and Film Corp. Reviewed September.

19-171. *Permanent Magnets (3-47),* 35-p. illus. booklet on permanent magnets for motors, generators, control devices, communication equipment, meters, instruments, etc. Characteristics and designs. Physical properties. Demagnetization curves. Specifications and applications. Magnet terms. Ordering data. General Electric, Chemical Dept., Metallurgy Div.

19-163. *Cooking Electrically (ER-46),* National Electrical Mfrs. Assn. Reviewed September.

Surfacing Materials

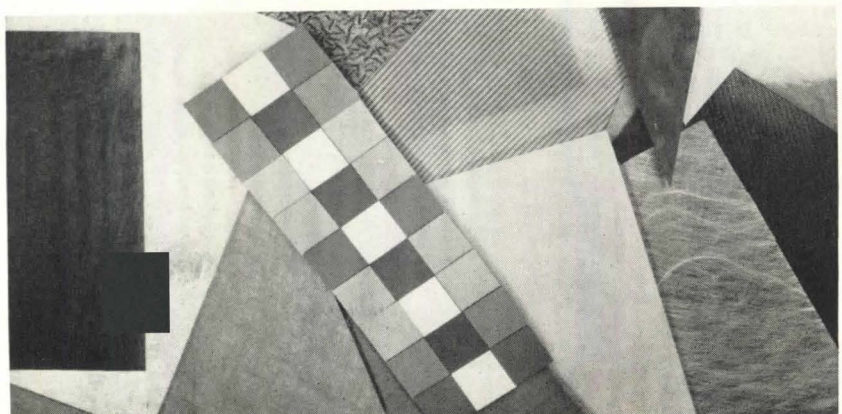
19-174. *Industrial Floors by Armstrong,* 8-p. illus. booklet on floors for various types of industrial uses. Characteristics; basic properties. Special features, typical uses. Installation specifications. Armstrong Cork Co.

19-164. *Weldtex Striated Plywood,* U. S. Plywood Corp. Reviewed September.

Traffic Equipment

20-43. *Murphy Electroil Elevators,* 8-p. illus. booklet on hydraulic lifts for short travel; require no penthouse. Typical equipment and installation. The Murphy Elevator Co., Inc.

Above and right, photos showing the product, the process, and the tools used in "wood-welding" (securing wood with resin glue, electrothermally, without nails or screws). *Top*, executive offices, Mayfair Co., Los Angeles, Calif. (Paul R. Hunter, architect) paneled in matched-grain oak plywood "wood-welded" to ⅜" plywood backing. *Center left*, prima vera paneling being applied directly to old plaster walls; *center right*, "welding" parquet flooring, in new construction, to diagonal subflooring; *right*, the portable high-frequency Woodwelder handgun, used like an electric iron, which operates on the 1-Kw generator shown above. Cost of units is from $395 up. Manufacturer: Woodwelding, Inc., 3000 W. Olive St., Burbank, Calif.



Left is shown another plastics development: Selectron 5000 Resins (Pittsburgh Plate Glass Co., Pittsburgh 22, Pa.), a resin series of which one group is suitable for coating porous materials (rough textures, cellular glass, fiberboard, cinder brick, etc.).

THIS AMAZING WORLD!

We learned recently that there are at least four manufacturers of heat pumps (fueless heating systems and reverse-cycle refrigeration are other names; see December 1946 PROGRESSIVE ARCHITECTURE) getting ready for commercial production: General Engineering & Mfg. Co., St. Louis 16, Mo. (Gemco); Drayer-Hansen Co., Los Angeles, Calif. (Airtopia); Muncie Gear Works, Muncie, Ind. (Marvair); and Terra-Temp Co., Indianapolis, Ind. Are we dreaming?

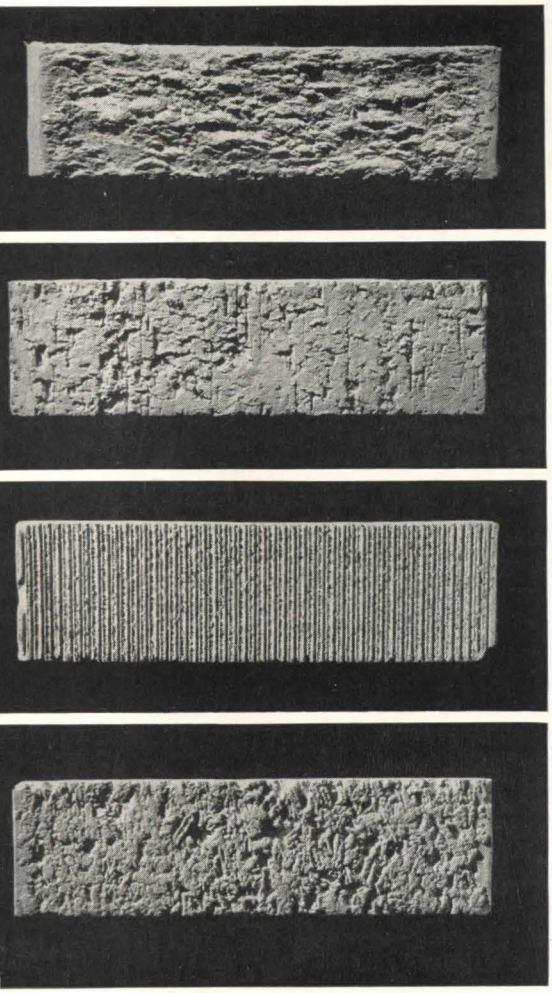
And since we published our recent piece on electrostatic air cleaning we've heard of numerous manufacturers and products in this field. One, the *Raytheon* electrostatic precipitator (Raytheon Mfg. Co., Inc., New York 17, N. Y.) is being installed in that city's Madison Square Garden. It is guaranteed to remove even cigar smoke from the Garden's atmosphere, which is probably progress. Time was when, sniffing at the Garden's portals, a blind man could have told whether a bout of fisticuffs, a circus, a grunt-and-groan match, or an antique show was going on within. Maybe, now, the strong odor of the circus (and other) animals will have to yield to science.

FOLDING DOORS

New Castle Products, Inc., New Castle, Ind., announces a new development in Modernfold accordion-folding doors and partitions. Since 1936 this product has been custom-built to any desired size. The company is standardizing part of its production, and will produce two standard accordion doors, both for openings 6'-8½" high, one for openings 2'-4" wide, the other for 2'-10½" openings. The custom-built line will be continued.

NEW DOOR CHECK

Pittsburgh Plate Glass Co., Pittsburgh 22, Pa., announces a new checking floor hinge of very small size (6¼" x 6¼" x 6½") designed for use with heavy doors. They think so much of the "life-time Pittco checking hinge" and have built it so well that they have permanently sealed the mechanism in oil. Originally built for use with Herculite tempered glass doors, this makes possible buying door and hinge as an integrated unit. The hinge, which can be adjusted, leveled, etc., on the job, can also be ordered separately.



Special types of brick (Malvern Brick & Tile Co., Malvern, Ark.) available in a wide range of remarkable colors: deep chocolate browns, lighter browns, creams, ivories; also in a number of unique textures; and in special types, shapes, colors, and textures to order.

Owens-Corning Fiberglas Corp. is building a cavity wall house with the cavity filled with Fiberglas insulation, for testing as to thermal conductivity. Photo shows thermo-couple being inserted in wall during construction. (Ed. Note: Everyone we've talked to says "Keep the cavity *opens!*")

THIS MONTH'S PRODUCTS

AIR AND TEMPERATURE CONTROL

Amcoil Comfortaire Conditioner. Method of air conditioning which lowers room temperature and removes moisture from the air without over-cooling. Available in 2 models for houses, shops, laboratories, etc. American Coils Co., 25-27 Lexington St., Newark 5, N. J.

Filter-type Ilgairators. Filter-type ventilating fan unit which brings in outside air, filters it and distributes it in amount and direction desired. Said to alleviate hay-fever, eliminate 98% of soot, dust, street noise. Runs on noiseless motor 26"-30", 30"-36", and 36"-45" window widths. Ilg Electric Ventilating Co., 2850 N. Pulaski, Chicago, Ill.

Leslie Box Frame Louver. A flanged, self-framing ventilating louver for attic wall installation. Has rigid box frame, designed to eliminate dirt and moisture-collecting pockets at juncture of vanes and sides. Comes in 5 sizes. Leslie Welding Co., 2943 W. Carroll Ave., Chicago 12, Ill.

DOORS AND WINDOWS

Ware Aluminum Windows. Aluminum-alloy casement and awning type windows with roto controls which permit operation from inside. Has electrically flash-welded joints and stainless steel pin hinges. Ware Laboratories, Inc., 21 West St., New York, N. Y.

Compact Door Closer. A noiseless door-closer; a third the size of conventional types. Moving parts run in oil; closing speed regulated by flow of oil. Automatically self-reversible for right- or left-hand doors. Yale & Towne Mfg. Co., Chrysler Bldg., New York 17, N. Y.

Michael d Automatic Door Seals. A non-tarnish, aluminum door-seal. Height 2"; width 30", 32", 36", and 42". Michael d, 781 E. Washington Blvd., Los Angeles 21, Calif.

ELECTRICAL EQUIPMENT AND LIGHTING

No-Shok Receptacle. Twin outlet acts as protector over plug; prevents fingers from coming in contact with current carrying parts, or admittance of foreign objects. Bell Electric Co., 1844 W. 21st St., Chicago 8, Ill.

Circlarc. An economical semi-circular fluorescent lamp. For table and floor lamps, wall and ceiling fixtures, merchandising displays, etc. Westinghouse Electric Corp., Lamp Div., P. O. Box 1017, Pittsburgh 30, Pa.

FINISHERS AND PROTECTORS

Decaznot. An odorless wood preservative; new ingredient prevents sediment formation, eliminating necessity of stirring or shaking. Coopers Creek Chemical Corp., W. Conshohocken, Pa.

Gillespie Colors In Oil. Triple-ground colors for tinting oil, synthetic, and varnish type paints and enamels; or for graining and glazing. Available in 31 standard basic shades. Gillespie Varnish Co., 182 Dey St., Jersey City 6, N. J.

Glasfab. A mesh waterproof membrane made from Fiberglas yarn for roofing and use in construction industry. Is rot-proof; not affected by hot coal tar or asphalt bitumens. Lexington Supply Co., Cleveland, Ohio.

Clear Coat. An odorless, non-slip linoleum finish having a synthetic resin base. May be walked on two hours after application. Said not to turn yellow or curl linoleum. Comes in pint and quart glass containers. O'Brien Corp., 101 N. Johnson St., South Bend 21, Ind.

LOAD-BEARING STRUCTURES

Alcoa Industrial Roofing. An aluminum, lightweight, heavy-duty roofing and siding for industrial building. Said to be resistant to industrial atmosphere; requires no paint or roofing preservatives. Aluminum Co. of America, 801 Gulf Building, Pittsburgh 19, Pa.

Dantore. A lightweight plaster aggregate which replaces sand in plaster, thereby greatly reducing weight of plaster. Resists checking and cracking in house settling. Consists of heat-expanded volcanic glass grains; has insulation, fire-resistant properties. Dant & Russell, St. Helens, Ore.

SANITARY EQUIPMENT, WATER SUPPLY AND DRAINAGE

Hamilton Dryer. An automatic, time-controlled gas or electric clothes dryer. Equipped with thermostat which maintains uniform temperature of 190°. Electric fan exhausts moisture. Porcelain-enameled cabinet: Height 39", width 31", depth 27½". Hamilton Manufacturing Co., Two Rivers, Wis.

Adapto. Receptor for built-in shower stalls. Features a non-slip safety floor design. One-piece construction, made of porcelain enamel on heavy steel; comes in 2 sizes, 32" x 32" and 34" x 34". Milwaukee Stamping Co., Bathe-Rite Div., 824 S. 72nd St., Milwaukee 14, Wis.

SPECIALIZED EQUIPMENT

Foamite Firefoam Extinguisher. A splash-proof, foam-type fire extinguisher for tank trucks and other large vehicles. Foam range from 35 to 40 ft. American LaFrance-Foamite Corp., Elmira, N. Y.

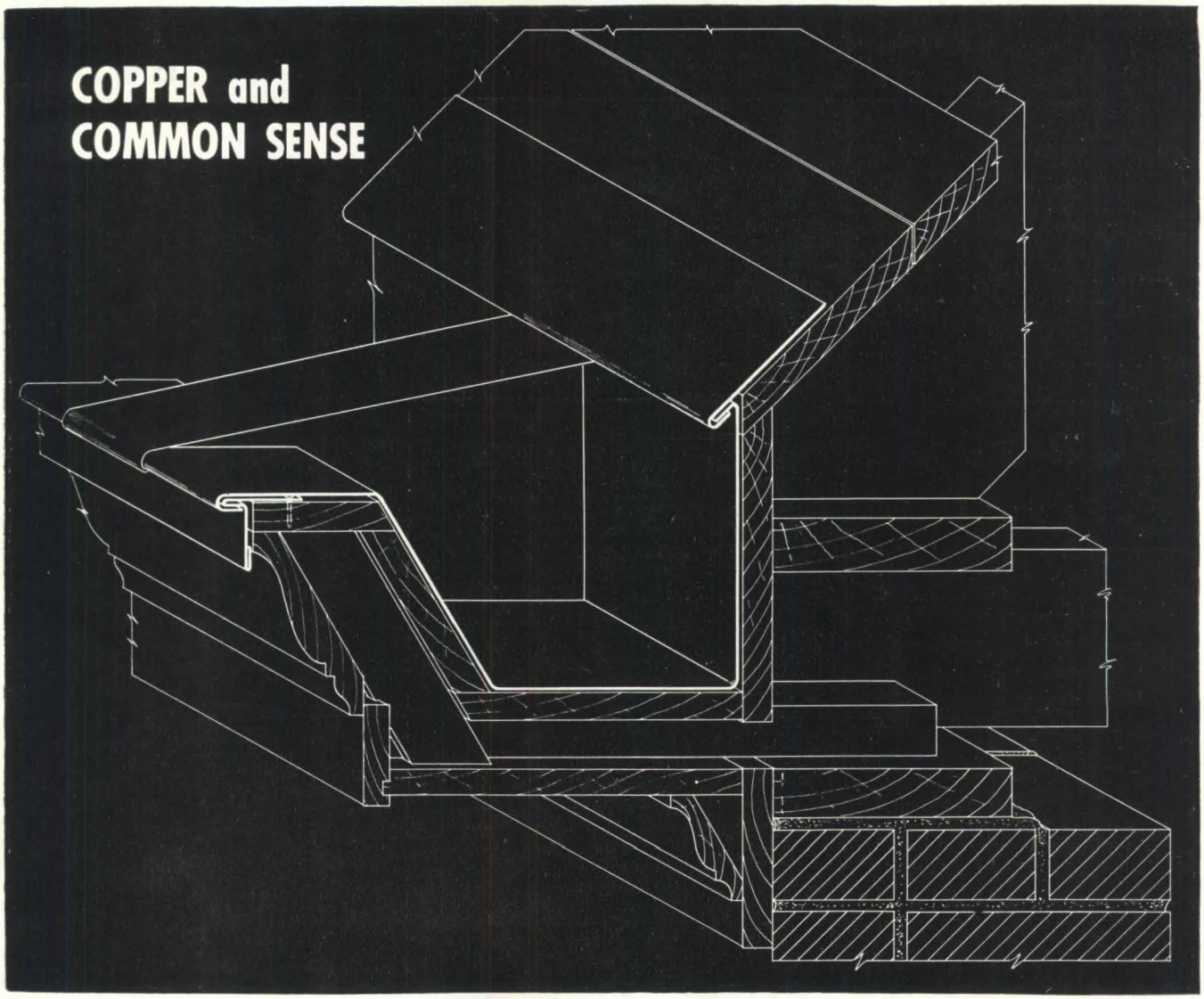
Atlas Speed Forms. Lightweight steel forms for casting concrete houses. When used in large scale production (100 houses or more) reduce cost per use per house to $140 for one-story house, $180 for 2-story. Available in standard units, but flexibility of forms lends to variety of treatment. Irvington Form and Tank Corp., Irvington, N. Y.

SURFACING MATERIALS

DDT Wallpaper. A DDT-treated, ready-pasted, children's room wallpaper, available in 2 patterns. "Jack and Jill," and "Disney Favorites." Carries one-year guarantee. Trimz Co., Div. of United Wallpaper, Inc., 222 W. North Bank St., Chicago, Ill.

TRAFFIC EQUIPMENT

Electravator. An electric dumb-waiter for hotels, restaurants, homes, hospitals, factories, etc. Gentle starting and stopping adapt it for carrying fragile objects. One hp model lifts up to 350 lbs. Shipped ready to install. Electravator Corp., 705 Albany St., Dayton 8, Ohio.



