

PROGRESSIVE ARCHITECTURE

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newsletter

November 1949

- House Beautiful started an editorial feature in its October issue that deserves the attention of all architects and designers. The subject matter is climate control, and the facts that have been turned up for the magazine by a staff of specialists will provide for the first time design data on temperatures, humidity, rainfall, sunshine, etc., in various climatic regions. A.I.A. will publish the technical findings, in a form well-worth buying and studying.
- P/A's second study of how building products get into buildings has been completed, was presented to Producers' Council at Chicago meeting. Among interesting facts turned up are: owners of buildings studied considered architect most important factor in selection of products used; 66% of products used were selected by type before working drawings started, 40% of selections by brand were made during preliminary design period.
- Architectural offices studied in the survey employed an average of 12 people. Most active building type was shops and stores. Only 14% of the firms specialize--3% in residential work--but 70% of the firms actively solicit residential commissions.
- The survey results, intended to better relations between architectural offices and building product salesmen, are available to interested parties.
- Architectural Advisory Committee to FPFA, originally organized by Howard Myers, later headed by William W. Wurster, has been disbanded. Reason is that it had grown to unwieldy size; a very much smaller group is being considered for similar advisory function.
- Walter Wurdeman, partner in the very active Los Angeles architectural firm of Wurdeman & Becket, died on September 17. Wurdeman was 46; the firm in recent years has done a great volume of important work in the southern California area, most dramatic of which was the much-published Prudential Building.
- Backlog of construction work in the "heavy" category (reported by Engineering News-Record as \$45 billion at end of August) augurs stable period ahead. However, as W. C. Bober, Johns-Manville economist, points out, backlogs are not assured work. Much of present figure is due to hope for lower costs, much more is in public works category which may wait for private business let-up.
- Steel strike will undoubtedly result in curtailment of some business activity. Prediction is that strike issue will be resolved before steel tonnage available for fabrication is used up. Hence few building products that use steel are likely to be in short supply during fall and winter.
- Architectural League in New York will again hold its once-annual exhibit (the last one was in 1938) in the spring. During the winter months a series of shows will lead up to it, and the

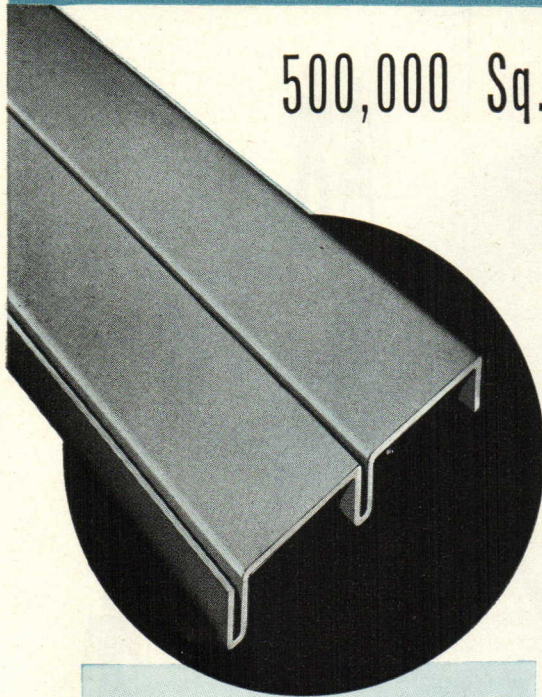
(Continued on page 2)

League is now inviting preliminary submissions--not more than ten 11" x 14" photos, with an entry fee of \$5.00. Exhibits for spring show will be selected from these monthly exhibitions.

- Ecole des Beaux Arts and the A.I.A. have worked out an arrangement whereby a committee in the US will select architectural graduates here for admission to the French school without examination. Committee consists of Julian Clarence Levi, Leopold Arnaud, George S. Koyl, and Charles Butler.
- Nathaniel S. Keith, a man with newspaper and government-agency background, has been named director of Title I program (slum clearance and urban redevelopment) under Housing Act of 1949.
- Output of structural clay products, used largely in institutional building programs, is running above 1948 comparable figures. Inventories are low and manufacturers advise advance orders to meet construction dates.
- Magnesium wall forms, claimed to be light, rigid, resistant to corrosion by the alkalies in concrete, are being fabricated and tested by Symons Clamp and Manufacturing Co., Chicago, Ill.
- In connection with a regional A.I.A. conference in St. Louis on November 18th and 19th, Washington University will be host to an educators' conference on the 17th. During the meetings Alfred Roth, Ernest Kump, James Fitch, Nat Owings, Ken Welch, Ralph Walker and others will talk.
- National Bureau of Standards announces revision of Commercial Standard CS35-47, relating to hardwood plywood. It provides minimum specifications for four standard types, based on water resistance and durability of bond. A limited number of copies is available.
- Increased use of water for air conditioning systems is worrying many municipal water supply agencies. American Public Works Ass'n reports that two related problems--supply and disposal of waste water--are causing some cities to pass or consider ordinances regulating such use.
- Some building product prices continue to drop. Westinghouse announces reductions on certain electric water heaters. Dodge Vinyl-Cork floor tile has been reduced 10 to 20%.
- US Plywood announces national distribution of Plankweld, a hardwood plywood that is factory finished with grooves at each side to permit easy installation over new or old wall surfaces. Sheets are 16 1/4" x 8'.
- A competition for design of welded bridges, open to "designers and engineers," is announced by James F. Lincoln Arc Welding Foundation, of Cleveland, Ohio. First prize is \$5000; two other prizes and ten honorable mentions will be given. Contest closes June 30, 1950.
- A lighting committee at M.I.T., studying best possible light sources for use at the college, has come up with a recommendation of luminous ceilings formed by fluorescent lamps mounted behind translucent plastic sheets. Committee consisted of Profs. Beckwith (architecture) and Moon (electrical engineering) and Mr. Peterson, superintendent of grounds.
- An exhibit directed toward high school students, prepared by the N.Y. Chapter, A.I.A., will be shown in 54 high schools of that city in the coming year. Board of Education is the sponsor.

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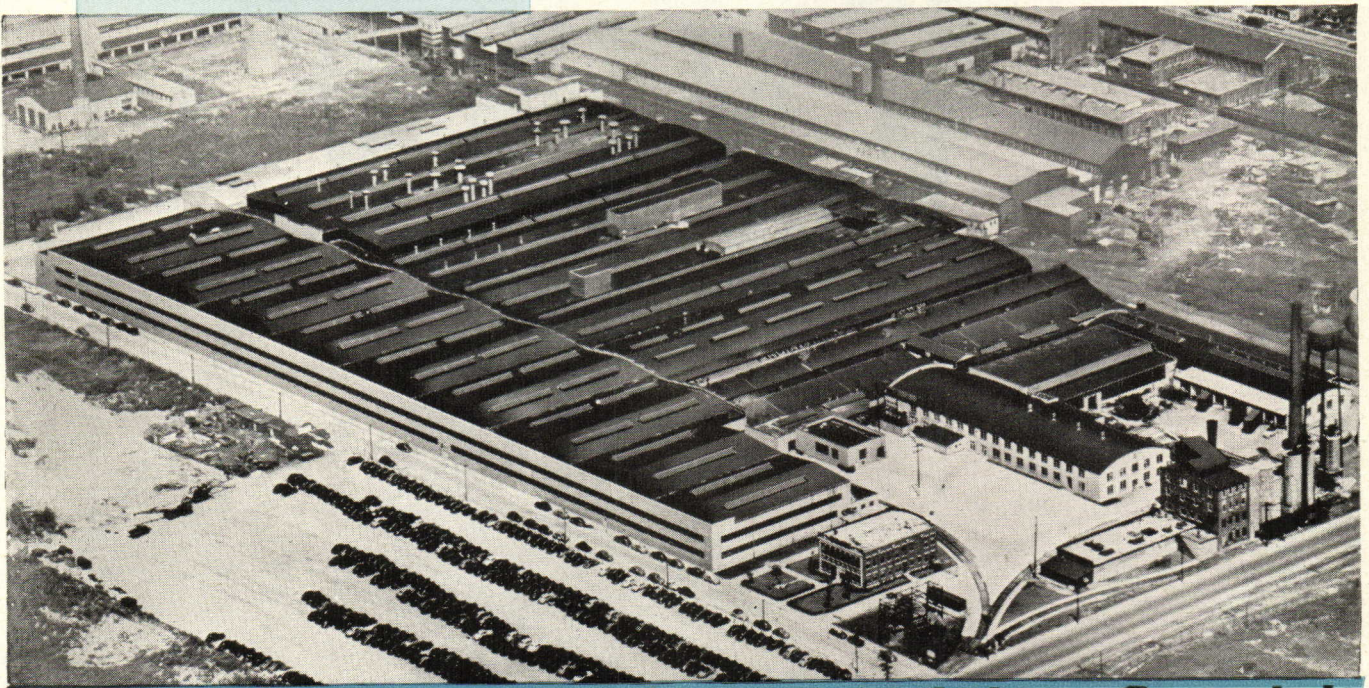
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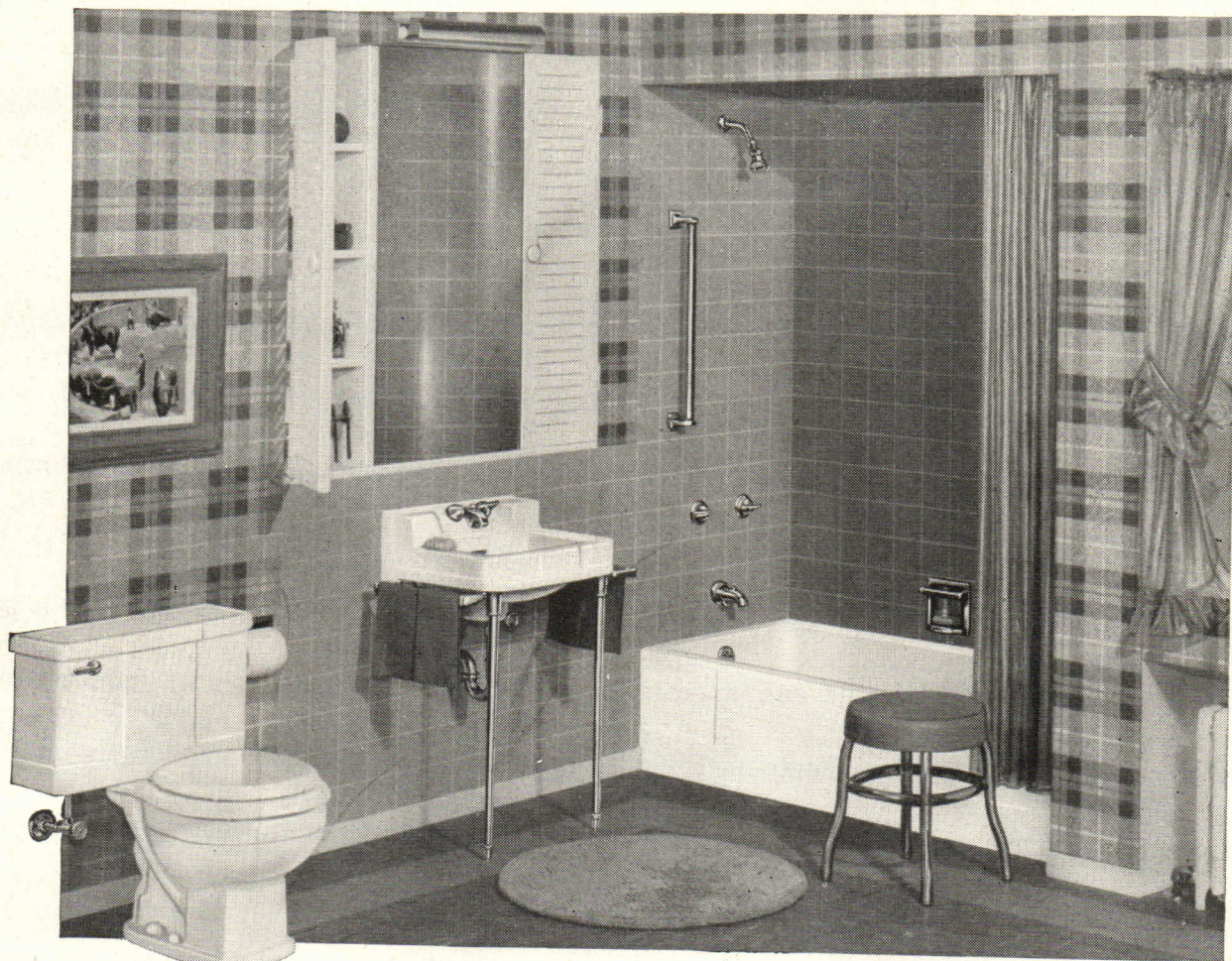
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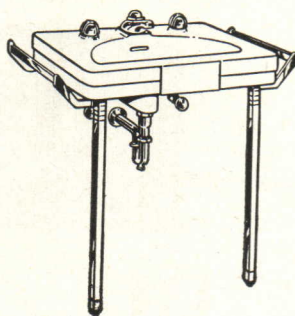
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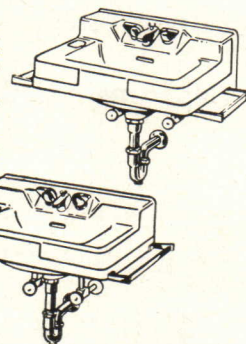
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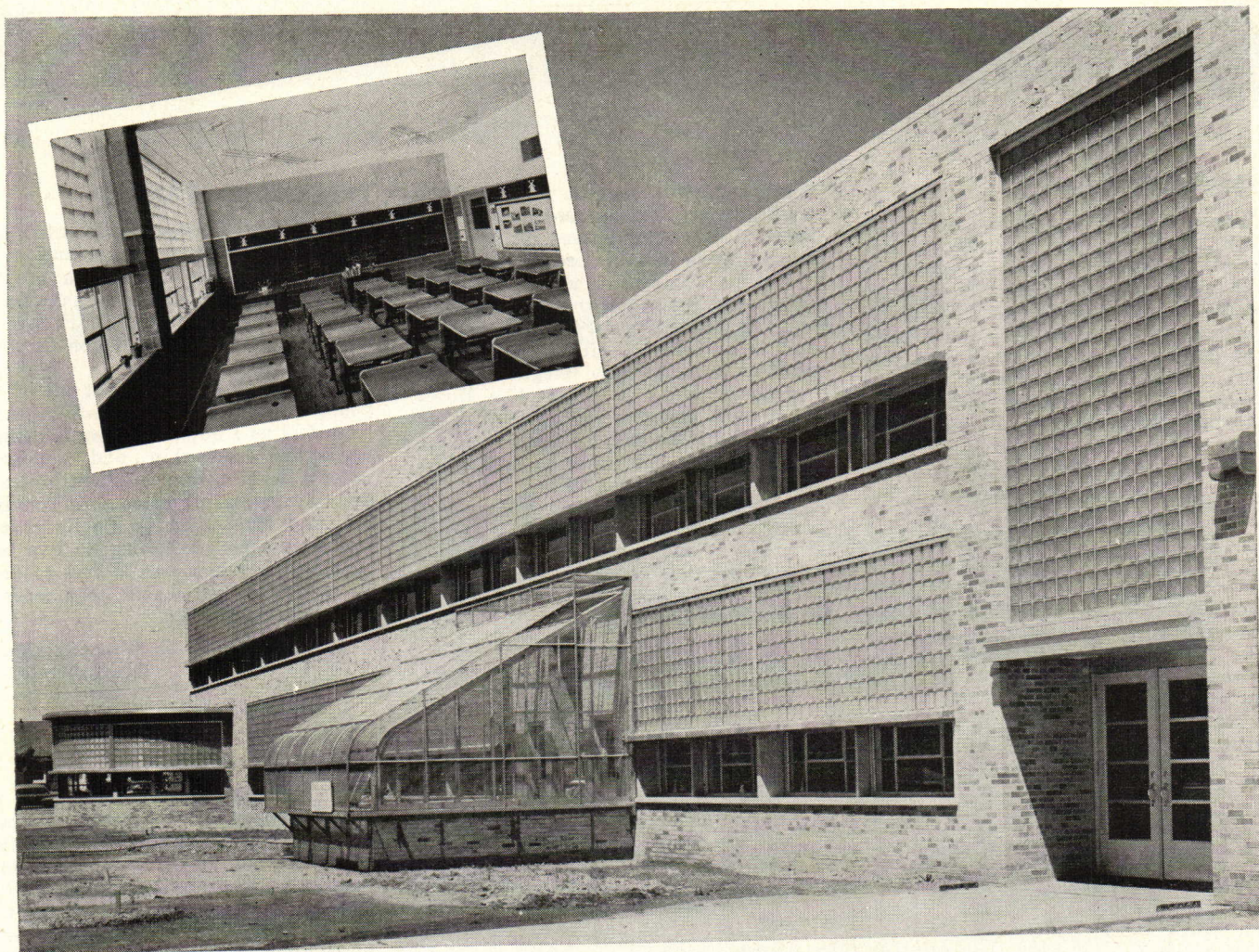


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NOVEMBER, 1949 7

REPRESENTATIVES IN PRINCIPAL CITIES

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Views

(Continued from page 8)

who realize at the same time that the older men do have something to offer? Best bet is most of them would remain in the A.I.A. cut off from the needed support of the younger men.

In the second place, I question whether Mr. Conklin comprehends the magnitude of the practical problems involved in setting up a functioning organization of the sort he proposes. I don't know the exact reasons for A.S.P.A.'s demise but I dare say one of

its troubles was financial, and a second the problem of finding sufficient members willing to do the dirty work. Anyone familiar with the history of the American Veterans Committee will appreciate the difficulties to which I refer. A.V.C., with its "citizens first, veterans second" declaration, grew to 100,000 vocal members in the first year following the last war. Broadly speaking, its program corresponded to what undoubtedly would become the program of Mr.

Conklin's proposed A.P.A.—a truly progressive one. In spite of its remarkable membership and laudable program A.V.C. faced economic embarrassment from the very start and the increasingly acute problem of maintaining sufficient workers at the local level. With its membership currently a fraction of the above figure, but with its debts reduced in far lesser proportion and its future frankly in doubt, A.V.C. affords stark proof in this material age that ideals alone will not keep an organization alive.

As a counter proposal to Mr. Conklin's, the sincerity of which I do not question, I should like to urge that the younger men in the profession immediately join the Institute (a misleading and inappropriate name in my estimation—preferably American Society of Architects) and work in it with the same intensity with which we too often have criticized it. Remember; 25 years from now the men coming out of the schools will consider us as "fusty" as some of the elder members of the profession may now appear to us. Remember further; throughout history significant progress invariably came about slowly. I believe the same holds true for the architectural profession and that this progress can best be furthered by our working together.

WILLIAM W. LYMAN, JR.
Cambridge 38, Mass.

HEARD THE CALL

Dear Editor: My heartiest congratulations to George W. Conklin for his proposition (August 1949 P/A) and I believe that all progressive architects will agree with him. This proposed organization will have a very great success if handled right, because the architects who seek progress and not only prestige and spinweb will join when they know that it is a living organization, where they find real competition between themselves and where they find the assurance that their work, when found worthy, will be brought out into the open with their names.

Today 1,000 very able and progressive architects are unknown to the public; but their work *is* (only with other names, because these thousands are giving their progressive ideas to established architects, who get all the credit for the work they have never done). We all know this, but not the public.

We need the established architects to make a living as they need the thousands who work for them; but this proposed organization could change this so that everyone would get the credit that belongs to him. That would be only fair.

Let's go ahead with this proposed organization, first nationally and then internationally, and everybody will profit from it.

MARTIN GUTTMANN
Collingswood, N.J.

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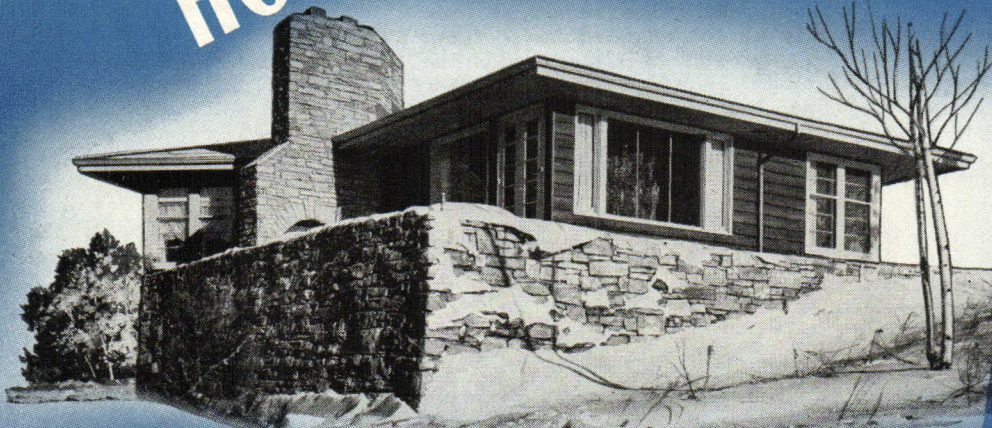
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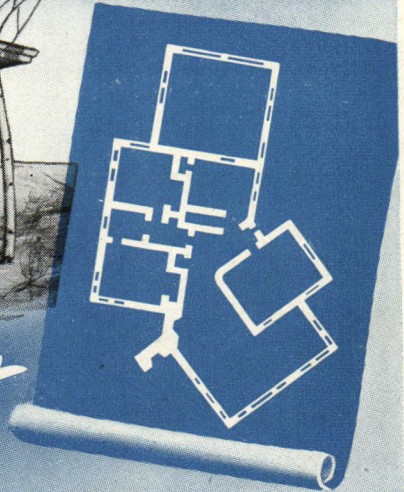
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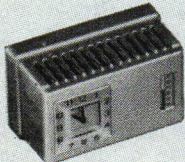
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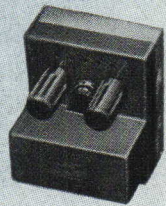