QUESTION: What is the best way to determine locations of expansion joints in sheet copper construction?

ANSWER: Use the chart on page 28 in Revere's Manual of Sheet Copper Construction*

A CHART which makes it easy for you to determine the correct gauge copper for any gutter lining as well as the maximum distance that may safely be used between an expansion joint and a fixed point is one of the important results of Revere's extensive sheet copper research program. This chart and simple instructions for using it are on pages 28-29 in Revere's 96-page manual of sheet copper construction.*

This booklet is filled with new facts which enable you to design or install gutter linings, flashings and roofs that give *extra* years of service. It is complete with charts, illustrations and detailed information so arranged that you can read and apply final figures that insure the finest sheet copper construction.

This book has been widely distributed to architects and sheet metal contractors, and in all probability it is in your office files. Be sure to refer to it. If you do not have a copy, write for one now on your office letterhead.

For further information or assistance with the design or installation of sheet copper, the Revere Technical Advisory Service, Architectural, will be glad to help you.

*"*Research Solves Problems of Stress Failures in Sheet Copper Construction.*"*

REVERE

COPPER AND BRASS INCORPORATED

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FROM THE TECHNICAL PRESS

JOHN RANNELLS

HANDBOOKS, MANUALS, PAMPHLETS

The Architects Manual of Engineered Sound Systems. *Radio Corporation of America, Engineering Products Dept., Front and Cooper Sts., Camden, N. J. 8½" x 11", 288 pp., illus., flexible binder, tables, index. $5.00*

"This manual is written as an aid and guide in building the sound system into the present-day structure. It is offered as a service to the architect, designer of those structures — structures that meet the needs of today and which will meet the needs of tomorrow."

Comprehensive and authoritative manual on sound systems for all sorts of buildings, with full information on equipment, controls, acoustics, projectors, etc., and a great many examples of typical installations with layouts and specifications.

The usefulness of the typical layouts is largely nullified by poor bookmaking: double pages are folded in so that it is difficult to open them and nearly impossible to get them back in place. Double pages could have been eliminated by more careful drafting. There's a lot of "padding" in this chapter.

It is to be hoped that subsequent editions of this manual will be less bulky.

Factory Planning and Layout. *A report prepared for Metropolitan Group Policyholders by Policyholders Service Bureau, Metropolitan Life Insurance Co., 1 Madison Ave., New York, N. Y. 8½" x 11", 34 pp. plus 8-p. inserted bibliography; plans, tables. Free to executives.*

"The purpose of this report is to outline the method of conducting studies of planning and layout as applied to both large and small plants in urban and rural communities. It describes the steps involved in a layout study and supplements this with an analysis of underlying principles."

This is a worthy purpose and the report covers the field well enough in a general way—about on a par with an undergraduate engineering thesis on factory planning and management. But there's nothing in the report to indicate that this is a field for experts—teams of experts, in fact. It implies that any manager could do the job complete. It is full of good specific instructions on details but quite lacking in any understanding of how an actual planning job must be organized.

If this were truly a "service for companies that insure their employees under Metropolitan Group policies," it would be pointed for "small business" which needs it. (Big business already knows where to get its planning advice.) It would describe the role of the architect and engineer in planning and construction; it would differentiate between adapting existing space and building new, etc.

One wonders why this sort of amateur dabbling in a technical field is being indulged in by a bureau of Metropolitan Life. "Boondoggling" with the surplus, maybe?

Westinghouse Lighting Handbook. *Westinghouse Electric Corp., Lamp*

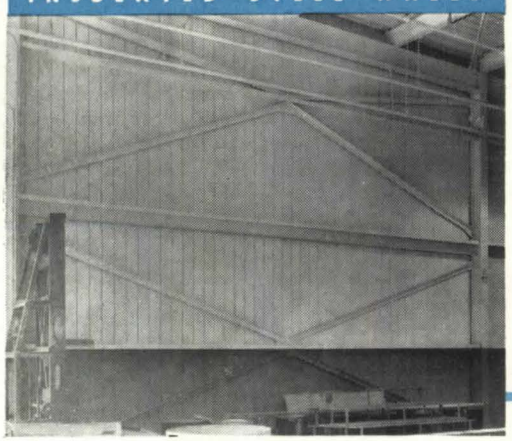
(Continued on page 92)

STEEL DECK . . .

INSULATED STEEL ROOFS

Interior of White Motor Company's Plant, Cleveland, Ohio, Showing Mahon Steel Deck Roof Construction.

INSULATED STEEL WALLS



Views of White Motor Company's Plant showing Exterior and Interior of Mahon Insulated Steel Wall Construction. Standard Mahon Steel Deck Plates are used in this Application.

for ROOFS, EXTERIOR WALLS and PARTITIONS

Today many industrial plants, power houses, and other industrial and commercial buildings are being built with Mahon Steel Deck Roofs, Exterior Sidewalls and Partitions. The new addition to the White Motor plant in Cleveland, illustrated here, is an excellent example of practical application in modern construction . . . Mahon Insulated Exterior Steel Walls, with a heat transmission coefficient "U" of 0.15, were used throughout. Mahon Steel Deck covers the entire roof area. If you are not thoroughly familiar with these new construction methods, get complete information today. See Mahon Steel Deck Insert in Sweet's File, or call in a Mahon representative. You will find that Mahon Steel Deck, due to its basic design, lends itself to a broader range of uses in modern construction.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Michigan • WESTERN SALES DIVISION, Chicago 4, Illinois

Representatives in all Principal Cities

Manufacturers of Steel Deck for Roofs, Sidewalls, Ceilings, Floors, Partitions and Doors. Also, Roof Sumps and Recesses, Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

MAHON

REVIEWS

(Continued from page 90)

Div., MacArthur Ave., Bloomfield, N. J. 5" x 7½", 244 pp., illus., spiral binder, tables, index. $2.00

Complete handbook and text on lighting in very compact form with clearly written explanations illustrated by numerous linecuts and tables. Fifteen chapters cover theory and practice with specific recommendations for a great many types of installation. A remarkable lot of useful data is packed into this very small book.

The chapter on "Architectural Lighting" brings out a curious slant: "Luminous elements, either on the exterior or the interior of a building, which form a part of its structural and decorative details, are classed as architectural lighting." These consist of coves or luminous architectural forms. That isn't the way any up-to-date architect would classify it. Surely Westinghouse knows that ALL lighting in a well designed interior is **architectural.**

FROM OTHER PUBLICATIONS

The Magazine of Light, Institute Edition. *General Electric Co., Lamp Dept., Nela Park, Cleveland, Ohio. June 1947.*

This is high-caliber salesmanship, accepted with thanks and without too much questioning as to the commercial motives behind it. It's an elegant job, in color, describing in great detail the G.E. Light Institute at Nela Park, Cleveland, with particular emphasis on the educational value of the Institute. It's a very big issue (96 pp.), rich in design suggestions, with a wealth of information on color and display lighting, particularly strong on lighting techniques for selling. Heavily featured is "Horizon House," a perfectly preposterous room where a tremendous range of lighting possibilities are demonstrated (98 lamps, 7,212 watts in the living-dining room).

Precast Frame for Two-Story Plant Erected Like Structural Steel. Engineering News-Record, *330 W. 42nd St., New York 18, N. Y. Aug. 7, 1947.*

Factory-made concrete units form the structural frame, second floor, and roof of a two-story 110 x 120 ft sporting-goods sales building in Pittsburgh, Pa. The standardized shapes were erected on the site with a motor trailer. Floors are precast slabs 12 in. wide by 5 ft long. This is a very interesting development in the interrelation between design and production. Reinforced concrete's inherent advantages, continuity in particular, are here overruled by the advantages of factory casting and quick erection. Of course economical factory production requires standardized elements—in other words, modular planning.

The structural connections consist mainly of precast brackets with members pinned together through precast sleeves in the ends of joists and girders. Cost is about the same as steel framing, about 10 percent less than fireproofed steel. The great advantage of this development is the availability of a standardized product for general construction on a modular basis, bringing concrete into direct competition with steel in small commercial and industrial buildings, another simplified "building block" for planning.

Recommended Practice of Office Lighting. *Report of the Office Lighting Committee of the Illuminating Engineering Society.* Illuminating Engineering, *51 Madison Ave., New York 10, N. Y. July 1947.*

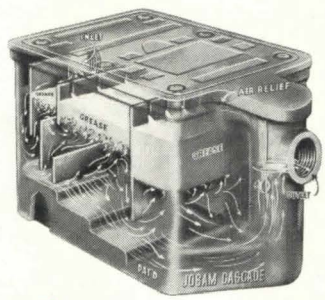
Very complete, authoritative report (42 pp.) covering the general subject of seeing in relation to office tasks and detailed handling of lighting systems for office areas, daylight and artificial. Specific areas covered are private offices, general offices, drafting rooms, files, conference and board rooms, re-

(Continued on page 94)

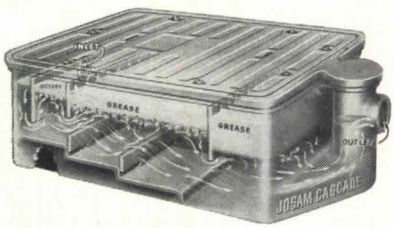
WHEN THE PROBLEM IS GREASE

THE ANSWER IS Josam CASCADE GREASE INTERCEPTORS

GREASE in waste water eventually means trouble for the plumbing system. In homes, restaurants, hospitals, hotels, and schools where GREASE is a by-product of cooking... in industrial plants, rendering plants, and packing houses where GREASE is a by-product of manufacturing, this GREASE is a costly hazard. JOSAM GREASE INTERCEPTORS eliminate this hazard completely. There is a type and size for every purpose ...so, for complete protection against GREASE problems, rely on a JOSAM GREASE INTERCEPTOR! Send for free copy of the authority on GREASE INTERCEPTION, JOSAM MANUAL "A".



Series "J" Grease Interceptor. All cast iron for Domestic and Commercial Service, capacity up to 40 GPM; for installation on floor or recessed in floor.



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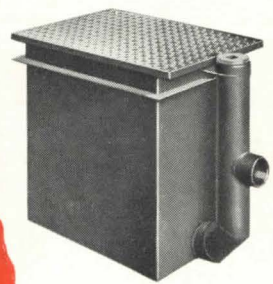
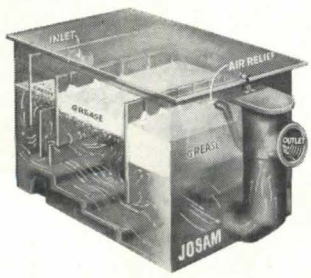
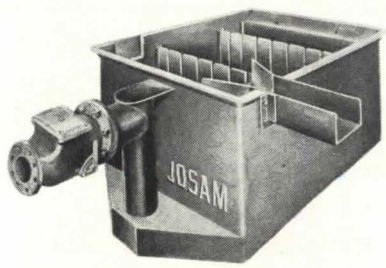


Series "JP" and "JR" Grease Interceptor. All steel for Commercial and Industrial Service, capacity up to 150 GPM; for installation recessed in floor.



Series "JN" Grease Interceptor. All steel for Commercial and Industrial Service, capacity up to 150 GPM; for installation on floor.

Series "PH" Grease Interceptor. All steel with skimming valve for Packing House Service, capacity up to 1000 GPM.



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(Continued from page 92)

ception rooms, and service spaces (corridors, stairways, toilets, lounges, etc.). Other considerations covered are supplementary lighting, the seeing requirements of business machine operations, and the need for rational maintenance methods.

Recommended brightness ratios, lighting definitions and nomenclature, and wiring are covered in appendices. The definitions are not always clear.

THOMAS JEFFERSON AND THE NATIONAL CAPITAL, 1783-1818

Edited by Saul K. Padover. U. S. Government Printing Office, Washington, D. C., 1946. 522 pp., illus. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

This is Number 4 in a series of source books published under the direction of the Department of the Interior. It consists of letters between Washington, Jefferson, L'Enfant, Thornton, Latrobe, and others about the early years of the City of Washington. As noted in the introduction by Charles W. Porter, it will be used for research and perhaps be read for its general interest by Jefferson enthusiasts. I cannot agree with Mr. Porter that ". . . the present work, as edited by Dr. Padover, tells an integrated and unified story." Of course, it is not the primary purpose of a source book to tell a story, but since the claim is made it must be considered. I happen to be deeply interested in the history of architecture and city planning and did learn much from these pages; but 79 brief notes and a 12-page appendix do not succeed in weaving the material into a story. Many of the 36 dramatic years covered by these letters are represented by only a letter or two. There is no material at all for the years 1785-89, 1794, 1796, 1799, 1810, 1813, 1815. Perhaps if his book had been published under Dr. Padover's personal supervision he would have seen to it that the gaps were filled in and that the final outcome of some of the much discussed issues were stated. As a source book to be used for research, it is clear that a table of contents is not enough. An index is indispensable. The 34 illustrations include many original drawings and some rare views, but they are not numbered and hence cannot be referred to conveniently. They are in no sort of order and jump about in date; one is dated "1840," a misprint for "1804"; one is called "section," when what is meant is "plan of a part."

Jefferson is seen in these letters as a man well informed on many practical matters, firmly checking threats to the authority of Congress, arbitrating legal and artistic matters with sureness and diplomacy. It was Jefferson who had plans of Karlsruhe and Turin to loan L'Enfant, and it was he who suggested as models for the President's House the Gallerie du Louvre and the Hotel de Salm, of which he had plates. He proposed that these be engraved and distributed to "decide the taste of the new town" (1791). His taste was more conservative than Latrobe's. He opposes Latrobe's idea of a tall "lanthern" over the representative's chamber. "I do not recollect ever to have seen in their (Grecian and Roman) buildings a single instance of a lanthern, cupola, or belfry. I have ever supposed the cupola an Italian invention produced by the introduction of bells in the churches and one of the degeneracies of modern architecture. I confess they are most offensive to my eye . . ." (1807).

A reflection which occurs over and over to the modern reader is the simplicity of an age in which the President of the United States could concern himself intimately with such trivial detail and be writing on affairs of state to so many personal friends. Although mechanical

(Continued on page 96)

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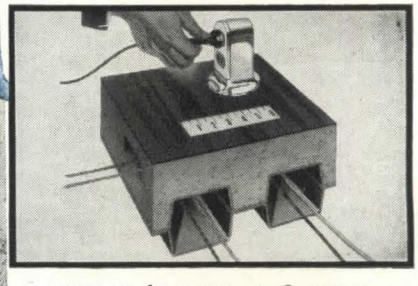

THIS IS 1 SQ. FT. OF Q-FLOOR

REVIEWS

(Continued from page 94)

conveniences were lacking, only Jefferson and Latrobe used a "Polygraph" to save their clerks from copying out every document. Forty of these devices bought for the Government offices were later found unused, in one instance because the clerks would, it was said, have had nothing to do.

L'Enfant, generally known to have been difficult, is seen in his own letters as touchy, inclined to emotional self-justification, and to have erred in taking things too much into his own hands.

Latrobe's letters and reports are those of an exceedingly competent, hard-working, conscientious professional carrying on others' bungled work, struggling to make solid what was insecure or inexpert. He was unquestionably the best available man for the job and it speaks well for him that he lasted as long as he did in view of his ill-defined powers. His zeal led to expenditures which had not been authorized and which greater political wisdom might have deterred him from making. There seems to have been no question of waste or incompetence.

Modern readers will shake despairing heads as they see what the dollar once could purchase—skilled workmen for $1.25-$2.50 per day; a masonry kitchen for the jail for 300D. (At this time the convention of the "$" was not universal; it was as often written "D" as the English still write "£.")

The original building code promulgated for the city by Washington and Jefferson included the limitation of heights to two stories below the eaves, and one in the roof; brick construction; no projections into the street. But as these proved to be a deterrent to artisans, and since there was need for settlers, these restrictions had to be suspended. One marvels at what the Founding Fathers were able to do, the size of their schemes; "Make no little plans" was their motto. It is astounding that so much was accomplished under such handicaps; there was never enough money, materials, laborers, or skilled artisans. The commissioners and the Presidents carried on without the security of established law or sound finance. No city plan, no real estate development, no buildings of comparable magnitude have ever before been attempted under conditions of such devastating provinciality. Every step was a plunge in the dark. Definitions of power and authority had to be made from day to day while the work went on. There were errors, there was ignorance, but such chicanery as went on was trivial; rather it was inexperience that caused most of their errors.

The Washington we know is clearly shown to result from the unusual abilities, honesty, and vision of the remarkable men who guided its early development.

C.L.V. MEEKS

U. N. HEADQUARTERS

Le Corbusier. *Reinhold Publishing Corp., 330 W. 42nd St., New York 18, N. Y., 1947. 80 pp., illus. by the author. $3.50*

This is a brief and enlightening exposé of how an international commission in search of a site for the U. N. buildings set to work without the remotest idea of the requirements that site should meet. Only this can explain the fact that the members of that commission were asked to inspect sites ranging in area from 40 square miles to 2 square miles!