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(Continued from page 8)

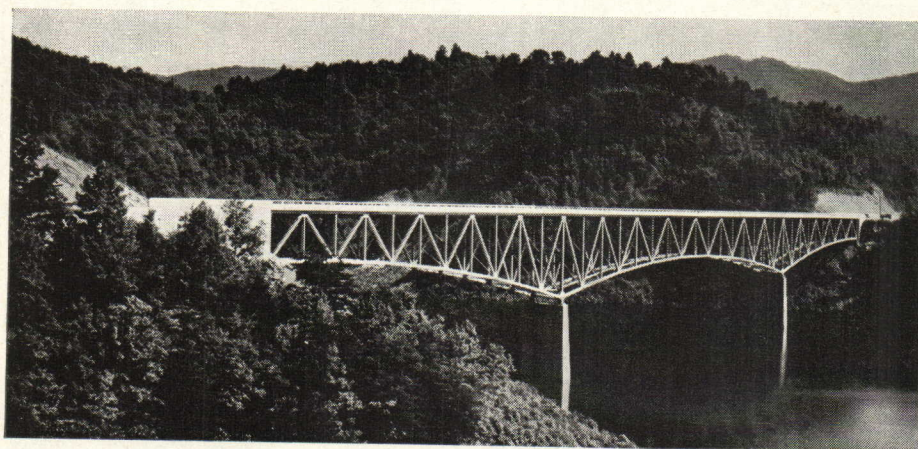
at their professional meetings trying to devise a way to "stop the engineer." At that time, I did not often hear the

with us today. The news magazines and the newspapers are telling the public that, "like it or not, modern architec-

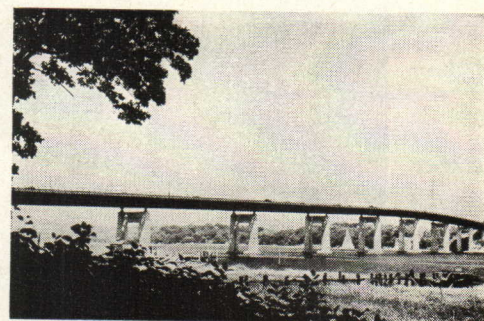
tect's influence is beginning to make itself apparent by the snobbish and dilettante attitude of some modern architects who make modern architecture "a cult of the obscure and the esoteric." The "culture vultures" of the eclectic period have become the "artistic mystics" of today.



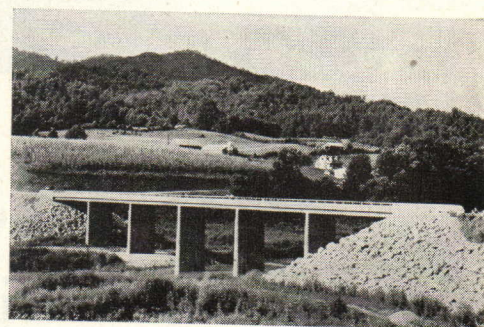
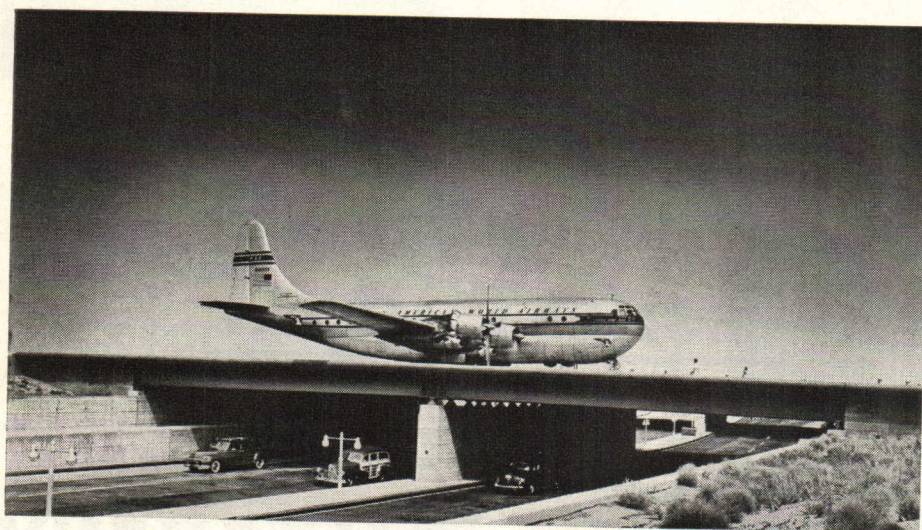
Progress Report



Watauga River Bridge, Carter County, Tennessee, designed by TVA and built by Nashville Bridge Company for the state highway program, won the A.I.S.C. Class I Award for beauty this year (above) and the Award in Class III went to the Airport Apron Overpass over Van Wyck Expressway at New York International Airport (below). The overpass was designed by Clarke, Rapuano & Holleran, consulting engineers, New York, and built by American Bridge Company for City of New York.



Raymond E. Baldwin Bridge, between Old Lyme and Old Saybrook, Connecticut, winner of honorable mention in Class II, was designed by Connecticut State Highway Department's division of bridges and structures, with Howard, Needles, Tammen & Bergendoff of New York as consulting engineers. It was built by American Bridge Company and is owned by the Old Lyme-Old Saybrook Bridge Commission.



Roan Creek Bridge, Johnson County, Tennessee, winner of honorable mention in Class III, was designed for the county by TVA and built by Nashville Bridge Co.

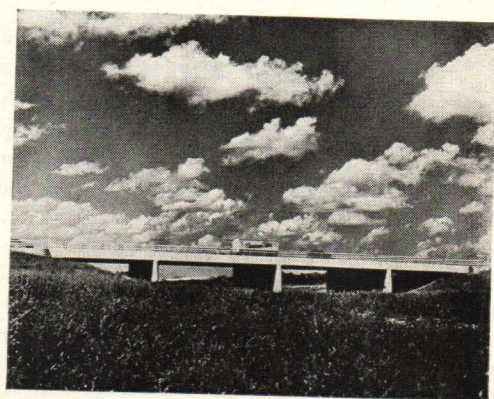
A.I.S.C. CITES TWO BRIDGES OF 1948 FOR BEAUTY

Prizes awarded to two bridges judged the most beautiful among 51 steel spans opened to traffic in 1948 have been announced by American Institute of Steel Construction, sponsor of the annual award program since 1928. Three other bridges received honorable mention from the jury of architects and engineers.

Winner of the prize, a stainless steel plaque, for Class I (fixed bridges with spans 400 feet or longer) was *Watauga River Bridge* in Carter County, Tennessee, designed by TVA for the state highway program. Winner of the prize, a similar plaque, for Class III (fixed bridges with spans under 400 feet, costing less than \$500,000) was the *Airport*

Apron Overpass over Van Wyck Expressway at New York International Airport, designed by Clarke, Rapuano & Holleran for City of New York. No awards were made in Classes II and IV (fixed bridges with spans under 400 feet, costing more than \$500,000, and movable bridges).

The Jury of Award included Ralph Walker, architect, New York, president of A.I.A.; Ernest J. Kump, architect, San Francisco, California; Cyrus E. Silling, architect, Charleston, West Virginia; Nat A. Owings, architect, Chicago; and Prof. Warren Raeder, head of Department of Civil and Architectural Engineering, University of Colorado.

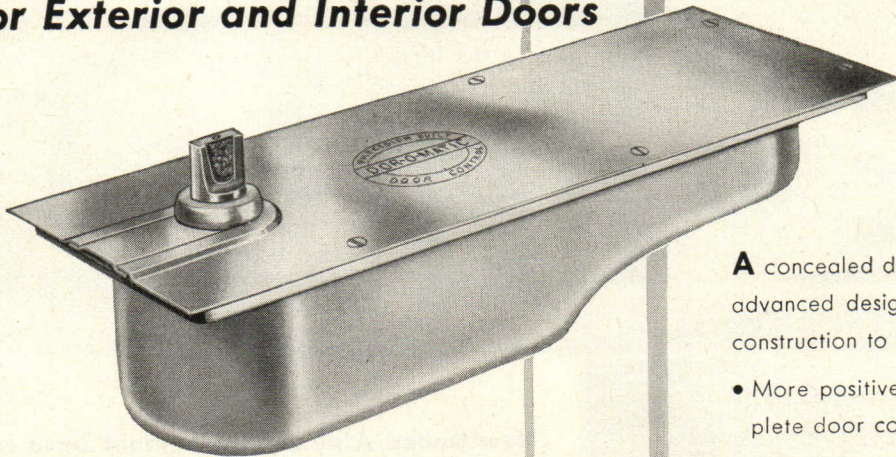


The 159th Street Overpass over Calumet Superhighway, Cook County, Illinois, also winner of honorable mention in Class III, was designed by Cook County Highway Department and built by Bethlehem Steel Co.

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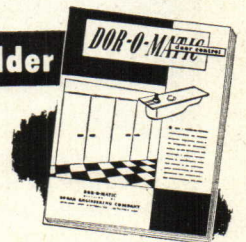
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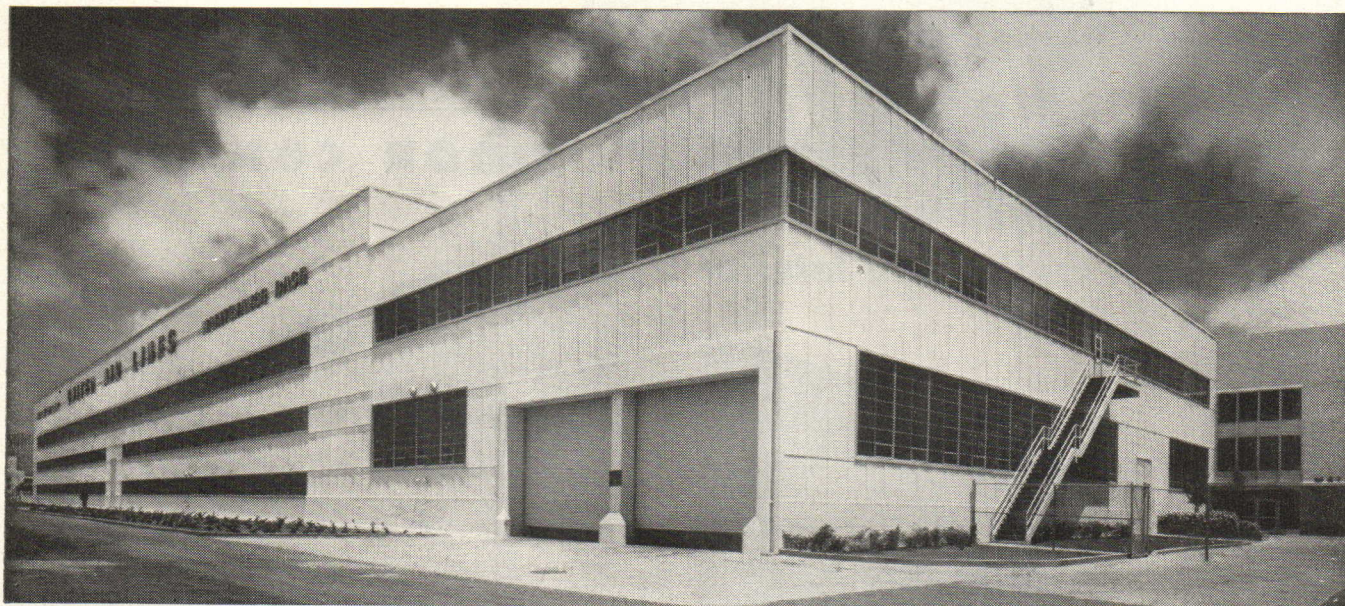
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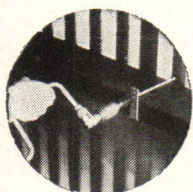
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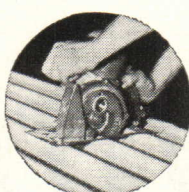
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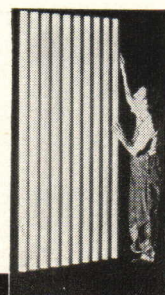
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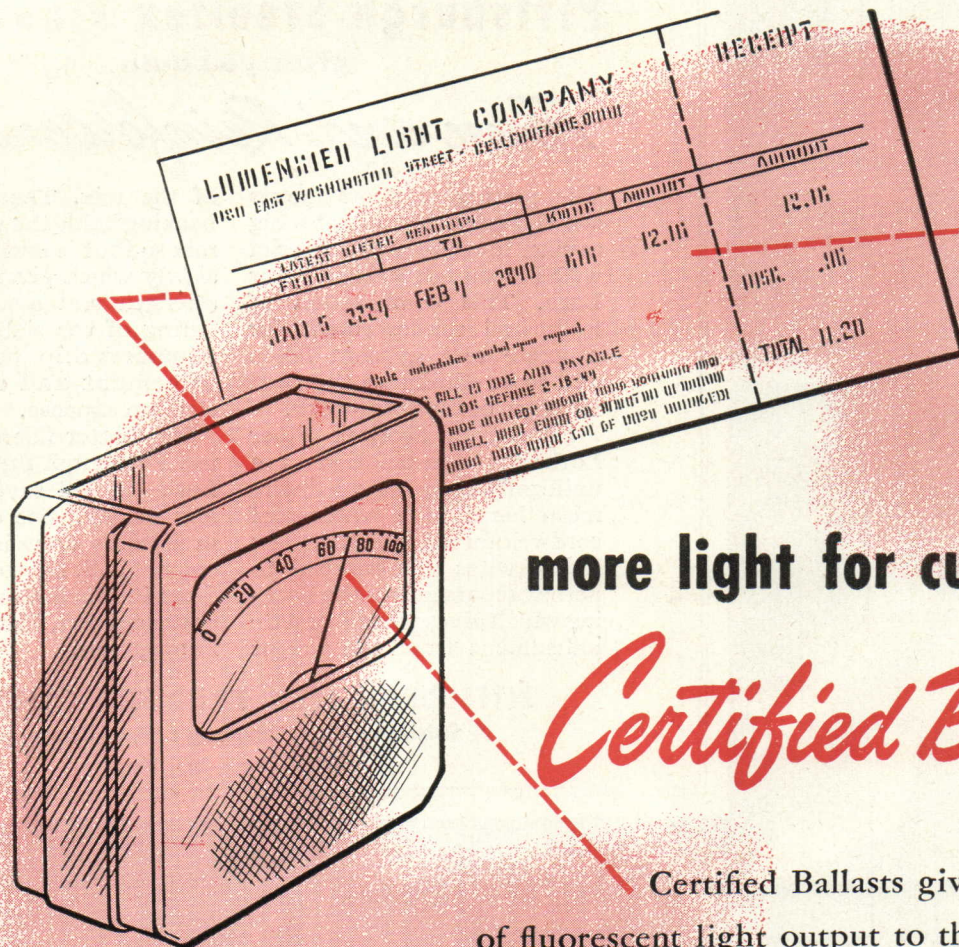
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Certified Ballasts

Certified Ballasts give a high ratio
of fluorescent light output to the input of power
—deliver more light for the electricity used.

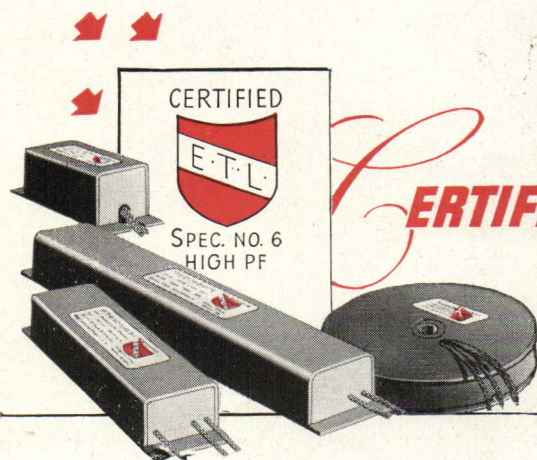
When you specify Certified Ballasts, your customers
are assured of:

Rated light output

Full lamp life

Dependable performance

Because Certified Ballasts are made to exacting specifications,
then tested and checked by Electrical Testing Laboratories, Inc.,
an impartial authority, they assure customer
satisfaction—and proved economy.



CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting

2116 KEITH BLDG., CLEVELAND 15, OHIO



Pittsburgh Steeltex Floor Lath

gives you both

Form and Reinforcement

The placing of floors moves swiftly, smoothly and at a big saving in time and material with Pittsburgh Steeltex Floor Lath. This combination of form and reinforcement for concrete and gypsum floors and roofs eliminates the need for slow, costly form-work.

Pittsburgh Steeltex Floor Lath is a combination of a uniformly spaced welded wire mesh laced to a waterproof cord-reinforced backing. The lacing wires are crimped to permit separation of the backing which gives you automatic imbedment from the weight

of the mix. The waterproof backing holds the water in the mix so that it must evaporate slowly which gives maximum strength and assures proper curing of the slab. This also minimizes drip, prevents loss of cement and eliminates cleanup expense.

For better floors and roofs use Pittsburgh Steeltex Floor Lath—it will save you time and money. See our catalog in Sweet's or write for your copy of D.S. 133 to Pittsburgh Steel Products Company, Department PA, Pittsburgh 30, Pennsylvania.

PITTSBURGH STEEL PRODUCTS COMPANY

A Subsidiary of Pittsburgh Steel Company

Pittsburgh 30, Pa.

Announcing — the Newest in Siding

WELDTEX SIDING



ARCHITECTS: Now you can give your homes smart, modern beauty at reduced cost.

You've already seen the fine effects that have been obtained with Weldtex* when used in large panels.

Now, that same beauty, that same durability, that same uniqueness, is available in Weldtex Siding.

In Weldtex Siding, the warmth and beauty of natural wood have been augmented by grooving the surface with deep, irregularly-cut striations. These cut-in grooves lend a third-dimensional quality to the surface, breaking up the flat plane and creating pleasant highlights and shadows.

MANY PRACTICAL ADVANTAGES

But Weldtex Siding has important practical advantages, too. There is no objectionable grain-raising or checking. Expansion and contraction are minimized because the striations relieve surface stress.

Joint lines are invisible. Face nails are concealed by the deep-cut grooving.

And, the wide 4-foot panels go up fast. Only 20 panels cover a square. Savings as much as \$60 per small house have been reported (*based on a reduction of 70% in labor costs*).

Best of all, the finished job is weather-tight, with a minimum of seams. Weldtex Siding takes paint and other exterior finishes perfectly, making a beautiful job which adds to the value of any house.

FHA APPROVED

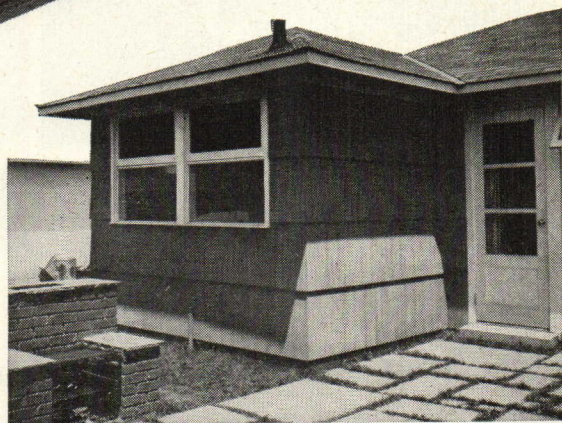
Weldtex Siding is approved by FHA on Federal Housing jobs.

Write for more information and folder showing typical installation details.

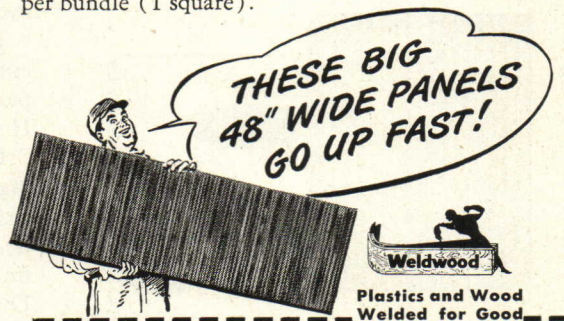
*U.S. Pat. Nos. 2286068, 2363927, 2363492. Trademark reg.

UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.



WELDTEX SIDING can be used over any type sheathing. Fits perfectly on 16" studding. Photo above shows the pleasing effect obtained by using a wood lath to create a deep shadow line. Weldtex Siding is made of 3-ply Weldtex plywood, Exterior Grade, $\frac{3}{8}$ " thick, pre-cut in panels 48" wide, 15 $\frac{7}{8}$ " deep. Packed 20 panels per bundle (1 square).



UNITED STATES PLYWOOD CORPORATION

55 West 44th St., New York 18, N. Y.

Please send me more information on Weldtex Siding plus installation details.