It was naturally impossible to make any sound choice of a site without knowing the requirements determined by a program of needs. Le Corbusier establishes an outline for this program, and his contribution in clarifying this situation is very valuable. Strangely enough it is he, the so-called "Utopian planner," who defines the needs and outlines the general program that made it possible to choose a site. In those months right after the war, when euphoric business-

(Continued on page 98)

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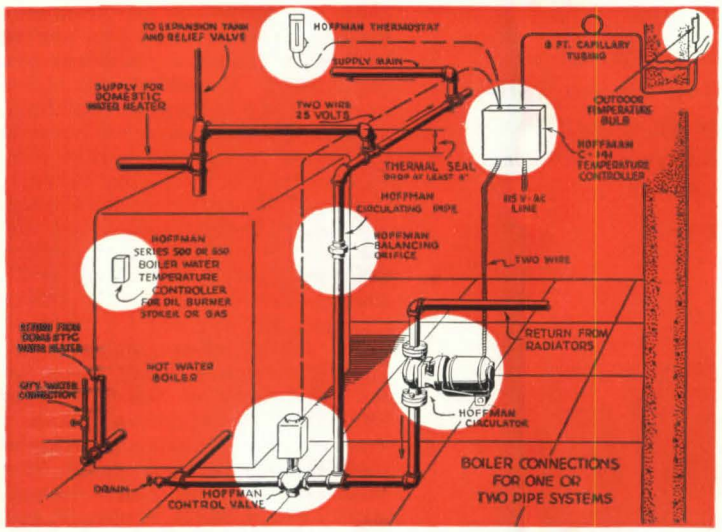

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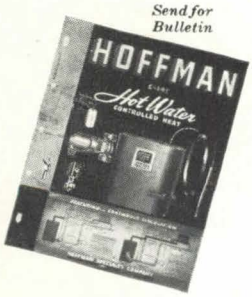

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REVIEWS

(Continued from page 96)

men and politicians were still talking about a new "world capital," Le Corbusier put things in their place. It is not a "world capital" that is required, he says, but a "headquarters," which means, "an assemblage of persons and instruments at a given spot connected with the zone of operation by the most efficacious means of communication. The zone of operation is, in this case, the entire world, all points of which are known and accessible today." He goes further. At the time when everybody was talking of the United Nations as an eternal organization concerned with the preservation of eternal peace, Le Corbusier stated: "Everything is mortal, beginning with leagues, confederations, unions." He evidently hasn't forgotten his work for the League of Nations in Geneva, and the Europe of the twenties.

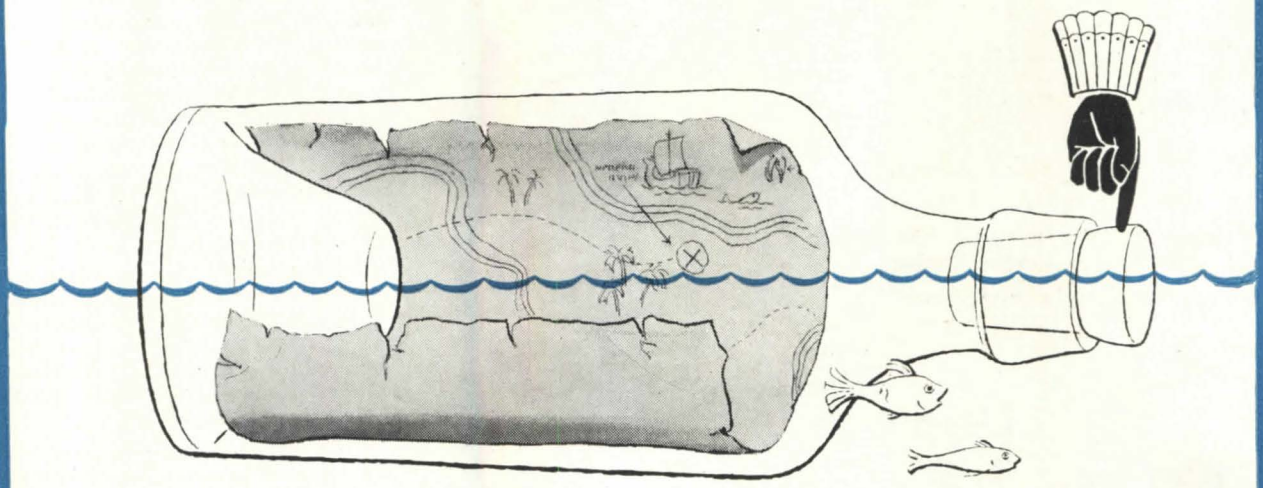
After these important statements and definitions, Le Corbusier gives the outline of a program of needs for the U. N. Headquarters. The United Nations itself lacking a precise structure, the program cannot be too definite. However, the new United Nations center will have to facilitate and coordinate certain human activities that take place in any city. Le Corbusier restates these generalities as he has often done in his books. For each of the four functions—dwelling, working, culture of mind and body, circulation—he has an example of his past work at hand. His new superblock with community services now being built in Marseilles stands for his example of residential building. As against the usual detached house development or "horizontal garden city," he opposes the block type or "vertical garden city," "a productive social phenomenon where the individual and the collective needs find their reasonable balance . . . ." The Ministry of Education in Rio de Janeiro is surely his example for a place for work—"The exact biology of an office building is entirely definable today." His project for the League of Nations in Geneva and the Salle Pleyel in Paris (both conforming to Gustave Lyon's acoustic theories) are kept in mind when he talks about meeting places or assembly rooms. For a center concerned with the culture of the mind, he remembers the work he did for Paul Otlet, the Belgian apostle of "Mondialisme," the World Museum, and the "Mundaneum."

It would have been much easier for the reader to understand this book had the above mentioned projects been shown, together with this report, and accompanied by a brief historical description. I would advise anybody interested in this subject to go over these projects in Le Corbusier's complete works. The rough sketches in the report then become very eloquent.

(Continued on page 100)

The bottle floats for years, because the cork keeps water out.

The much-storied bottle messages would have remained in authors' fountain pens but for the fact that cork is water-repellent.



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REVIEWS

(Continued from page 98)

As it stands, the book is an encouragement to further study for those interested in the subject; those who do not want to go further will nonetheless feel challenged by such a lively document. "I felt the need of presenting this report 'humanely,' not in the form—irreproachable perhaps, but often discouraging—of official reports." I first examined Le Corbusier's report as part of the entire official document issued by the United Nations as a result of the work of the Site Committee. It immediately calls attention by its unorthodox character in the midst of all the other reports, which were definitely of that "discouraging" type that all official bodies continue to produce.

In his appreciation of the sites themselves, Le Corbusier, creator of new forms, cannot but see the final possibilities of a really modern plan. It is understandable that he butts against the blindness of some of his fellow committee members who do not seem to have a remote idea of what Le Corbusier has in mind; they talk such different languages that no translator can bridge the gap.

So Le Corbusier has to get down to figures and by these he proves the unsoundness of using remote sites covering 40 square miles. His arguments finally bring the whole committee to a more realistic stand. He argues again and again: "It is too soon to build a 'World Capital'; the gap between yesterday and tomorrow has not yet been spanned." Today, a General Headquarters is required.

After much traveling in search of a site, even Le Corbusier is tired and when the East River site in Manhattan is finally accepted he says, "This is a propitious solution . . and it brings to an end the uncertainty and hesitation in which we have been long submerged." Though uncertainty and hesitation may offer a field for diplomats, they torture Le Corbusier, who as a planner and as an architect, wants to get things done.

Le Corbusier has been familiar with the basic requiremens of a United Nations center since he conceived, with Pierre Jeanneret, his remarkable plans for the League of Nations competition in Geneva. These plans today, after 20 years, are still the most modern conception of a group of public buildings. Not discouraged after losing the competition by an unjust verdict of the jury, he later designed a project for the same League in the Ariana Park, and shortly afterwards another for the "Mundaneum" or world center of culture, first for Switzerland, then for Antwerp.

Le Corbusier did not come empty-handed to work in the Site Committee of the United Nations. He brought all his experience and ideas with him. The

(Continued on page 102)

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REVIEWS

(Continued from page 100)

U. N. Headquarters report is not only for Le Corbusier a "Practical Application of a Philosophy of the Domain of Building," but more definitely a description of the projects with which he has become so familiar. His unshakeable faith in a better world has kept Le Corbusier busy for the last 20 years. It is this faith that radiates through the book, that makes it worthwhile reading. JOSE LUIS SERT

SIMPLIFIED ENGINEERING

Simplified Engineering for Architects and Builders. *Harry S. Parker. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N. Y. Second Edition, 1947. 5" x 7¾", 239 pp., illus., tables, index. $3.00*

This book has been for years the standby of architects and builders who are rusty on structural design. All explanations of theory and practice are clearly illustrated with problems which are worked out step by step, beginning with the principles of mechanics and continuing with steel, timber, and concrete structures. Only simple structures are covered, but thoroughly enough to take the mystery out of elementary structural theory. Treatment of timber is on the lean side; only solid members used as posts, beams, or joists are considered, no built-up members, no connections.

This edition is slightly larger than the original, differing chiefly in the revision of problems to conform to unit stresses of present-day building codes. There is a noticeable improvement in legibility, thanks to very careful bookmaking.

JOHN RANNELLS

NOTICES

JAMES J. WALSH and GEORGE H. JENNINGS have formed an engineering association at 112 Market St., San Francisco, Calif.

THE WALTTOM CONSTRUCTION CORP., general contractors, has opened new offices at 124 W. 30th St., New York 1. N. Y.

A. L. KLINGBEIL has announced the opening of an office for the practice of architecture in the Pullen Bldg., 399 N. E. 79th St., Miami, Fla.

GEORGE FARKAS INTERIORS, INC., has changed its name to GEORGE FARKAS, INC., with design offices at the same address: 954 41st St., Miami Beach, Fla.

ROY M. SCHOENBROD, architect-engineer, has opened an office at 8 S. Dearborn St., Chicago 3, Ill.

JOBS AND MEN

NOTICE: *Advertisements for this section must be addressed to* Jobs and Men, C/O PROGRESSIVE ARCHITECTURE, 330 West 42nd St., New York 18, N. Y. Legible copy, accompanied by check or money order for $3.00, will be accepted **not later than the 5th of month preceding publication.** Insertions may not exceed 50 words.

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SENIOR ARCHITECTURAL DRAFTSMEN—permanent positions open with Los Angeles firm of Austin, Field & Fry. Must be experienced in monumental, commercial, industrial, and educational projects. Inform fully as to education, age, salary requirements, and all other pertinent data. 629 Chamber of Commerce Bldg., Los Angeles, Calif.

INSTRUCTOR—to teach structural design and related courses to architectural students. Apply to Paul Weigel, Department of Architecture, Kansas State College, Manhattan, Kans.

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(Continued on page 110)

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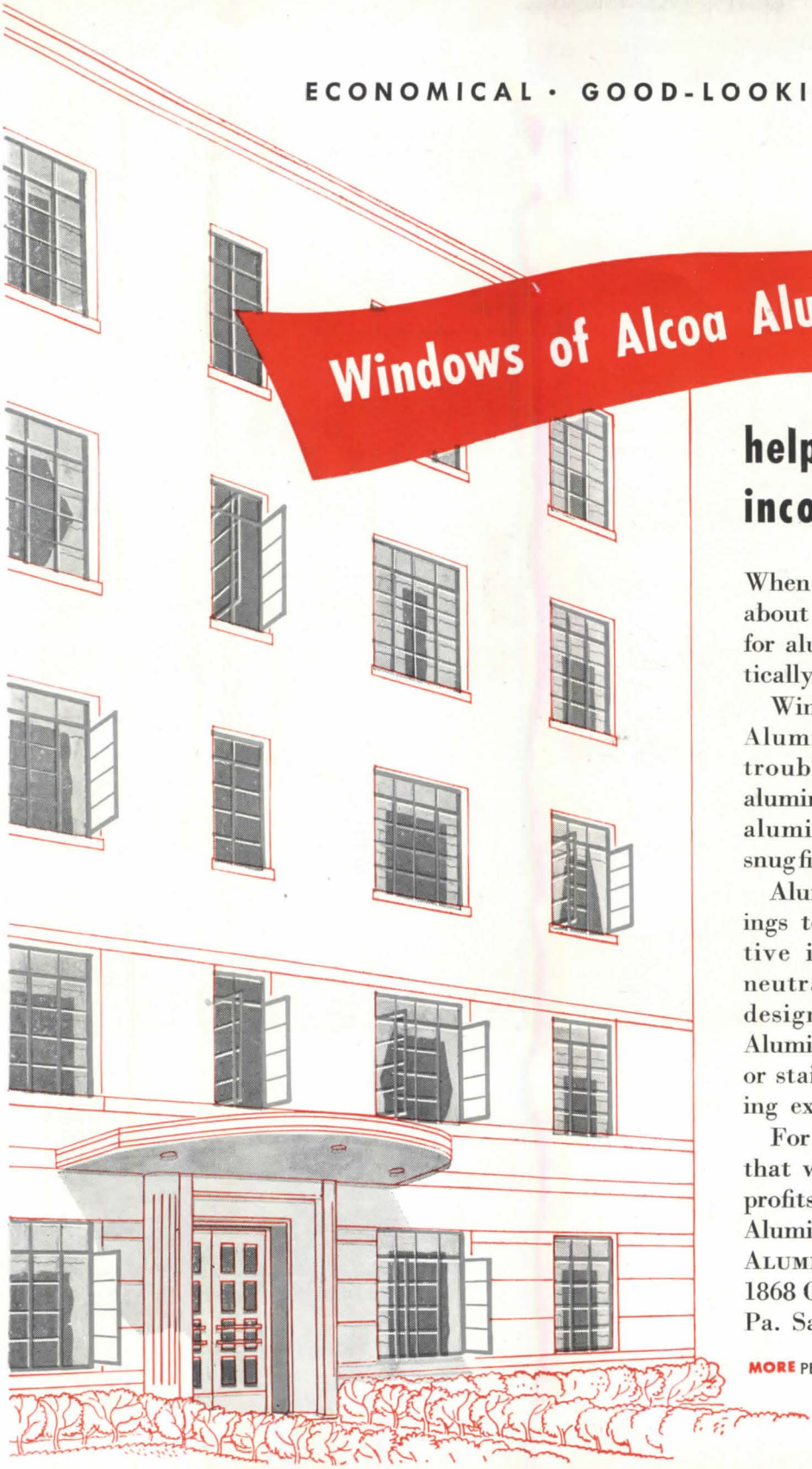

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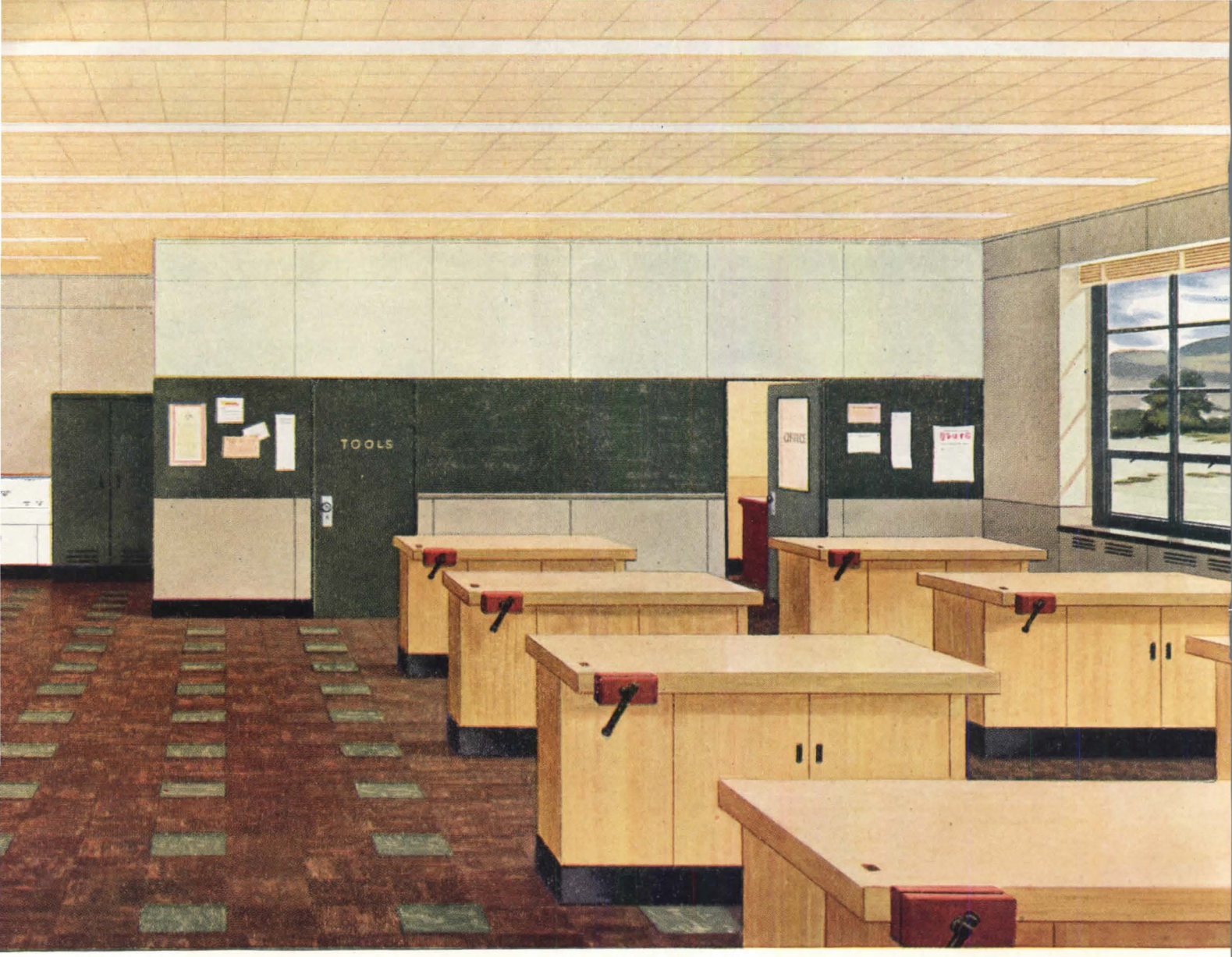