Name

Company

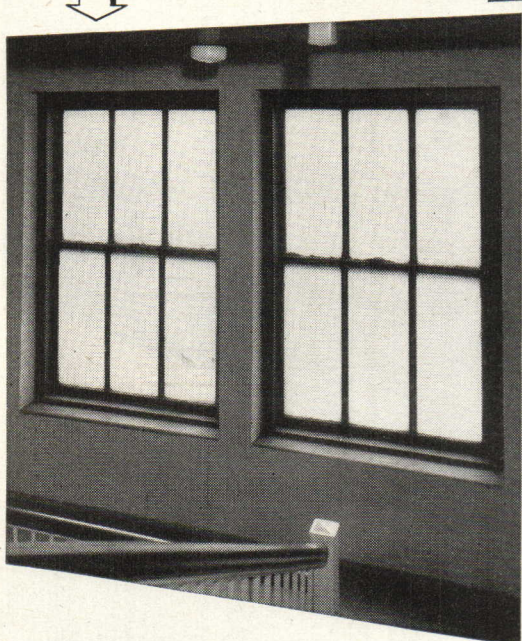
Address

City State

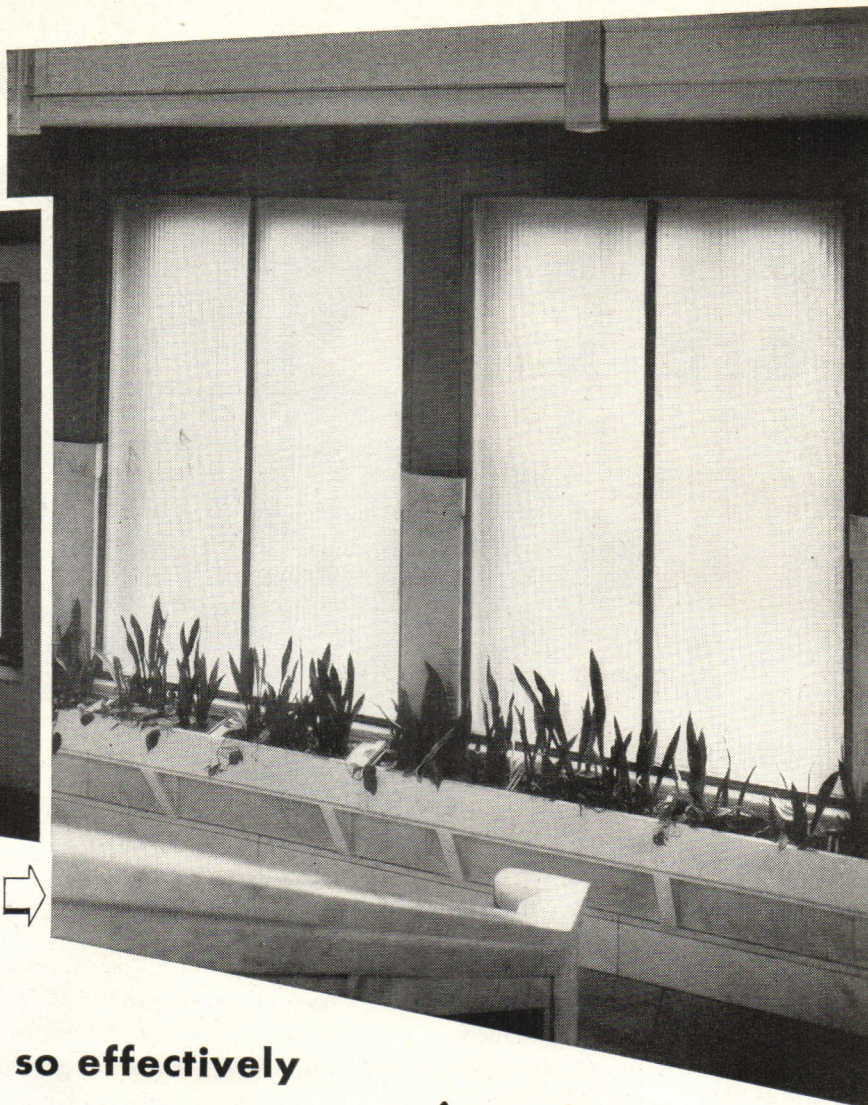
Weldwood
Plastics and Wood
Welded for Good

523

BEFORE: Old-fashioned windows emphasize a dreary atmosphere.

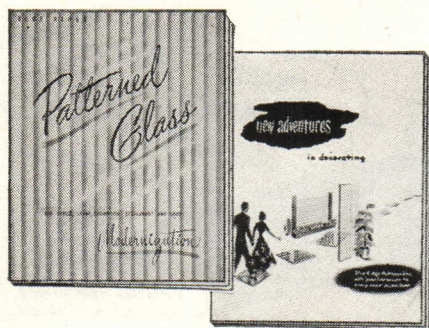


AFTER: Satinol Flutex panels transform windows to a center of beauty, diffuse light to stairwell, highlight distinctive design. Architect: William L. Carroll, Chicago, Illinois.



you can "restyle" so effectively

... with Blue Ridge *patterned glass*



Yours on request
...two "Idea" books

(1) "Patterned Glass for Modernization" is copiously illustrated with commercial installations. (2) "New Adventures in Decorating" shows ways to use *Patterned Glass* in residences. Write: Blue Ridge Sales Division, Libbey-Owens-Ford Glass Company, 82119 Nicholas Building, Toledo 3, O.

Whatever your modernization problems, Blue Ridge *Patterned Glass* suggests countless ways to create an entirely new "personality" for every type of building.

Because it transmits light yet assures privacy, *Patterned Glass* enables you to plan existing space to best advantage . . . with panels, partitions, entire walls or windows that hide undesirable views. However used, this versatile glass builds in long-lasting beauty.

Over 20 Blue Ridge patterns give you wide choice in interpreting your ideas both for new construction and remodeling. Most patterns are available in sizes up to 54 x 136 inches and may be *Securitized* (heat tempered) for greater strength. All may be *Satinol**-finished for greater privacy. For details, consult your L·O·F Glass Distributor or see Sweet's File, Section 82119.

*®



BLUE RIDGE

Patterned GLASS

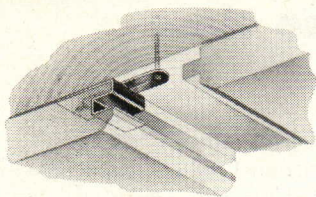


better looking applications
...perfectly aligned tile
and plank...with the
Nu-Wood clip system

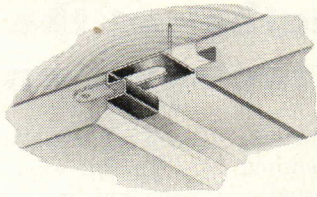
No other insulating interior finish has introduced so many improvements and refinements as Nu-Wood! Fadeproof colors . . . unique textures . . . a "foolproof" tongue and groove joint . . . these are only a few of the features which have made and kept Nu-Wood Kolor-Fast and Sta-Lite Plank and Tile leaders in their field. But there's another *exclusive* feature which assures lastingly true and level wall and ceiling surfaces . . . lastingly tight joints.

Read these advantages and you'll know why Nu-Wood Kolor-Fast and Sta-Lite Plank and Tile—applied by the Clip System—assure satisfied owners who STAY satisfied!

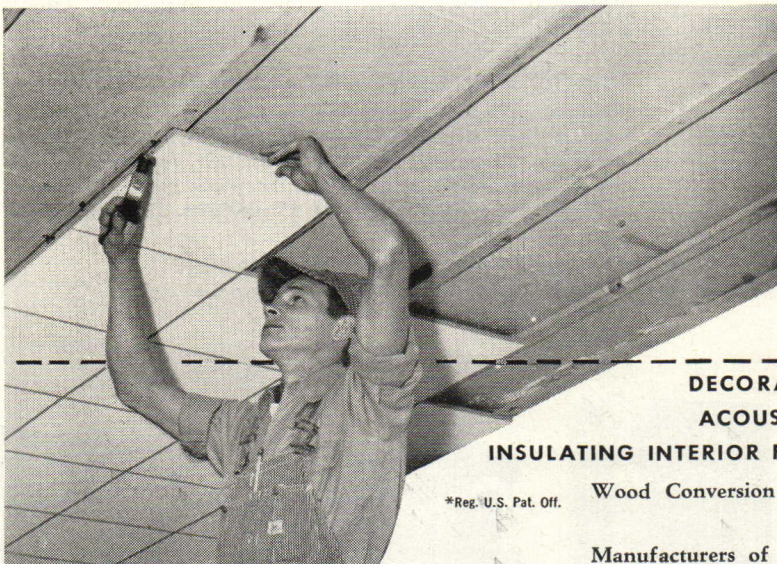
REVERSIBLE CLIP APPLICATION PERMITS CENTER-OF-CEILING STARTING



The reversible feature of the Nu-Wood Clip permits fast, correct application of tile from center of ceiling . . . easier applications, less layout time, assuring uniform ceiling border. Illustration shows clip fitted into groove.



Here is the Nu-Wood Clip fitted over the tongue of Nu-Wood Tile. Note that joint lines can be made perfectly straight because the Nu-Wood Clip permits some adjustment in the position of the tile.



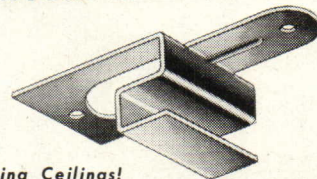
DECORATING
ACOUSTICAL
INSULATING INTERIOR FINISH

*Reg. U.S. Pat. Off.

Wood Conversion Company, Dept. 117-119, First National Bank Bldg.,
St. Paul 1, Minnesota

Manufacturers of Balsam-Wool* Insulation. Sold by lumber dealers only.

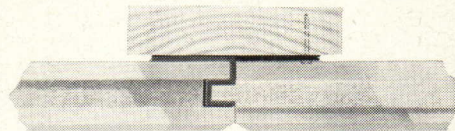
**IT TOOK NU-WOOD TO PIONEER
THIS HISTORY-MAKING CLIP**



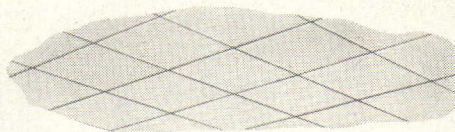
Self-Aligning Ceilings!

With the Nu-Wood

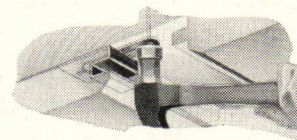
Clip, irregularities of the nailing base do not affect levelness and appearance of job. The clip provides a "floating" ceiling by permitting normal movement of the tile or base. The tongue and groove joint and the Nu-Wood Clip permit tile to adjust to humidity and temperature, reducing possibility of sagging tile.



Complete "Wrap-around" Support! The Nu-Wood Clip completely "wraps" both the tongue and groove with metal—supporting both edges without penetrating either edge.



Tighter Joints—Surfaces Stay Cleaner! Nu-Wood tongue-and-grooved Plank and Tile, applied by the Clip System, assure *tighter joints*. This reduces air movement through the joint, minimizing collection of surface dirt. Thus, a Nu-Wood interior stays cleaner longer—keeps its fresh brightness. Damaged Tile are easily replaced.



Securely Fastened—Nailed in Place! See how this secure, invisible nailing holds the plank or tile in perfect alignment! The Nu-Wood Clip is sturdily constructed, easy to handle—there are no sharp points or prongs. The clip is rust-proof.