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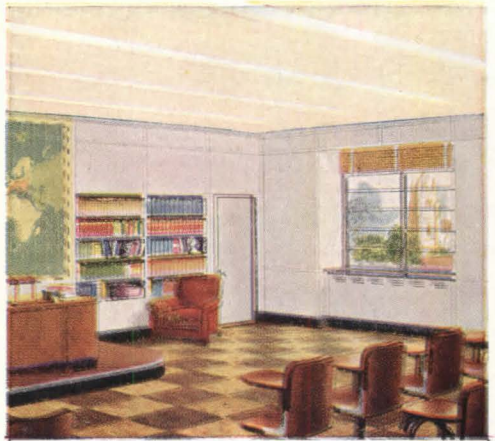

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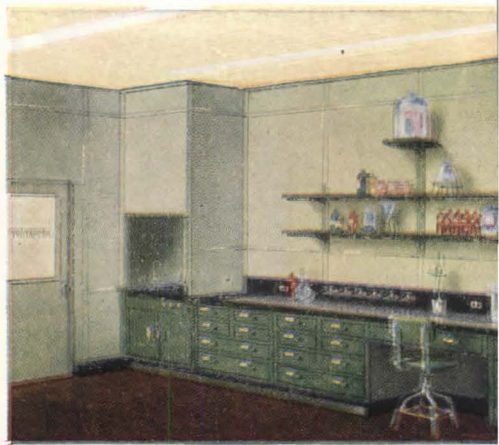
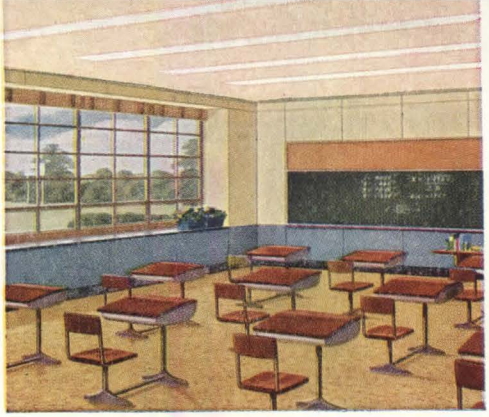


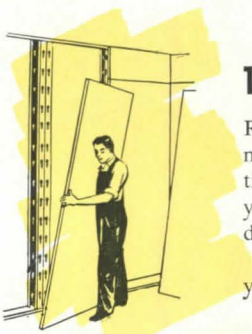
. . . for Institutions and Hospitals



. . . for Schools

. . . for Factory Areas

Interiors today that provide for tomorrow!



1. TRANSITE WALLS—*Movable!*

Rooms when and where you want them . . . that's the magic of Johns-Manville Transite Walls—the attractive and sturdy asbestos walls that are *movable*. Now you'll never again need to send partition walls to the dump every time space changes are required!

With the least inconvenience—almost *overnight*—you can enlarge, decrease, or rearrange areas as often as your needs require. Transite movable panels are easy to handle, readily assembled, interchangeable, and can be used over and over again. Made of asbestos and cement, Transite Walls have all the qualities of solid and permanent construction. They provide rigid, double-faced partitions, and can also be used as the interior finish of outside walls.

To make sure your interiors will provide for *change*, write for booklet, "J-M Transite Movable Walls."

2. ACOUSTICAL CEILINGS—*Quieter!*

There's a Johns-Manville acoustical material to give you the best in sound control, no matter what the type of interior.

To assure you the maximum in noise-quieting, Johns-Manville not only provides the correct acoustical materials for each specific condition, but follows through by *installing* the materials *properly* with its own construction crews. In other words, you get "J-M materials installed by Johns-Manville" for best results.

That's the all-inclusive service . . . the *undivided responsibility* Johns-Manville gives your projects.

For further details, send for brochure, "J-M Sound Control." Describes such J-M acoustical products as demountable Sanacoustic, Fibracoustic and Fibretone, Transite Acoustical Panels, and special materials for Broadcasting Studios.

3. ASPHALT TILE FLOORS—*Colorful!*

You spend no more to have *quality* floors like these—attractive and resilient . . . extra-long wearing . . . reinforced with indestructible asbestos!

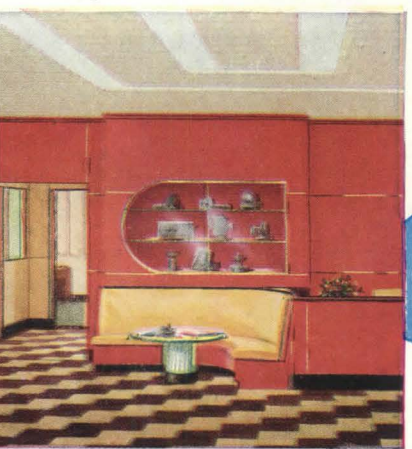
That's the kind of flooring you get with Johns-Manville Asphalt Tile. It's easy on the eyes, easy on the feet, and easy on the budget, too.

Yes, you'll like *everything* about this modern flooring, including the unlimited range of color combinations—from striking patterns with strong contrasts to solid fields of marbleized colors.

J-M Asphalt Tile does not originate dust . . . stays fresh and unmarred with practically no maintenance. Individual units permit easy repairs.

For areas exposed to oil or grease, use J-M *Greaseproof* Asphalt Tile. Send for full-color brochure, "Ideas for Decorative Floors."

. . . for Reception Lobbies and Stores

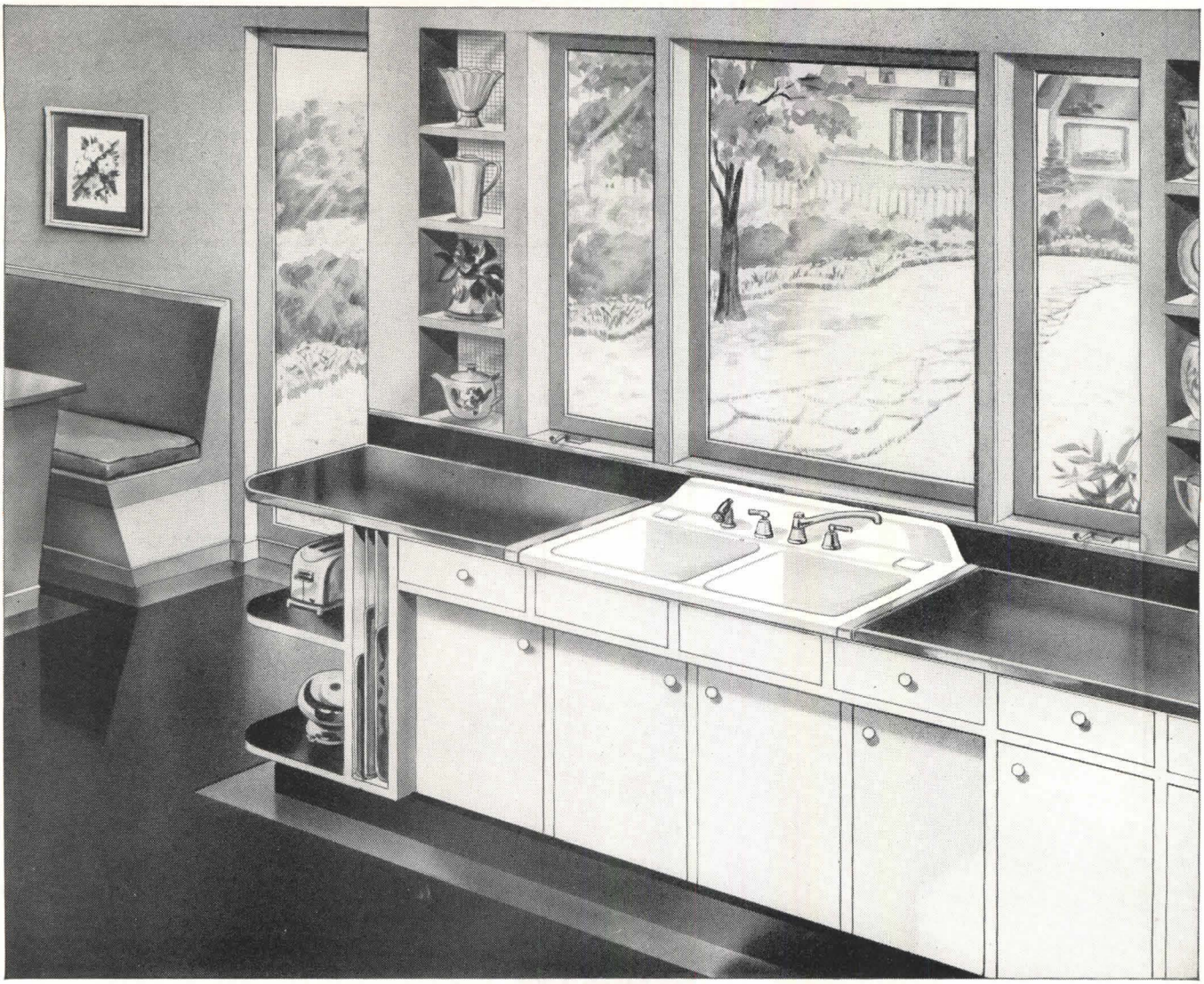


Production of Johns-Manville Building Materials has now been greatly increased to meet unprecedented demands. So the chances are better than ever that you can get the materials you want when you want them. Write Johns-Manville, Box 290, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville

Walls - Ceilings - Floors



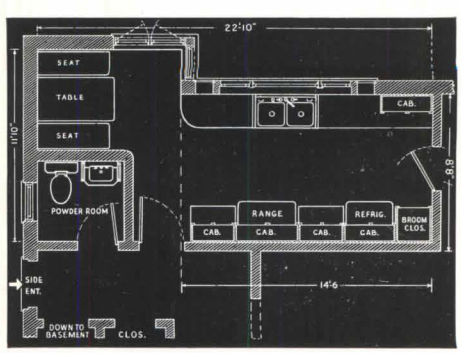
For well-planned kitchens: The KOHLER Wellwin sink

THE Kohler Wellwin sink has advantages that can easily be recognized and appreciated by the average home owner. It carries immediate assurance of first quality, of which the name Kohler is a well known symbol. Its two roomy compartments make it ideal for working comfort, and it fits readily into convenient kitchen arrangements of various types.

The Wellwin has a time-tested, solid base of cast iron to which is fused the lustrous, pure white Kohler enamel. Housewives appreciate the easy-to-clean surfaces which are acid resisting and give long wear. The Edgewater fitting with swing spout is made of durable, chromium plated brass, and mounted on a 3⅛-inch ledge. The spray operates conveniently by pressure of a lever on the nozzle. Write for further information.

Kohler Co., Dept. O, Kohler, Wis. Established 1873.

An example of how the Kohler Wellwin can be adapted to a modern floor plan that provides for economy of both space and effort. Size, 42 x 25 inches.



KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

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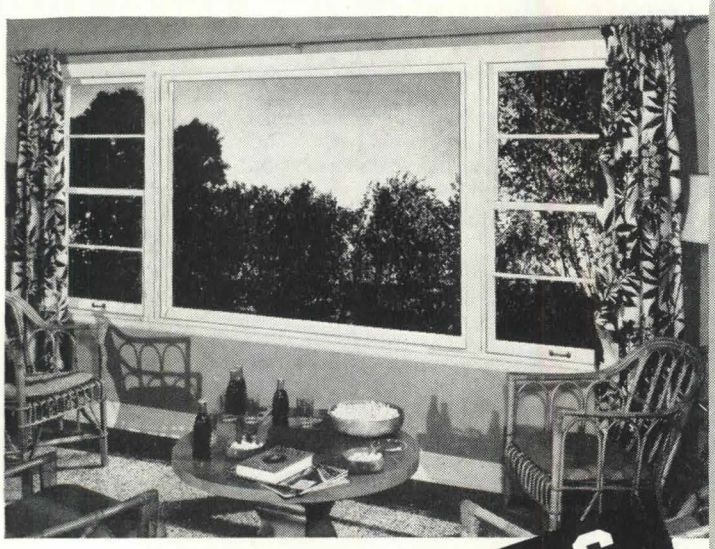
no *Window Questions*

when you choose

SILENTITE



1866 CURTIS WOODWORK

SILENTITE PRE-FIT

the "Insulated" window

NO QUESTION OF WEATHER-TIGHTNESS! The new self-fitting Silentite is 20% more weather-tight even than the famous original Silentite—America's *first* "insulated" window. In the new Silentite, full-length, double-Z type bronze weatherstrips in the jambs press sliding bars against the edges of the sash, providing a tight fit, yet permitting easy movement. In addition, the new Silentite has improved weatherstripping at head sill and meeting rail. Silentite is made of wood, a natural insulating material—toxic and water repellent treated.

NO QUESTION OF OPERATING EASE! The new Silentite operates easily the year around; but won't rattle or "creep"—thanks to the famous Silentite construction features. No weights or pulleys to get out of order, no sticking or binding. Even a small child can operate Silentite!

NO QUESTION OF SAFETY! The new Silentite locks in two positions—closed or partly open. Two Silentite locks (furnished with every Silentite window) are placed at the sides—no conspicuous center lock as on ordinary windows.

NO QUESTION OF BEAUTY! The new Silentite —available in 12 sash styles—is a *beautiful* window. Mullions are narrow—glass area is greater —narrow trim is used. Proportions are graceful. More than ever, Silentite is the kind of window that enhances the appearance of any home, large or small.

NO QUESTION OF INSTALLATION! The new Silentite is amazingly easy to install because it is a prefabricated wood window. All parts are engineered for perfect coordination in the completed job. And—good news!—installation costs are amazingly low.

Let us give you all *the facts about the new self-fitting Silentite window—and why it has been called America's most modern window. Mail the coupon!*

Curtis Companies Service Bureau
PA-10-S Curtis Building
Clinton, Iowa

Gentlemen: Please send me your booklet on the new Curtis Silentite Window.

Name.....

Address.....

City.....*State*.....

I am ( ) Architect, ( ) Contractor, ( ) Prospective Home Builder, ( ) Student.

(Please check above)

JOBS AND MEN

(Continued from page 104)

MECHANICAL ENGINEER—fully experienced in making designs, working drawings, and writing specifications for heating, plumbing, and air conditioning. Permanent connection in large architectural-engineering office can be offered to properly qualified applicant. Send record of experience and samples of work. Marr and Holman, 701-703 Stahlman Bldg., Nashville, Tenn.

ARCHITECTURAL OR CIVIL ENGINEERING GRADUATE—opening for young man. After training period, successful applicant assigned to area to contact architects and engineers, promoting use of our manufactured products. State age, ambitions, education, experience, qualifications, and salary expected. United States Gypsum Co., Sales Personnel Dept., 300 W. Adams St., Chicago 6, Ill.

EXPERIENCED ARCHITECTURAL DESIGNER, TWO DRAFTSMEN—wanted immediately. Draftsmen must be capable of working drawings. An opportunity for qualified men. Give complete history in first letter. Box 48, PROGRESSIVE ARCHITECTURE.

EXPERIENCED MECHANICAL ENGINEER—wanted by well-established architectural firm in Minnesota employing about eight men. Top salary and opportunity of business participation. Box 49, PROGRESSIVE ARCHITECTURE.