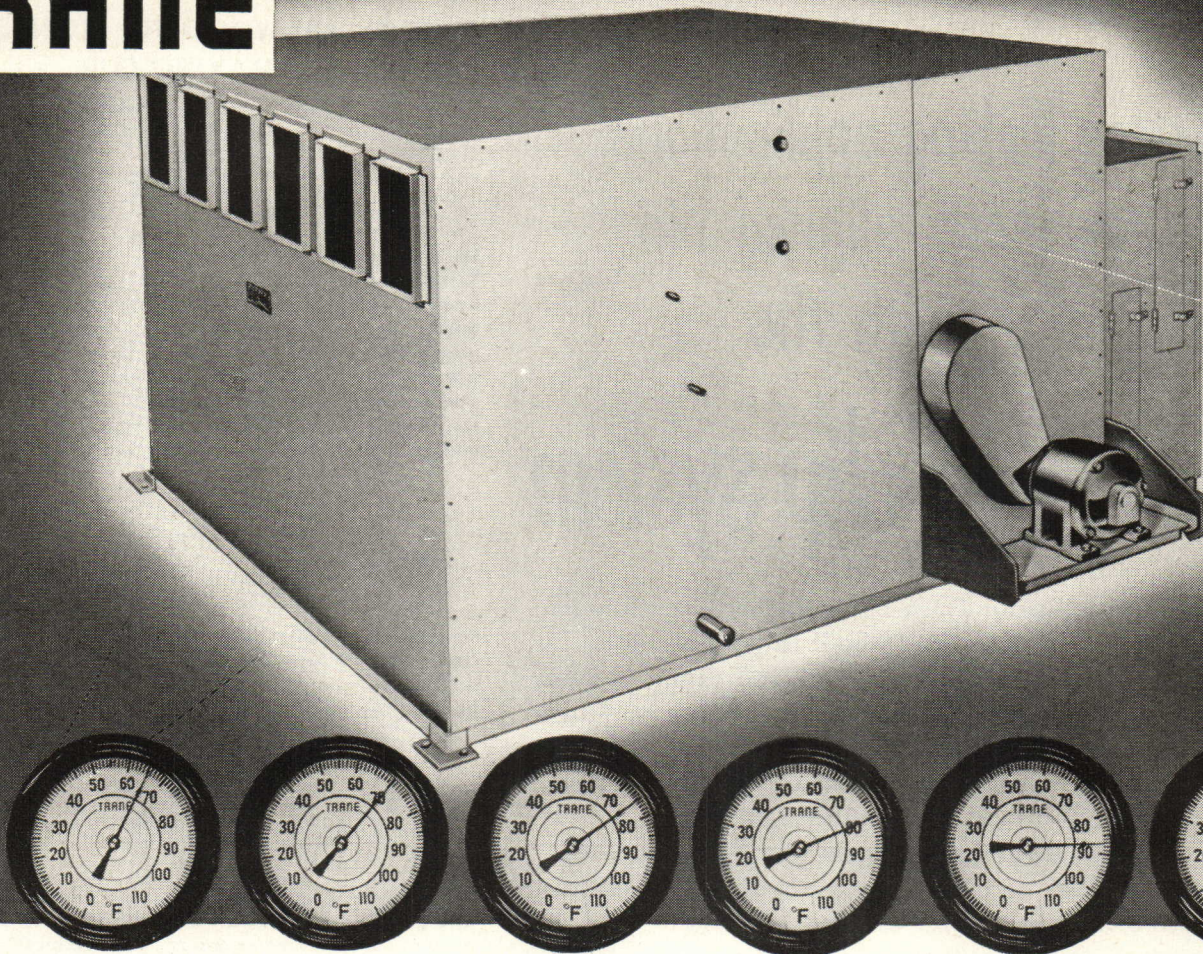
Proved by Thousands of Applications! The Nu-Wood Clip pioneered a new idea in tile and plank application—fast, dependable, sturdy and trouble-free. In thousands of jobs, large and small, Nu-Wood Tile and Plank, applied by the Clip System, have provided proved satisfaction for more than 10 years!

Sta-Lite* Kolor-Fast

High Light Reflection High Sound Absorption

Nu-Wood*

TRANE



Six kinds of weather at the same time —from the same unit!

On installations where sun, wind or other factors combine to create a variety of different air conditioning demands in a building simultaneously, zoning is usually desirable.

Large work can frequently be handled to best advantage with a separate Climate Changer for each zone. For applications of medium or comparatively small size, however, Trane Multizone Climate Changers have important advantages.

With this new unit any number of zones, two through six, are under individual zone temperature control. A 25-degree variation between warm and cool is secured when needed.

The unit has thermostatically controlled dampers which determine the amount of warm air or cool air to be delivered from each outlet. Any mixture may be used,

and reheating is accomplished automatically.

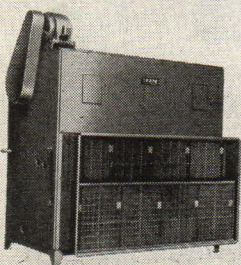
In this way, one Multizone Climate Changer—with one heating coil, one cooling coil, and one motor—produces results which might otherwise require as many as six individual air conditioning units.

Ask the Trane sales office in your area to show you how Climate Changers are being used to meet heating, ventilating and air conditioning needs, for comfort or process work, domestic, commercial, industrial. There is a size, style, and type that will meet your needs.

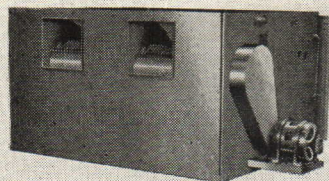
THE TRANE COMPANY...LA CROSSE, WIS.

Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convactor-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties ... IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

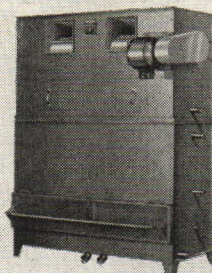
An endless variety of sizes and styles of Climate Changers, vertical (1) and horizontal (2); along with Evaporative Condensers (3); Compressor Units (4); and Turbo-vacuum Compressors (5); are typical of the broad Trane line.



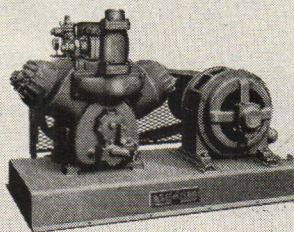
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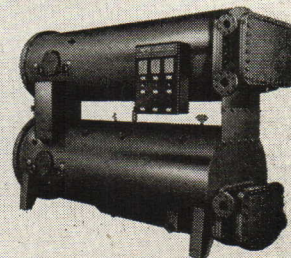
2



3



4



5

LOOK FOR THE DRAWING PENCIL WITH
THE GREEN CRACKLED FINISH

TRY VENUS

*Send for 2 free samples.
Put Venus to the test
on your own drawing
board. Send us a post
card or a note for the
Venus Drawing Pencil
Technical Test Kit.
Specify degrees wanted.
Address Dept. PA 448.*

IT'S
Accurate

...IN ALL 17 DEGREES

IT'S
Strong

...THE LEAD IS PRESSURE-PROOFED*

IT'S
Smooth

...THE LEAD IS COLLOIDAL* PROCESSED

*Exclusive Venus patent

IT'S

VENUS

...THE WORLD'S LARGEST SELLING

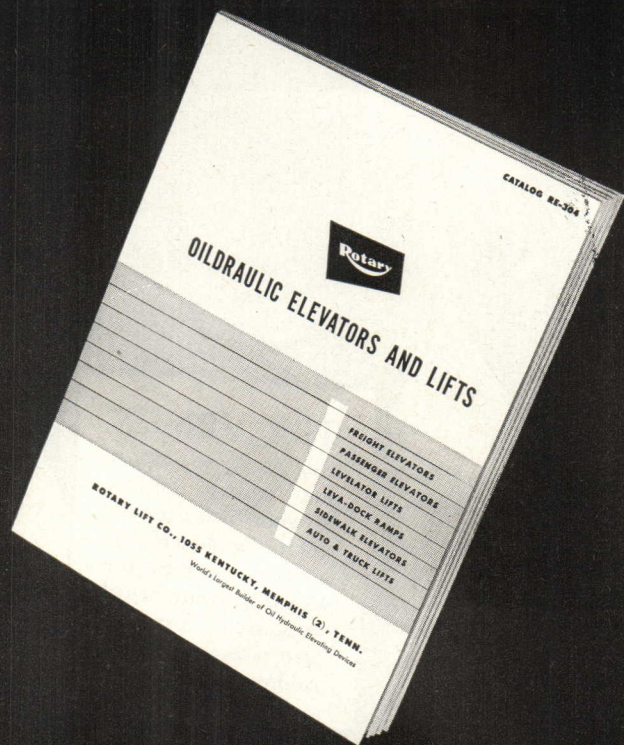
DRAWING PENCILS



AMERICAN LEAD PENCIL COMPANY, HOBOKEN, NEW JERSEY... *makers of famous Venus Pens*

New Data File

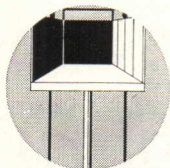
**On Passenger and
Freight Elevators
for 2, 3 and 4 stories**



**Why OILDRAULIC ELEVATORS are so
practical and economical**



No costly
unsightly penthouse



Lighter
shaftway structure



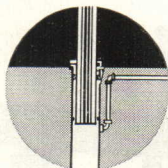
No special
machine room



Smooth starts
and stops



Accurate
landing stops



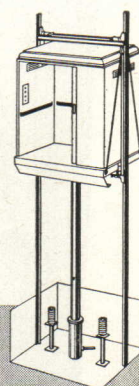
Low
maintenance cost

■ This new data file will give you all the facts on modern oil hydraulic elevators. It shows how you can simplify building design, save space and cut costs by using "the elevator that's pushed up."

For passenger and freight service in buildings of 2, 3 or 4 stories, there's no elevator more practical or economical than a Rotary Oildraulic Elevator. This dependable equipment is engineered and built by Rotary Lift Co., oldest and largest maker of oil hydraulic elevators.

For new A.I.A. Data File on freight and passenger elevators, just mail the coupon below to ROTARY LIFT CO., 1023 Kentucky, Memphis (2), Tenn.