TOP ARCHITECTURAL DESIGNER — must be renderer, draftsman, modern designer with background of historical architecture. University graduate supplemented by European travel and study or training at the American Academy in Rome. Good background, diplomatic, pleasing personality. Prospective future partnership. Give complete information and references. Box 59, PROGRESSIVE ARCHITECTURE.

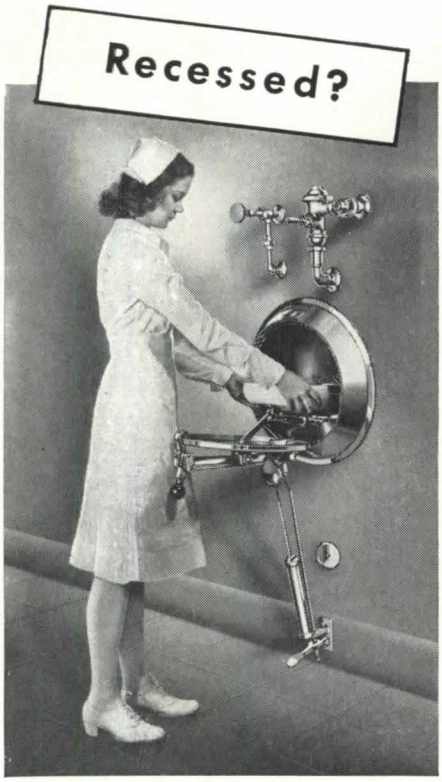
JOBS WANTED

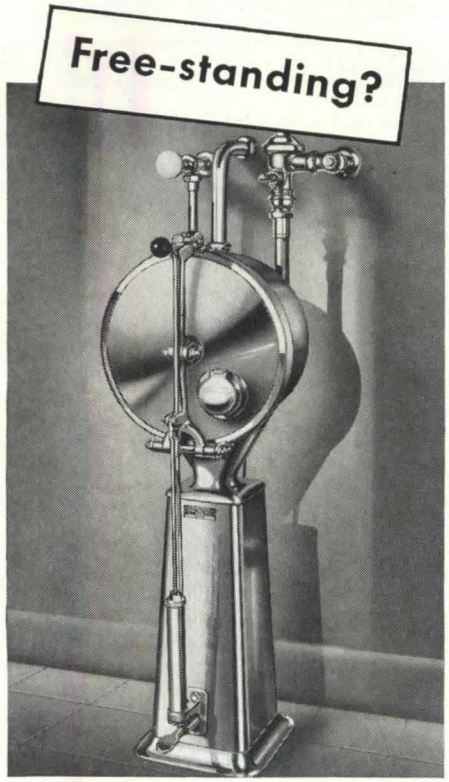
ARCHITECT-ARTIST AND DELINEATOR—of long experience, offers services for freelance architectural renderings and perspectives, bird's-eye views of architectural treatment of engineering structures such as highways and bridges. Theodore A. de Postels, A.I.A., Studio at 644 Riverside Drive, New York 31, N. Y. AUdubon 3-1677.

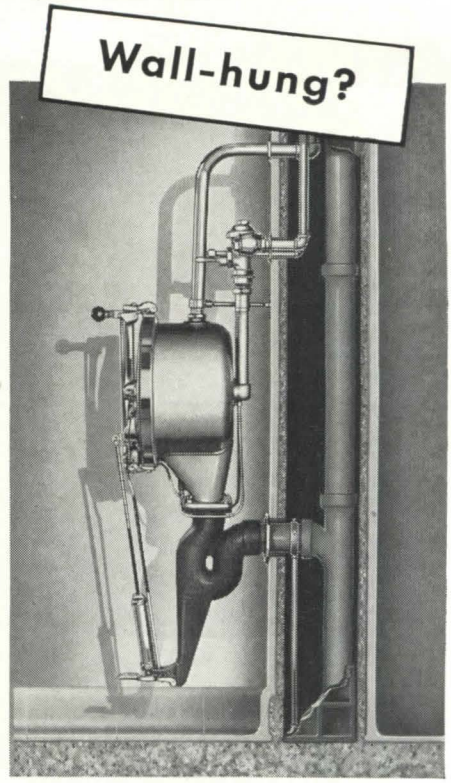
YOUNG ARCHITECT—N. Y. license, European and American background. Working as industrial consultant and on residences, offices, interiors, etc. Needs small office space, prefers share-expense association with modern architects in New York City or similar. Box 60, PROGRESSIVE ARCHITECTURE.

ARCHITECT—experienced with office buildings, schools, hotels, housing, apartments, theaters, commercial, and other

(Continued on page 112)







Get this hospital-planning data on the SCANLAN-ORBIT Bedpan and Urinal Sterilizer

. . . made of non-ferrous materials to avoid rusting, chipping and corrosion

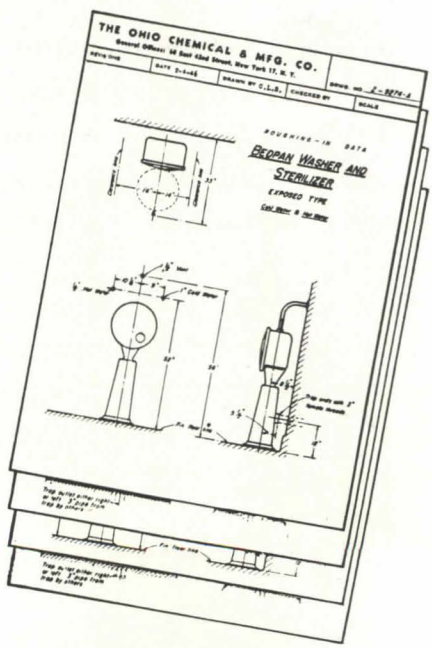
IMPORTANT considerations that influence the specification of the Scanlan-Orbit Bedpan and Urinal Washer and Sterilizer include:

1. The saving of nursing time and energies through combining in a single operation the entire job of emptying, flushing with cold water, and steaming with hot water or steam;
2. The elimination of odors from the building;
3. Long life and trouble-free performance.

Scanlan-Orbit apparatus is made of non-ferrous materials that will not rust, chip or corrode. The door collar is cast bronze, with a machined gasket groove. The bronze door has an adjustable locking-bar that insures sealing of the door against the gasket, thus preventing odors from escaping into the building.

For detailed description and roughing-in drawings, mail the coupon below.

More than 40 years of experience in designing and manufacturing hospital equipment—including all types of sterilizers, surgical lights and recessed cabinets—and years of contact with hospitals and architects, qualify our Technical Sales Service Department to supply authentic assistance in hospital equipment planning. Send your problems and floor plans for recommendations of installations for the greatest efficiency and economy—without obligation.



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Send information on Scanlan-Orbit apparatus.

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JOBS AND MEN

(Continued from page 110)

work. Desires partnership with progressive architect. Experienced with all branches of the work. Florida preferred. Box 61, PROGRESSIVE ARCHITECTURE.

ARCHITECT-DESIGNER—A.I.A., 20 years' European and American practice. Licensed in New York State and State of Georgia. Desires association or partnership in established California, Texas, or Florida firm. Expert in functional design of commercial, residential, and industrial buildings, schools and hospitals. Will supply references and samples. Box 62, PROGRESSIVE ARCHITECTURE.

ARCHITECT—registered New York and New Jersey, many years' experience in residential work. Will complete working drawings from sketches for architects not wishing to devote time to this class of work. Expert, clean drafting. Specifications included if desired. Box 63, PROGRESSIVE ARCHITECTURE.

ARCHITECT—50, Michigan graduate and registration, desires association, partnership, or responsible position with progressive Florida architect. 25 years' varied experience including schools, hospitals, churches, public, commercial, and industrial buildings. Capable of organizing and taking charge of office. Available in October. Residence or apartment availability important factor. Box 64, PROGRESSIVE ARCHITECTURE.

DRAFTSMAN—Columbia graduate, New York license examination last June. Three and a half years' experience on homes, schools, libraries, etc., in New York offices. Presently employed but desirous of position with future in small established architect's office anywhere in the country. Can offer excellent references. Box 65, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL SCALE MODELS—one of most reputable and experienced scale model-makers open for additional projects. Over 20 years' distinguished craftsmanship in exteriors and interiors, block sketch and architectural scale models from sketches or completed plans. Special requirements skillfully served. Louis Fromm—Craftsmen in Scale Models, 207 E. 32nd St., New York, N. Y.

JUNIOR DRAFTSMAN—19, studied in aeronautical technical school, 2½ years' mechanical drafting. Veteran, recently out of Army. Prefers small architectural firm. Salary secondary to interesting job. New York vicinity. Box 66, PROGRESSIVE ARCHITECTURE.

STRUCTURAL ENGINEER—professional license, desires connection with architects for structural design. Fee, hourly, percentage, or tonnage basis; commercial and industrial buildings, alterations, foundations. New York metropolitan area. Box 67, PROGRESSIVE ARCHITECTURE.

Decorate for Lasting Beauty

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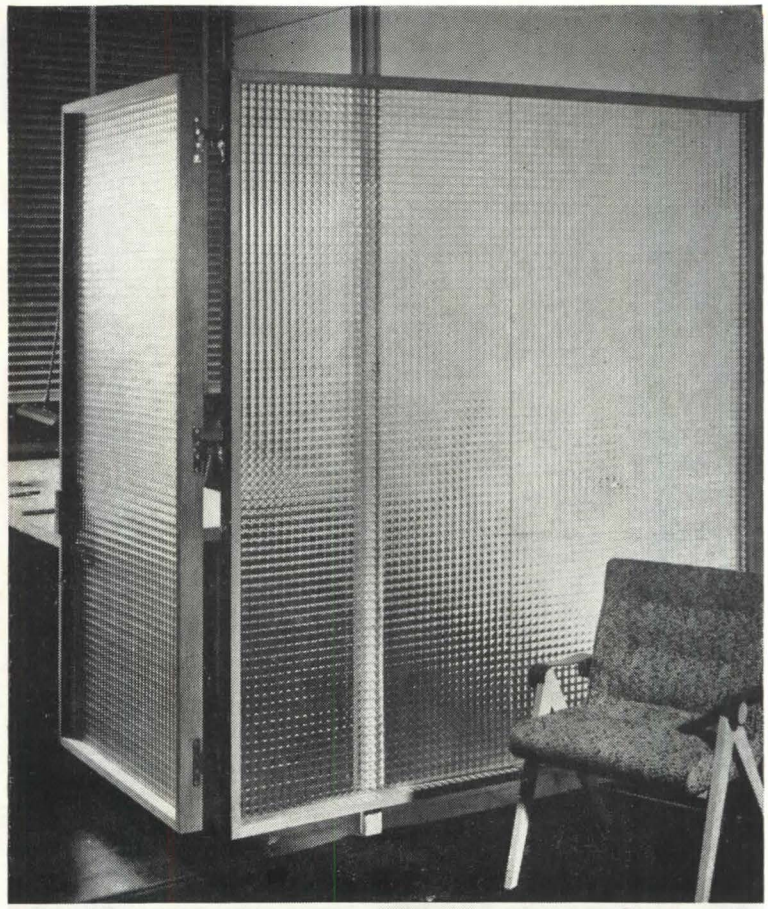
PATTERNED GLASS

You can add never-fading sparkle . . . gain greater light diffusion . . . with Blue Ridge *Patterned* Glass.

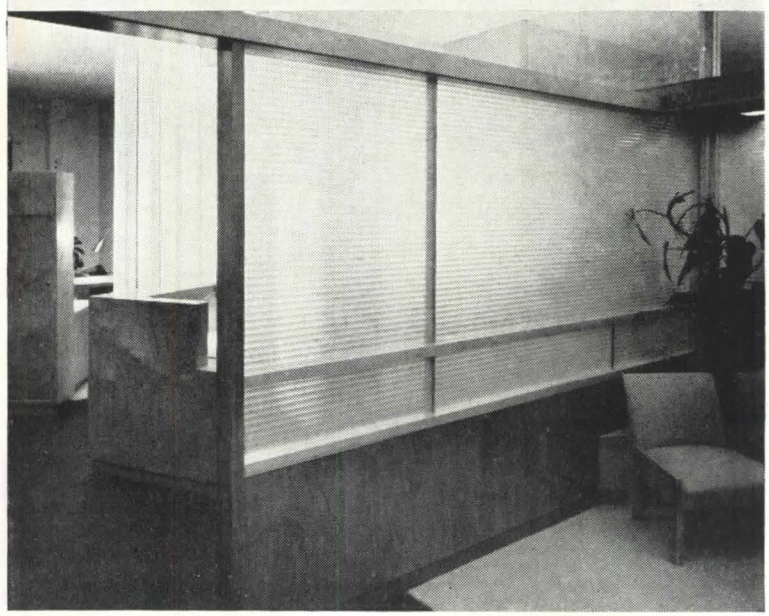
This versatile medium is both a building material and a decorative tool. Even when used primarily for functional purposes, *Patterned* Glass adds lasting beauty to offices, homes, public buildings of all types. Because it obscures views, yet transmits light, decorative glass is ideal for walls, partitions, fixed or movable screens. For complete privacy, it may be *Satinol*-finished.

Over 20 linear, square or all-over patterns give you wide choice in creating distinctive effects. Your nearby L·O·F Glass Distributor will be glad to work with you. Write for our *Patterned Glass Modernization Book*. Blue Ridge Sales Division, Libbey · Owens · Ford Glass Company, 10107A Nicholas Building, Toledo 3, Ohio.



Doublex screen admits light to reception room, keeps drafting room completely private. Architectural offices of Raymond and Rado, New York.

Light filters through Satinol Louvrex into reception room at West Coast Offices of Street & Smith Publications, designed by Alyne Whalen, Beverly Hills.



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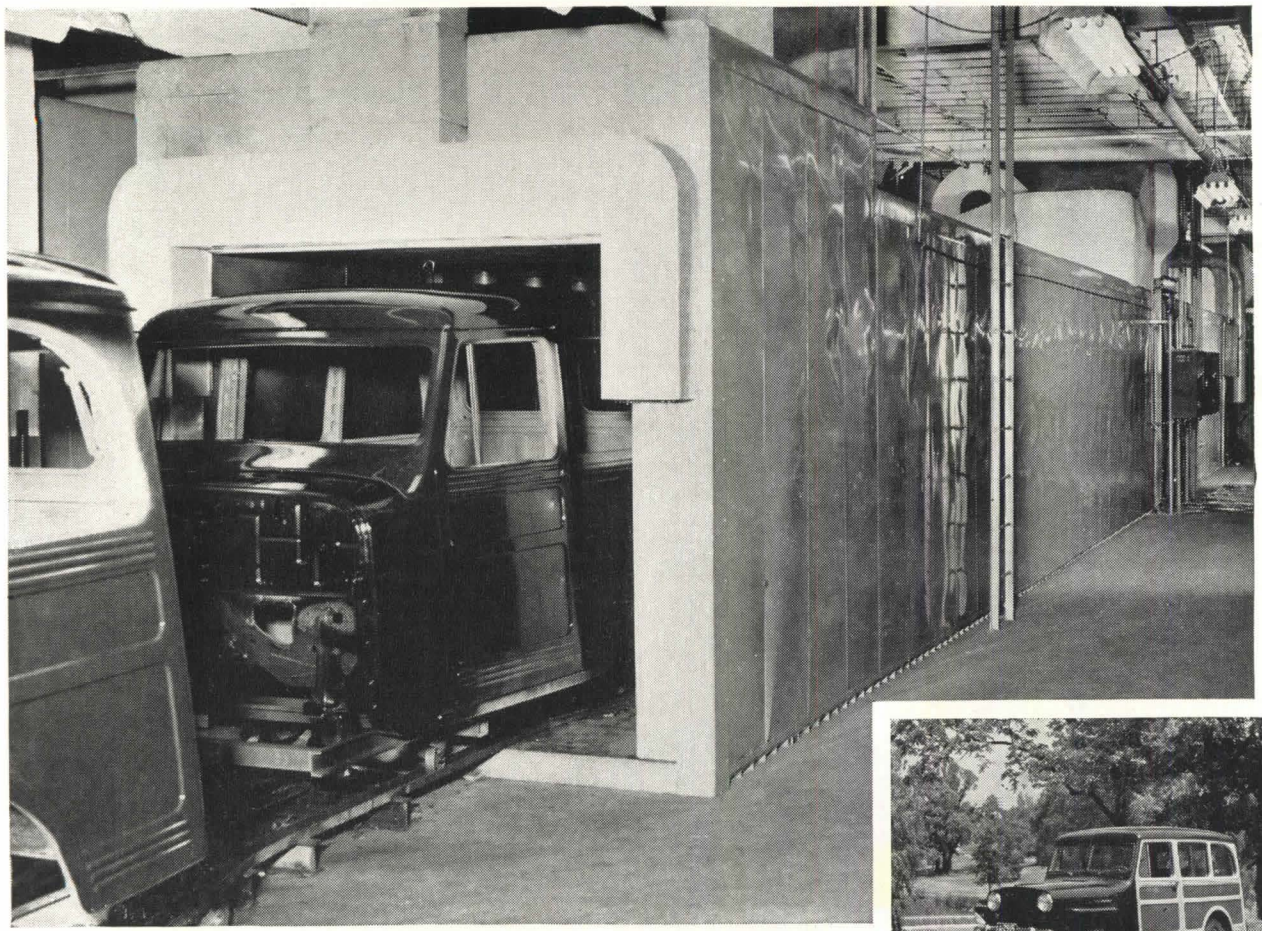
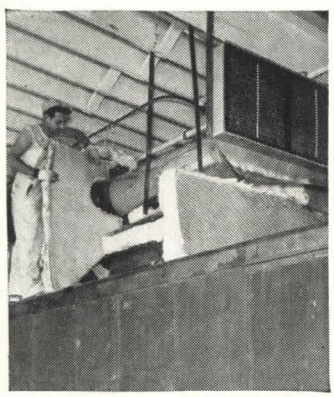
FOR SOFT, DIFFUSED LIGHT • SMART DECORATION • COMPLETE PRIVACY



"Jeep" Station Wagon

Fiberglas* works on the "Jeep" production line



R. C. Mahon Co., Detroit—engineers and general contractors; Industrial Insulation Co., Toledo—applicators.

Heat control is a full-time job at the Willys-Overland Motors Inc., plant in Toledo, Ohio. Here, as in other plants from coast to coast, Fiberglas Metal Mesh Blankets assure important savings in fuel—and provide a combination of other advantages found in no other single material. These blankets are *firesafe, light in weight, non-corrosive, non-hygroscopic, of low-heat capacity, vibration resistant, permanently sanitary, permanently efficient, useful over a wide temperature range, low in thermal conductivity and are easy and economical to apply.*

There is a type of Fiberglas Industrial Insulation to meet every need, for furnaces, ovens, boilers and other heat source equipment; for air ducts, hot or cold lines, turbines, reactors or other units.