**The elevator that's pushed up
—not pulled up**



Mail coupon for data file

ROTARY LIFT CO.
1023 Kentucky, Memphis 2, Tenn.
Send your new data file on Oildraulic
Elevators to:

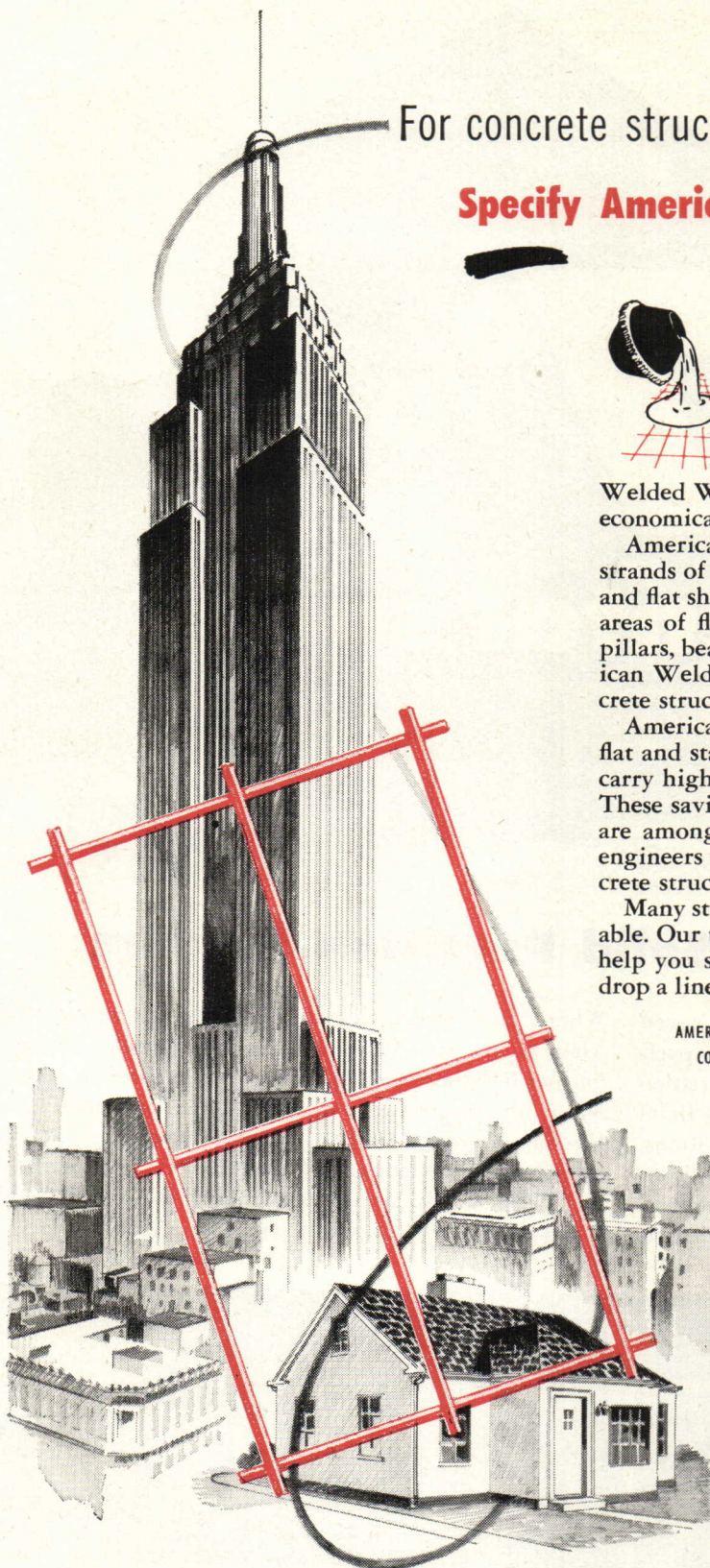
Name.....

Company.....

Address.....

City & State.....

Rotary®
Oildraulic Elevators



For concrete structures large and small

Specify American Welded Wire Fabric



From the world's largest building to small homes—in schools and hospitals, in churches, stores, highways, bridges and viaducts—many of the countless uses of concrete construction are made possible by welded wire fabric reinforcement. And in an impressive number of them you will find American Welded Wire Fabric. It has proved to be the most efficient and economical reinforcement for all sorts of concrete construction.

American Welded Wire Fabric, with its many closely spaced strands of cold-drawn high yield point steel, comes in long rolls and flat sheets. Both provide continuous reinforcement for large areas of floors, walls and roofs. They can be fitted to girders, pillars, beams and other irregular structural shapes. With American Welded Wire Fabric you can reinforce all parts of all concrete structures.

American Welded Wire Fabric can be placed quickly, lies flat and stays in place during pouring. And, since thinner slabs carry higher allowable stresses, you need less steel, less concrete. These savings in construction time, in labor and material costs, are among the important reasons why so many architects and engineers specify U·S·S American Welded Wire Fabric for concrete structures of all sizes.

Many standard designs and sizes of fabric are now readily available. Our technical staff will be glad to supply complete data, to help you select the fabric best fitted to your requirements. Just drop a line to the nearest office on our list, there is no obligation.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS

TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM

SOUTHERN DISTRIBUTORS

UNITED STATES STEEL EXPORT COMPANY, NEW YORK



This sketch shows where American Welded Wire Fabric is used in modern concrete buildings. It reinforces walls, floors and roofs, can be draped over beams and girders and wrapped around pillars. Many uses of concrete in irregular structural shapes are made practical by American Welded Wire Fabric reinforcement.

Every type of concrete construction needs



AMERICAN WELDED WIRE FABRIC
reinforcement

UNITED STATES STEEL

THE FOREST HILLS PARK APARTMENTS
13995 Superior Rd., East Cleveland, Ohio.

Architects, Weinberg, Laurie & Teare, Cleveland . . . Gen'l Contr., The Shaker Masonry & Concrete Co., Cleveland . . . Plastering Contr., Jos. Marino, Cleveland . . . Lathing Contr., Chas. Molino, Cleveland.

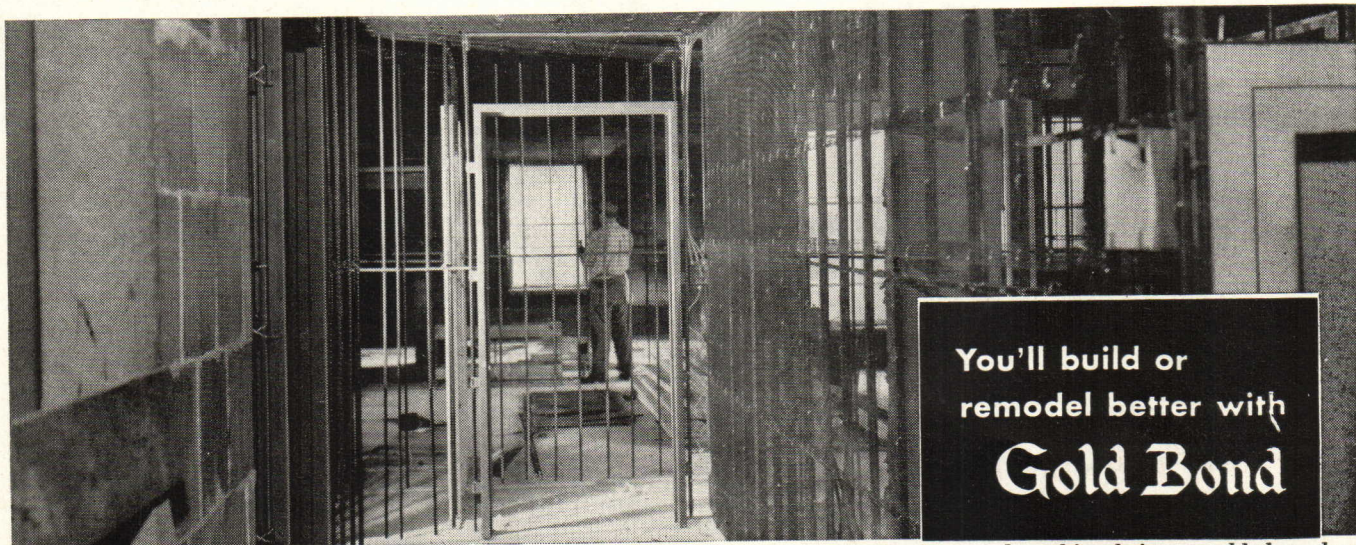


with Gold Bond Solid Partition System

ARCHITECTS Weinberg, Laurie and Teare saved about 4" per wall in these fine new Cleveland apartments by using the Gold Bond 2 inch Solid Partition System. This modern system combines solid Gold Bond Plaster and Metal Lath to give super strength partitions, about 2 inches thick, that are *fireproof* and effectively subdue noise transmission. But the big plus is approximately 7% increase in the income-producing living space.

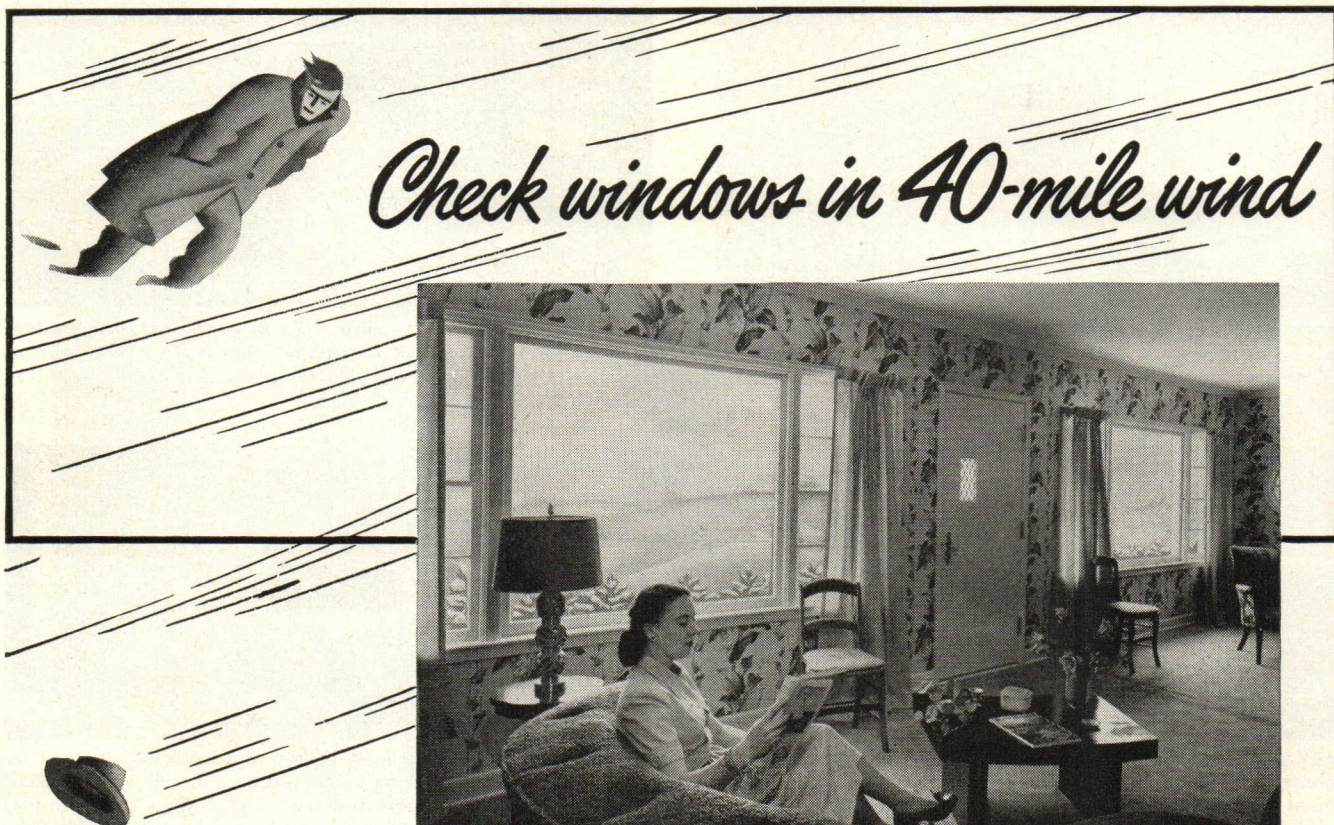
What's more, the architect is relieved of one big worry when he specifies Gold Bond materials right down the line because the responsibility for performance is centered on one dependable manufacturer—the National Gypsum Company. For your next job, check up on the Gold Bond Solid Partition System. Fully described in Sweet's, or drop us a card for a 15 minute demonstration—no obligation!