Find out now how you can make immediate installation savings and obtain long term economies by using Fiberglas Industrial Insulations. Write for complete information: Owens-Corning Fiberglas Corporation, Dept. 827, Toledo 1, Ohio. Branches in principal cities.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) for a variety of products made of or with glass fibers by Owens-Corning Fiberglas Corporation.

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New... free booklet

helps plan better washrooms

Send today for your free copy of this handy guide to planning more practical, more efficient washrooms—illustrated with floor plans and details—compiled by Scott Washroom Advisory Service—the result of years of research in washroom design.

Good washrooms begin at the drawing board—and here is a booklet that helps you plan *good* washrooms . . . washrooms that are "Health Zones"—not "Germ Exchanges"... "Morale boosters"—not "Temper-testers." Send for it today!

What Washroom Advisory Service is

Scott Washroom Advisory Service has studied every kind of washroom and found what is most efficient in industrial plants, office buildings, schools, theaters, stores, restaurants and service stations. The result of all this experience is yours—for the asking—a service of the Scott Paper Co.

SCOTTISSUE TOWELS
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Thirsty Fibre REG. U. S. PAT. OFF.

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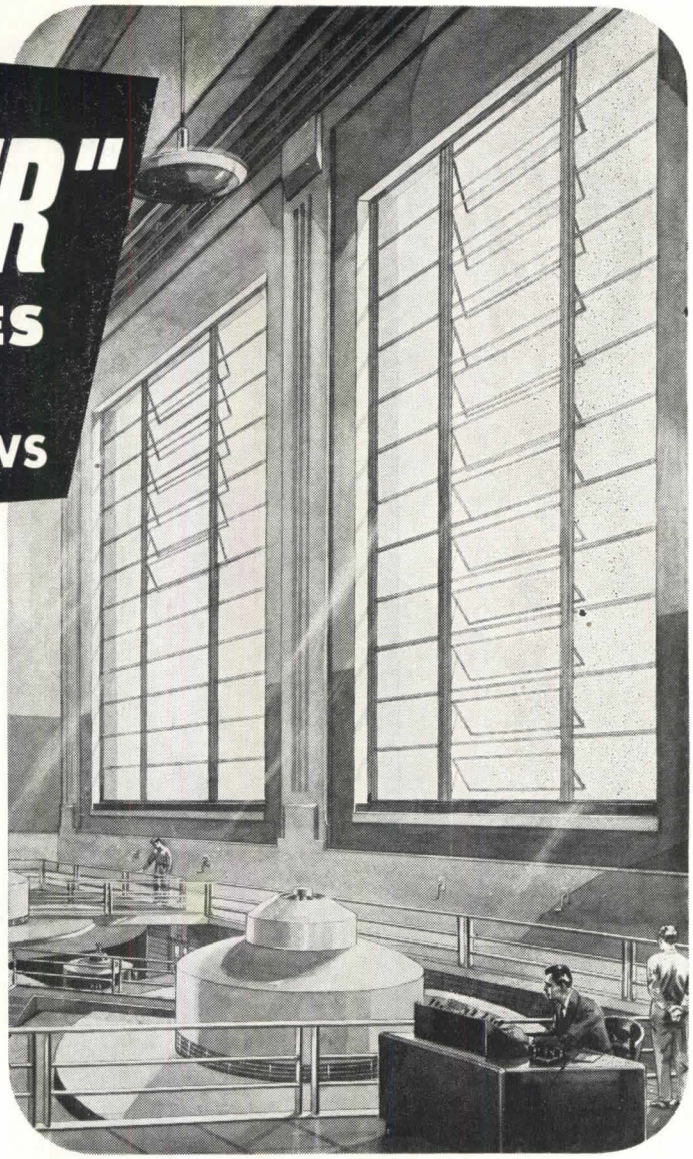
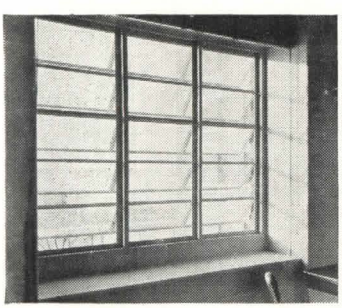
MORE "LIGHT-POWER" FOR POWER HOUSES WITH TRUSCON DONOVAN STEEL WINDOWS

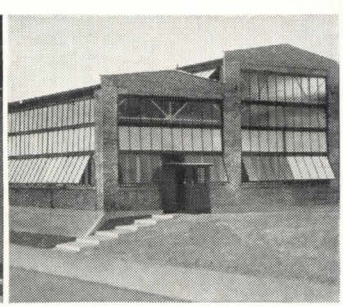


● Applications of mechanically controlled Donovan Windows for power house installations are steadily increasing. The manifest advantages of this exclusive Truscon product are becoming more generally appreciated by architects and engineers seeking a practical solution of the problem of adequate ventilation control for large window openings. With the entire operating mechanism integrally built into the unit, but completely concealed, the unsightly appearance of exposed shafting, gears and ventilator arms is avoided. No expensive field labor is required to install and adjust the operating mechanism. It is only by the use of the largest and heaviest steel window sections rolled for window manufacture, and available exclusively to Truscon, that single window units up to 18′-0″ in height and 16′-0″ in width may be completed in our shop and shipped as an integral unit ready for installation and use. Write for catalog describing Truscon Donovan Steel Windows.

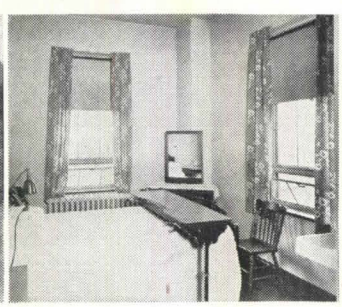
Truscon manufactures the most complete line of Steel Windows and collateral material obtainable from any one source. The illustrations indicate a few types.



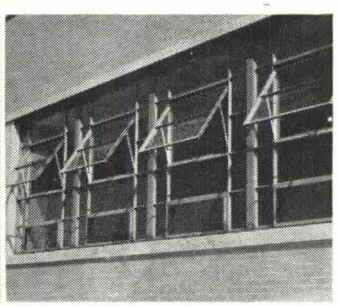
Maxim-Air Louver Type Windows



Top Hung Continuous Windows and Mechanical Operators



Double-Hung Windows Medium and Heavy Types



Intermediate Projected Windows

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YOUNGSTOWN 1, OHIO
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Announcement

to those who sell, buy, specify or install

Douglas Fir Doors

GRADE A F.D.I.DO

EFFECTIVE August 15, 1947, all doors manufactured by member factories of the Fir Door Institute were placed under official F.D.I. inspection — to assure the highest possible degree of product quality and uniformity.

At the same time, revised industry standards were adopted by Institute members, those changes including new dimension specifications.

•

With the start of inspection, based on F.D.I. standards, Douglas fir pre-fit stock doors are now manufactured:

1/8-inch less than net book height;
3/16-inch less than net book width.

These new sizes permit pre-fit stock doors to be installed without sawing, trimming, or planing — *saving on-the-job time and reducing costs.*

•

The official F.D.I. seal and grade-mark will be placed on every door coming under the Fir Door Institute inspection service — and *only* on officially inspected doors. Grades will continue to be indicated by the letters A, B, C and MR; and such grades will be maintained in strict accordance with the industry standard.

The official Fir Door Institute seal — reproduced in the heading of this advertisement — is a symbol of fine craftsmanship now backed for the first time by a rigid inspection. Specify Douglas fir doors by this "grade trade-mark" — your assurance of controlled quality and product uniformity.

FIR DOOR INSTITUTE

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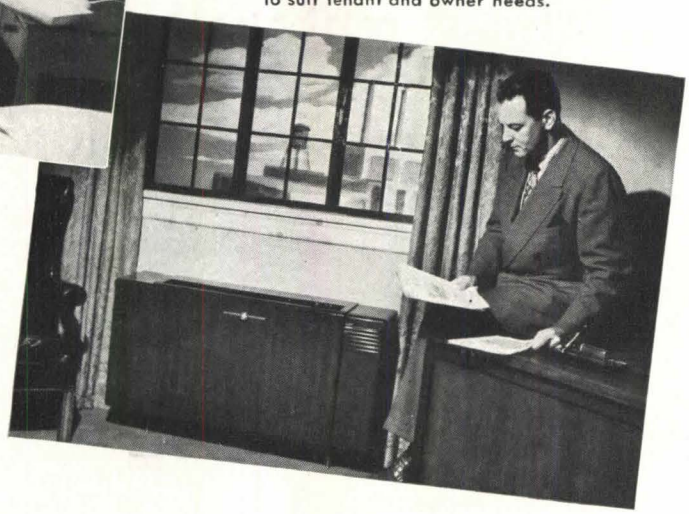
THE NATIONAL ASSOCIATION OF DOUGLAS FIR DOOR MANUFACTURERS

IN HOTEL, MOTEL AND MOTOR COURT installations General Electric Personal Weather Control keeps guests comfortable . . . builds transient trade.

IN OFFICE BUILDING, APARTMENT, AND HOSPITAL installations, General Electric Personal Weather Control offers an adaptable system to suit tenant and owner needs.



Here's a NEW idea in

PERSONAL WEATHER CONTROL

(and new equipment, too)

IT'S A LOT EASIER now for an architect to design a personal weather control system for a multi-room building. Gone is the need for "fitting the building to the air conditioning system." General Electric has developed basic equipment units adaptable to widely varying requirements.

The General Electric central plant room air conditioner is a versatile element which architects and engineers can use for designing a practical air conditioning system. Clients, too, will be happy at the resulting economic balance between installation and operating expenses . . . which makes for low owning costs.

To give you full information on equipment for *any* type of system . . . from all central plant components to controls and individual room units, General Electric has established a force of field specialists. Call the local G-E air conditioning man today. He'll be glad to work with you in designing systems and selecting equipment. *General Electric Company, Air Conditioning Department, Section 75010, Bloomfield, New Jersey.*

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Better Air Conditioning

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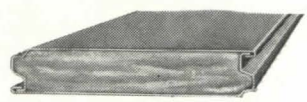

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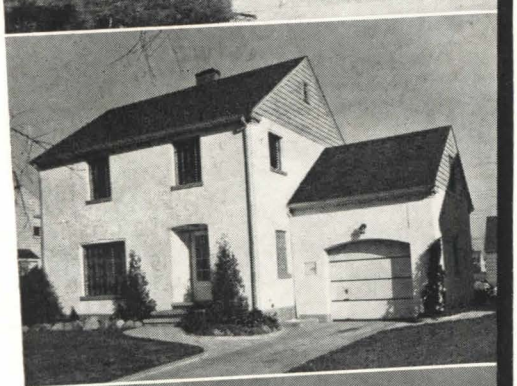

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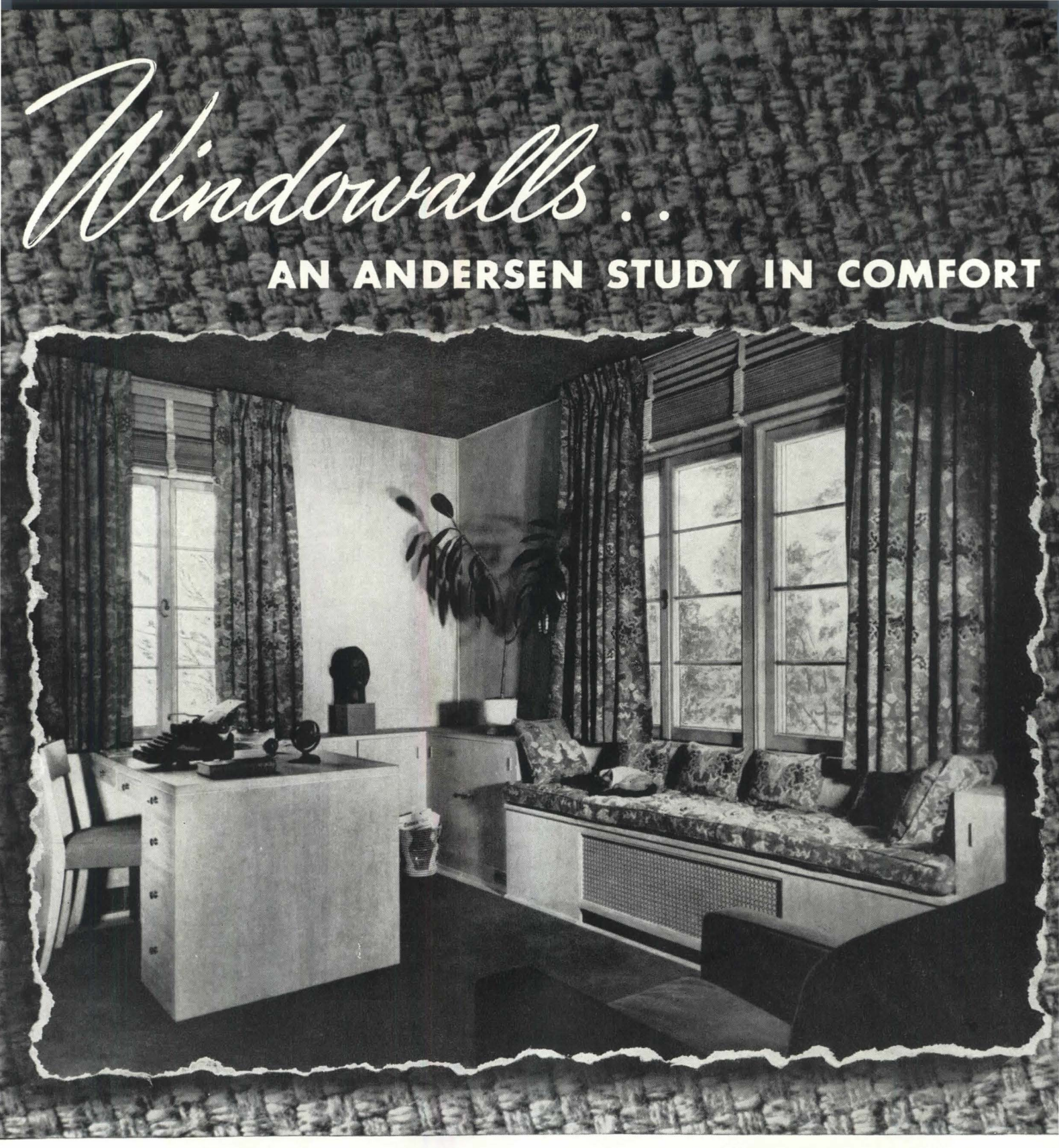

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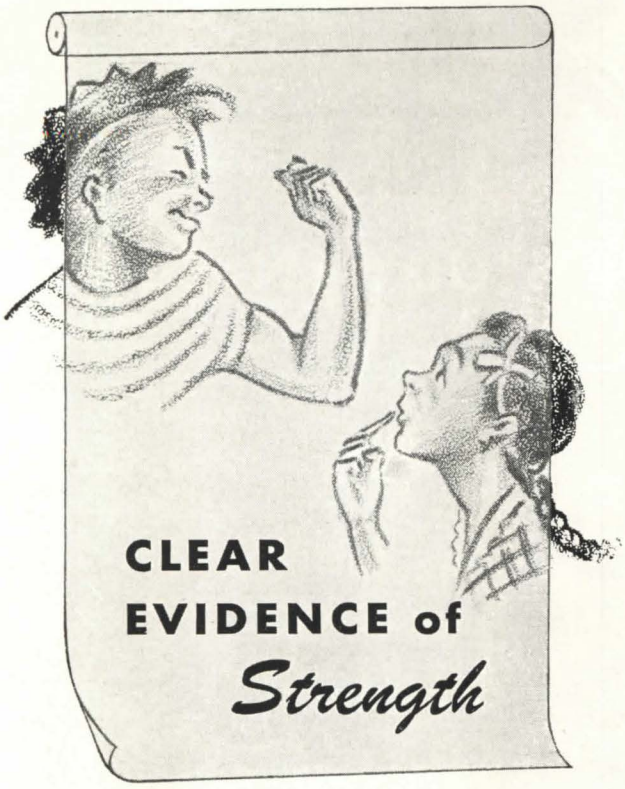

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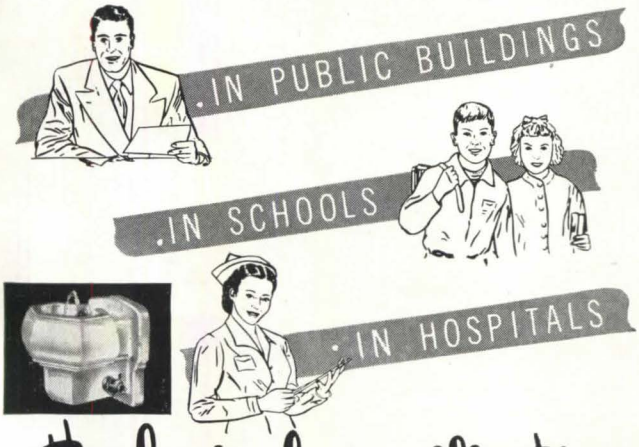

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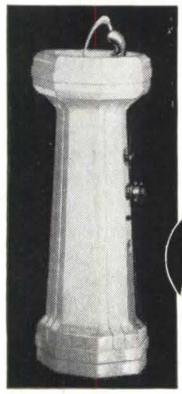

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WHAT REVIEWERS SAY

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250 pages 8½ x 11½ inches, illustrated $7.50

This is an imposing and important book on low-cost housing. The late Maj. Gray, consultant in architecture and city planning at New Haven, Conn., gave his life to the subject and has here reduced to text and an abundance of illustrations his voluminous knowledge.

His study of American needs, backed up here by analysis of the philosophical and economic implications of decent housing, leads to the firm conviction that national policy must be directed toward the provision of wholesome housing for all economic groups. This means subsidy for the low-income groups—public housing—and various types of aid or stimulant, such as mutual ownership, for the borderline groups who are above subsidy but below the level of good private-enterprise construction.

Maj. Gray believed that the major issue confronting this and every other country is that of "raising the general standard of citizenship," and he correctly pointed out that there are two main ways of doing it—by better education and better home environment. His book contains a useful review and appraisal of the whole federal housing program to date.—*Robert Lasch.*

THE CHICAGO SUN BOOK WEEK
SEPTEMBER 29, 1946

This is the most profusely illustrated book on housing that has yet appeared. In 47 full page plates there are grouped more than 300 photographs and plans. There are also 13 separate graphs and 25 tables of data on pertinent matters. With this wealth of material, the book should be of value to architects, planners, and interested persons from all fields of civic life.

THE AMERICAN CITY
AUGUST 1946

If the reader will take the trouble to read Major Gray's book—it is a solid package of information—he will be grateful for an introduction to a subject that concerns him more vitally than he realizes.—*Ely Jacques Kahn.*

THE SATURDAY REVIEW OF LITERATURE
OCTOBER 5, 1946

NEW CITY PATTERNS . . . . . *By S. E. Sanders and A. J. Rabuck*

200 pages 8½ x 11 inches, illustrated $8.00

The chapters concerned with principles and procedures are excellent, and so on the whole are the many drawings, photographs, charts and maps with which the book is illustrated.

REGIONAL PLAN ASSOCIATION
JANUARY 15, 1947

Every civic-minded American should find the numerous photographs of blighted areas, diagrams of their causes and costs, and the maps illustrating ways for their elimination, of absorbing interest. This is a readable book, with the argument simply and logically presented. The successive points are illustrated by concrete examples.—*Virginia Turrell.*

NEW YORK TIMES
MARCH 2, 1947

THE ART OF BUILDING CITIES *By Camillo Sitte . . . . Translated by Charles T. Stewart*

130 pages 8½ x 11½ inches, illustrated $6.00

Any book commended by Eliel Saarinen should be required reading for all architects. This book is peculiarly appropriate at this time, when it is imperative to rebuild numberless devastated cities and rehabilitate others which are rapidly decaying at their centres.—*George J. Cox.*

THE WORLD IN BOOKS
JULY 1946

The translation is especially timely today when architects and city planners are concerned with rebuilding wartorn cities or clearing slum areas of those which escaped the disaster. They will find Sitte's work a thoroughly modern approach to the problem of developing a "living" city.

THE AMERICAN CITY
MARCH 1946

OTHER CITY PLANNING BOOKS

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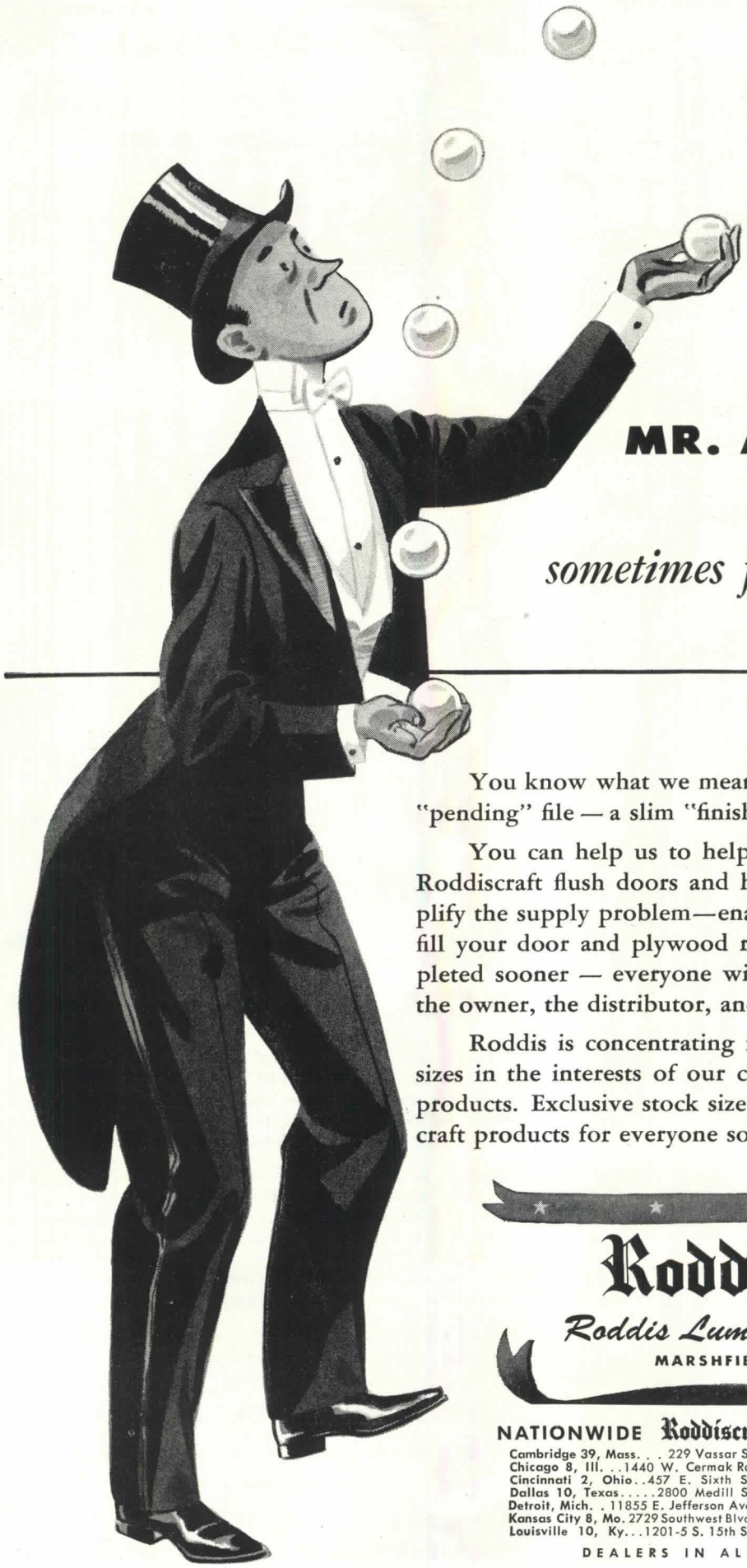

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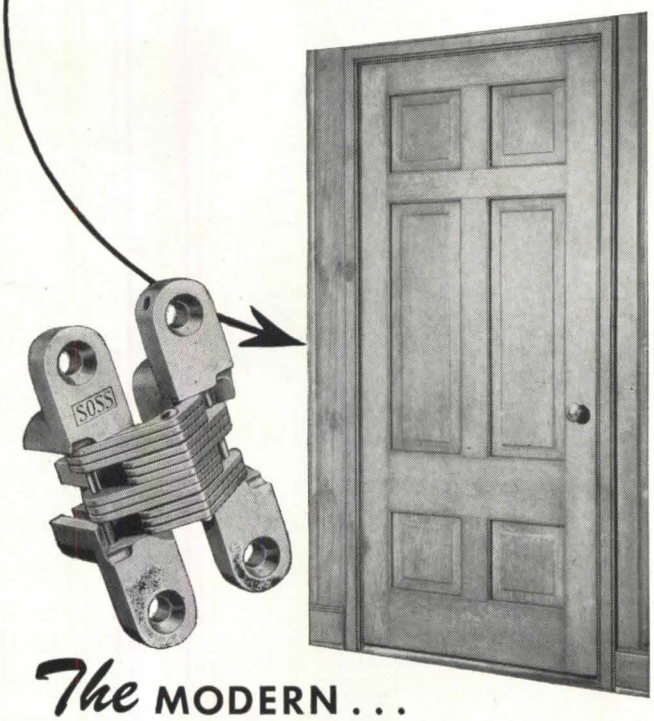

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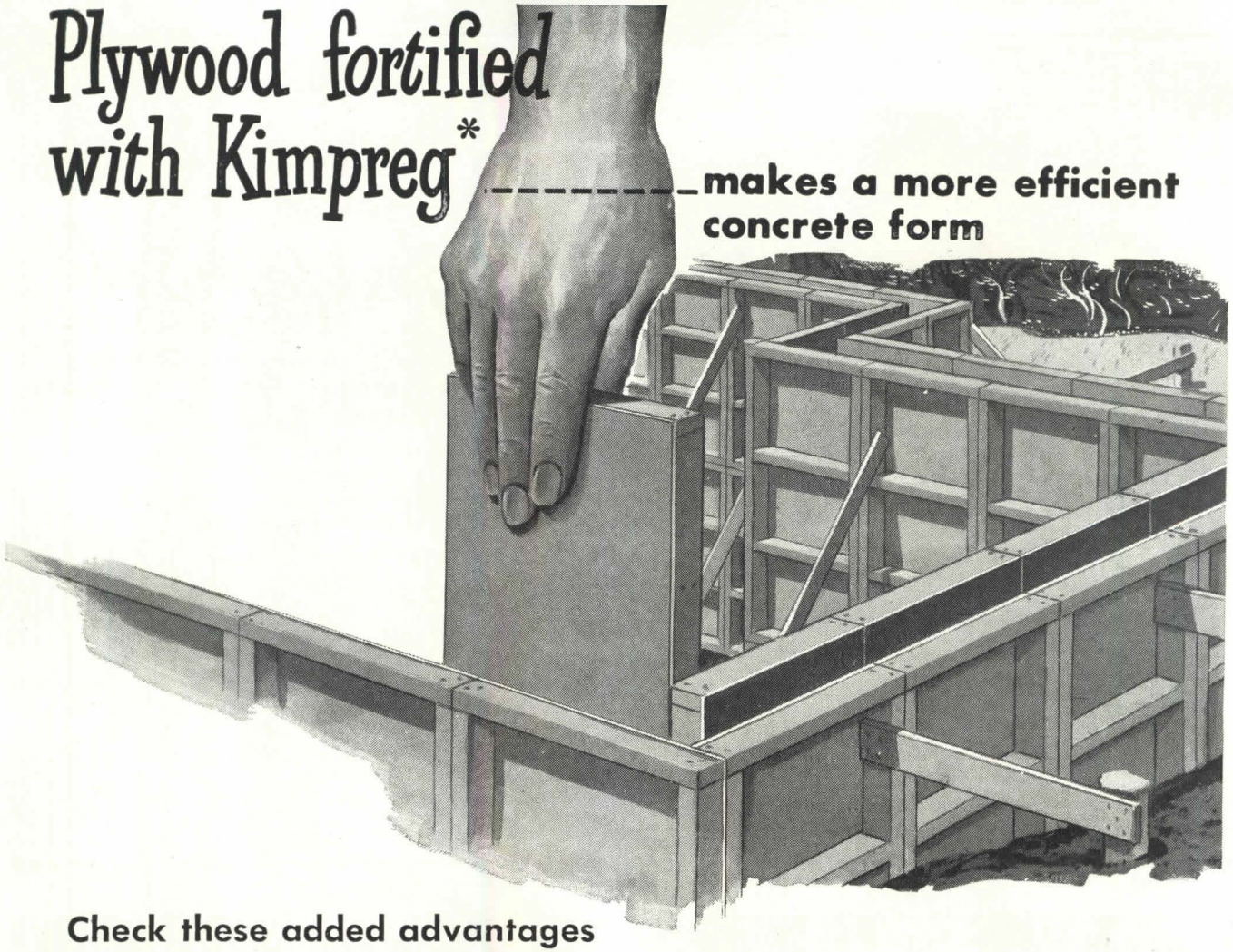

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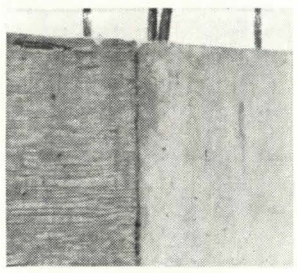

See the difference

Concrete on left was poured against ordinary plywood. Note the rough surface. A KIMPREG-surfaced plywood form produced the smooth-looking concrete on the right.

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A feature of the unique engineering design of the system is that there are no drafts. In summer, doors are removed and the change from outside heat to cooled interior is a gradual one. Ceiling outlets, harmonizing with the decorative scheme, supply a steady circulation of filtered air throughout four departments. Self-service refrigerated cases display meats wrapped in cellophane; others contain frozen sea foods, baked goods, dairy products and ice cream. There is also a beauty parlor and floral shop.

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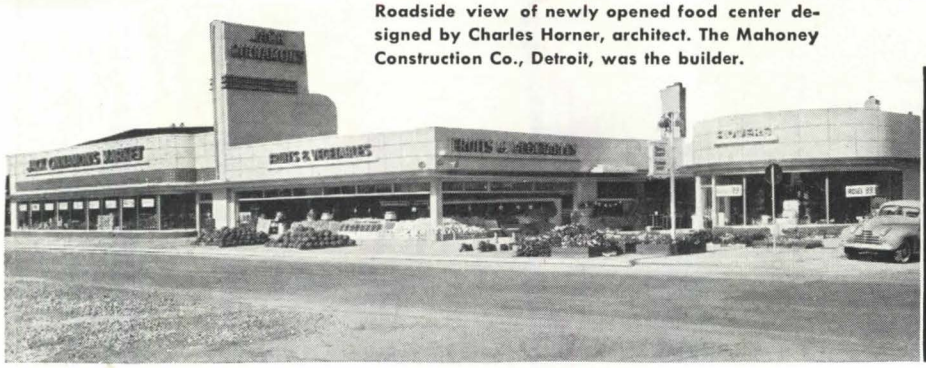
Roadside view of newly opened food center designed by Charles Horner, architect. The Mahoney Construction Co., Detroit, was the builder.



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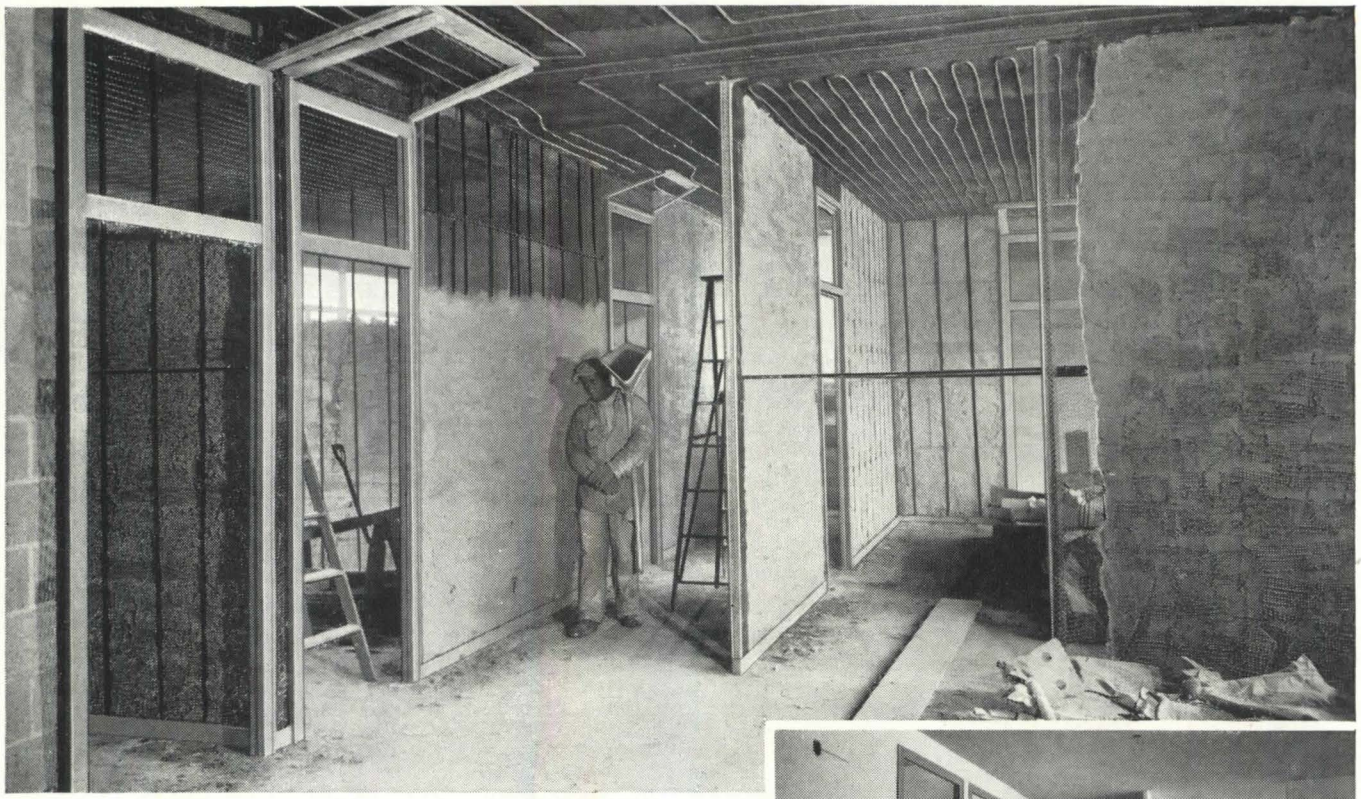

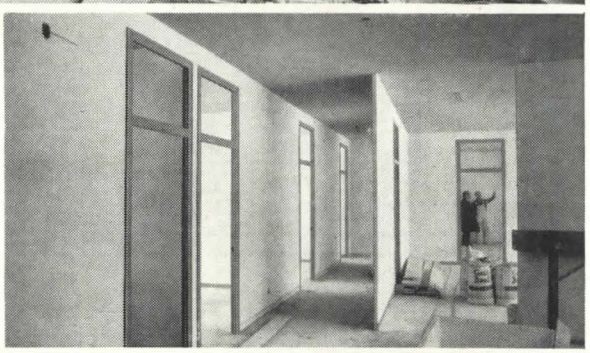

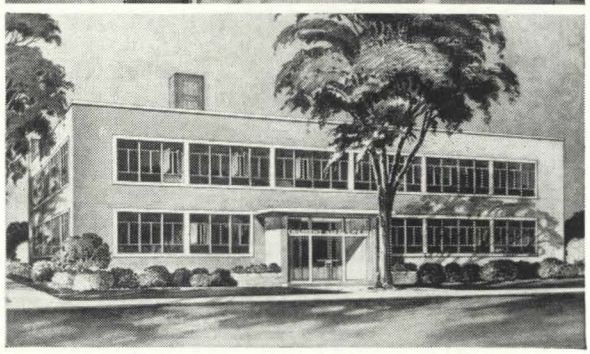

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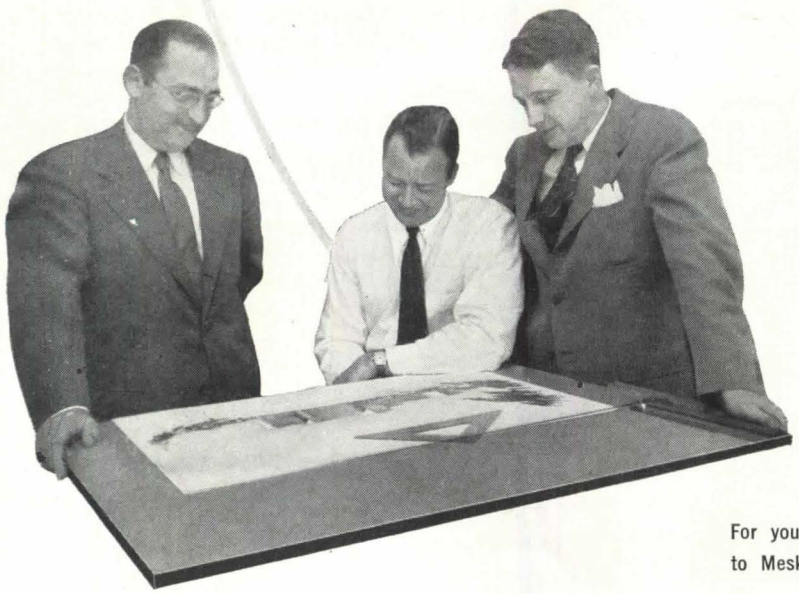

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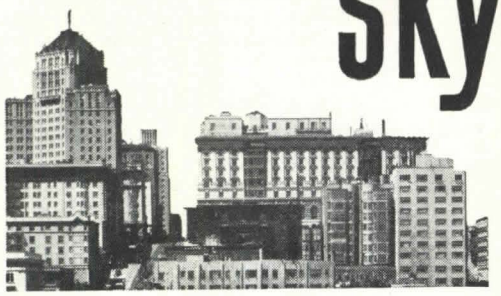
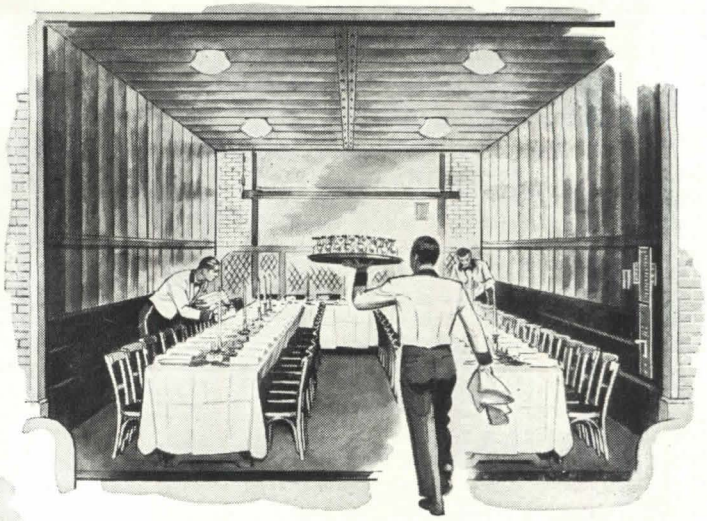
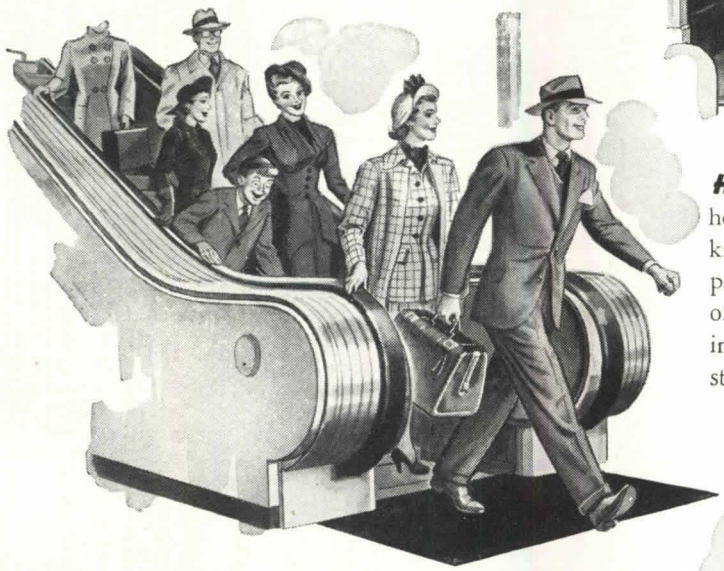


In San Francisco, for example, there are 3,394 Otis elevators — more than all other makes combined. High-spot of this beautiful city is the famed "Top-of-the-Mark" Lounge, atop the Mark Hopkins Hotel (*upper left*). Two of the hotel's high-speed Otis elevators are reserved for express travel to the Lounge.



64-DINER QUESTION. Ever hear of a banquet in an elevator? Among the world's largest, the freight elevators in the Port of Authority Building in New York have a floor area of 17 by 34 feet — large enough to comfortably seat the 64 diners who held a banquet in one of them. These elevators can handle fully-loaded 10-ton trucks weighing up to 40,000 pounds at a speed of 200 feet per minute, and are just one more example of Otis' ability to build the right equipment for any materials-handling job.



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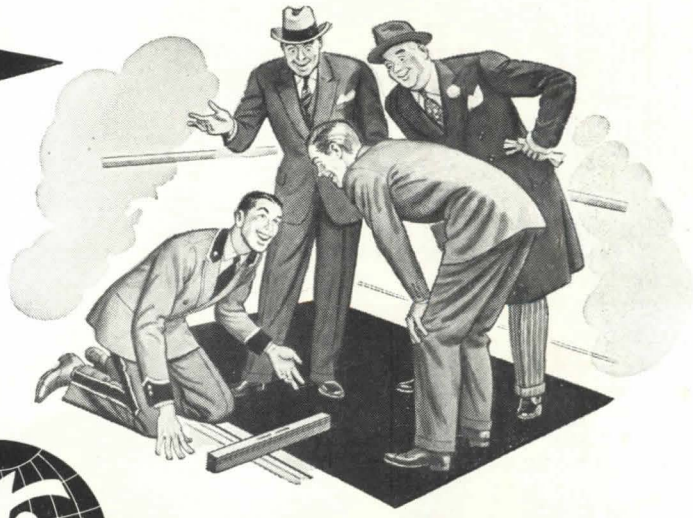

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OBSERVATIONS

THE BRUMBAUGH STORY IN THIS ISSUE DOESN'T BEGIN TO TELL ALL ABOUT THE PRACTICE OF ARCHITECTURE IN A SMALL OUT-OF-THE-WAY PLACE. What Sheldon Brumbaugh (and we editors) were anxious to get across was the idea that such a grass roots practice is possible, and is rewarding in a very special sense. What we couldn't begin to describe are the occasional lonesomeness, the recurring discouragement, and the inevitable loss of contact with one's colleagues. People like Brumbaugh give up the bar at the Architectural League for something they consider much more important. There are times, though . . .

•

I STOPPED OFF AT A TOWN IN THE MIDWEST ESPECIALLY TO MEET AN ARCHITECT WHO HAD SENT US SOME PHOTOGRAPHS OF HIS WORK. He had recently completed several stores, a small office building, a hospital addition, and, of course, houses. The photographs looked like good stuff—mature, dignified, sure, honest. And appealing. Sometimes you can be fooled by tricky photography, though, so I decided to stop on my way to Kansas City to meet John (let's call him John) and see his work. I had written him that I'd fly in during the evening, go to a hotel, and call him in the morning.

The plane was an hour late, but John was at the airport to meet me. I guess an architectural editor is easy to spot, because he came right up, with a big grin on his face, and introduced himself. "You shouldn't have done this," I said. "I could have taken a cab to the hotel."

"Hotel, hell," he said. "I cancelled your hotel reservation. You're coming out to the house."

•

I HAD AN INKLING OF WHAT WAS COMING AS WE DROVE TO HIS HOME—HE WAS BUBBLING OVER WITH QUESTIONS. Where was I going in Kansas? Whom would I see? Any new good men out there? I told him what my plans were. Had I ever seen F.L.W.'s church in Kansas City? John understood that it was pretty bad; Wright blamed the builder. I'd better take a look at it and would I let John know what I thought about it? I told him that I'd seen Wright's college buildings in Florida last year, and I relayed all the gossip about how the chapel tower had blown down, and that Wright was reputed to have tried to get them to dynamite the whole thing and they refused, and that I thought the forms were still pretty impressive. "By God, that's interesting," he said, and he almost ran the car off the road. It wasn't that interesting.

He told me that there was a job of Sullivan's and a house of Wright's in town, and he added, "I want you to tell me what you think of them."

"Look," I said, "I'm not that much of a critic." He turned and looked at me with disappointment, and then he grinned and slapped my knee. I began to understand. John was hungry for talk—informed talk—even if he had to kid himself that it was informed. So I had a responsibility. I sighed because I had thought to relax for a few days.

His house was nice—as good as he had been able to make it within the handicaps of a restricted subdivision. His wife was charming, and I was allowed to peek at the baby. Then we began serious talk, wetted down with good bourbon.

What was really happening in the schools? How about good old Cornell—that's what he'd heard; what a shame. So Dick Bennett had left Yale. Was Gropius really turning out a good product? Had I met Aalto—what was he like? What was the real dope on U.N. headquarters?

Over the third drink I apologized to Mrs. John. "It must be very boring to you," I said. "Architects always go on like this."

"No, please," she pleaded. "John hasn't had anyone to talk to for so long . . . unless you're tired," she added politely.

So we went on. What was the informed interpretation of the Dartmouth eye experiments? How about Harmon's studies—were they resulting in usable dope? Had I been to Princeton? What kind of a guy was Giedion? We talked about the A.I.A. and the C.I.A.M., and esthetics and construction and personalities. We gossiped—he had worked with Saarinen and had some wonderful stories—and we laughed and we argued. Finally, very late, we went to bed.

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THE NEXT DAY JOHN DROVE ME AROUND TO SEE ALL HIS WORK. In general it was as excellent as I had expected it to be. It expressed his own robust character, and it looked as though it belonged to the region. It was honest, vital, contemporary work. Crude in many spots, and he admitted it. "Thank God for your magazine," he told me. "Not that I want to copy or crib, but it's exciting to see what people who are better than I am are doing in other parts of the country."

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THAT NIGHT HE ASKED THREE OF THE OTHER ARCHITECTS IN TOWN TO HIS HOUSE AFTER DINNER. I was catching a late evening plane to K.C. These other architects were very pleasant. One of them, named Morris, said, "I guess we won't get along very well—I don't like this modernistic stuff."

"We ought to get along fine," I replied. "I don't like modernistic stuff either." He looked at me for a moment and then laughed. "Hey, Harry," he called to one of the other visitors, "Tom says he doesn't like this modernistic architecture." They both laughed uproariously. The third architect chimed in. "Say, Harry, shall we show Tom the way we kid John?" he asked. "Sure," Harry agreed.

"Well," he said, "when John comes into the room, like say at an A.I.A. meeting, we jump up and turn a chair upside down, like this . . ." and he turned a chair over, so that its legs stuck in the air. "Then we say, sit down in *that* chair, John, that's *functional*!" And they all three laughed heartily. John laughed ruefully. I laughed, to be polite, I guess.

I had to leave soon. "You're a good guy, Tom, even if you do publish all these cow barns," Harry told me. "We'll all drive you out to the airport." They did, and we had the kind of good time together that architects always have, no matter how different their points of view.

As I got on the plane, I heard my name called and I looked back, to see the four of them on the terrace of the terminal building. Harry waved to me, picked up a metal chair and turned it upside down. I could see them all laughing. John waved good-by, with a weak gesture.

Thomas H Creighton