NATIONAL GYPSUM COMPANY, BUFFALO 2, N. Y.



You'll build or
remodel better with
Gold Bond

Over 150 Gold Bond Products, including gypsum lath, plaster, lime, wallboards, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.



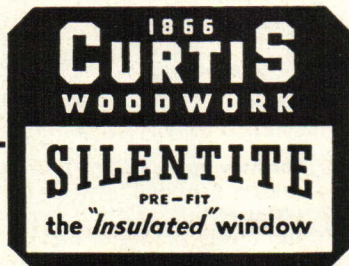
and you'll choose CURTIS Silentite!

In a 40-mile wind you'd soon know the difference between Curtis Silentite and ordinary windows. For under such conditions, Silentite allows 20% less air infiltration than the famous original Silentite—America's first "insulated" window.

There are scientific reasons for Silentite's superior weathertightness. "Floating" weather-strips press snugly against the side of the sash, yet allow easy movement. Gone is the conventional check rail—in its place a new type rail with specially designed weather-strip members. Bronze spring leaf weather-stripping at the head and sill complete this superior window design. And Silentite is a *wood* window for maximum insulation value and reduced heating costs.

Silentite Windows are easy to operate—have no weights, cords or pulleys. They have the streamlined beauty that comes from slender mullions and wide glass areas. Toxic and water-repellent treated, Silentite windows assure lasting value in any size or type of home.

When in New York, visit the Curtis Woodwork display at the Architect Samples Corporation, 101 Park Avenue.



Send for the
Silentite Window Book

Curtis Companies Service Bureau
PA-11S Curtis Building, Clinton, Iowa

Please send me book on Silentite Windows, including casements.

Name.....

Address.....

City.....State.....

I am

☐ Architect

☐ Contractor

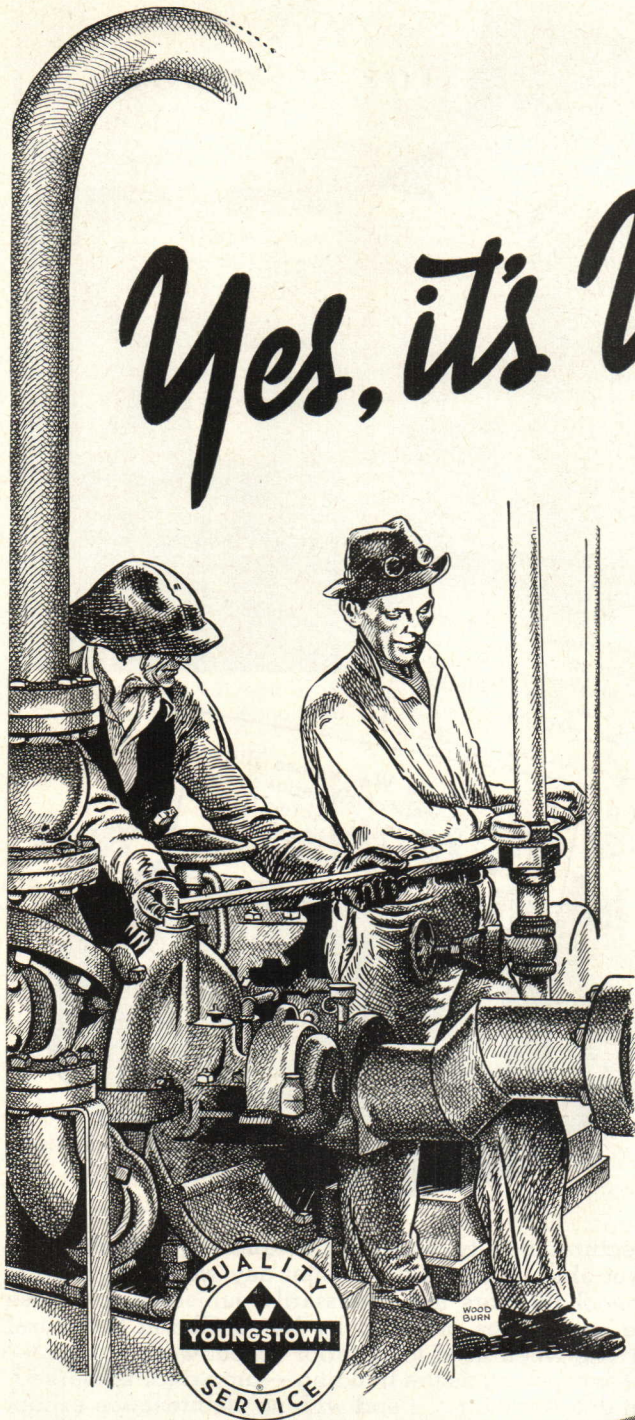
☐ Prospective Home
Builder

☐ Student

(Please check above)

Yes, it's Youngstown!

*Dependable Steel Pipe . . .
Adequate Tomorrow, as Today*



INSTALL Youngstown today, in sizes adequate for the increased loads it will have to carry tomorrow, and both you and your customers can forget pipe indefinitely.

The dependability of Youngstown Steel Pipe rests on experience--on nearly 50 years of producing highest quality steel and fabricating it into highest quality pipe.

Youngstown Steel Pipe is available everywhere, sold by leading pipe distributors who are prepared to recommend and furnish it in proper sizes for any job, adequate for both tomorrow's needs and today's.

Youngstown STEEL PIPE

THE YOUNGSTOWN SHEET AND TUBE COMPANY

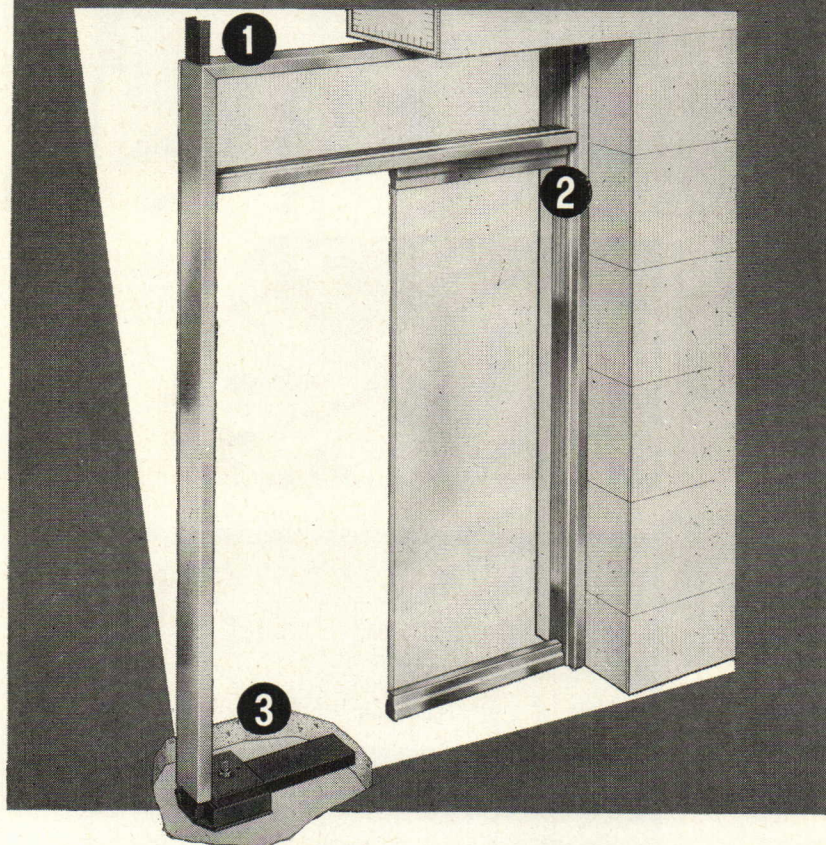
Manufacturers of Carbon, Alloy and Yaloy Steel

General Offices — Youngstown 1, Ohio

Export Office - 500 Fifth Avenue, New York

PIPE AND TUBULAR PRODUCTS - CONDUIT - BARS - RODS - COLD FINISHED CARBON AND ALLOY BARS - SHEETS - PLATES - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RAILROAD TRACK SPIKES.

NOW...a doorway that has everything!



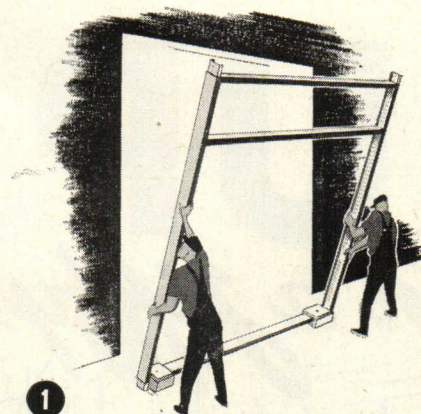
WITH the new Pittsburgh Doorway you don't even need a screw driver; there's no drilling of holes in the frame. And there's nothing to assemble. You just unpack the frame, bolt it into the building opening, and hang the massive Herculite Tempered Plate Glass Doors—for which the frame is especially engineered. Everything is in one "package"—the famous Pittco Checking Floor Hinge, moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts, *everything!* No time-consuming calculations. No worries about setting and fitting. But this is only a small part of the story. For complete information, why not fill in and return the coupon? There's no obligation.

Pittsburgh
DOORWAYS



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY



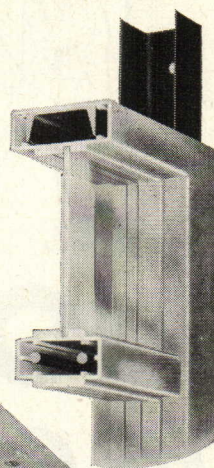
EVERYTHING IN ONE PACKAGE

Pittsburgh Doorways reach the job, ready for bolting into the opening. Twelve standard designs are available which, singly or in combination, will fit any job.

2

STURDY, HANDSOME FRAME

Fabricated of extra-heavy extruded aluminum, highly polished and anodized. It's reinforced with steel channel and tie rods, as partially shown here.



3

PITTCO CHECKING FLOOR HINGE

Only 6 1/4" x 6 1/4", it is an engineering marvel. Has positive door-speed control, separate checking control, built-in hold-open feature. It's sealed in oil for life.

Pittsburgh Plate Glass Company
2356-9 Grant Building, Pittsburgh 19, Pa.

Without obligation on my part, please send me a FREE copy of your booklet on Pittsburgh Doorways.

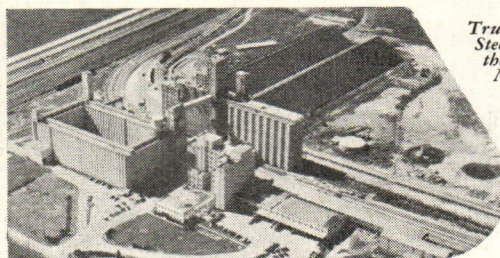
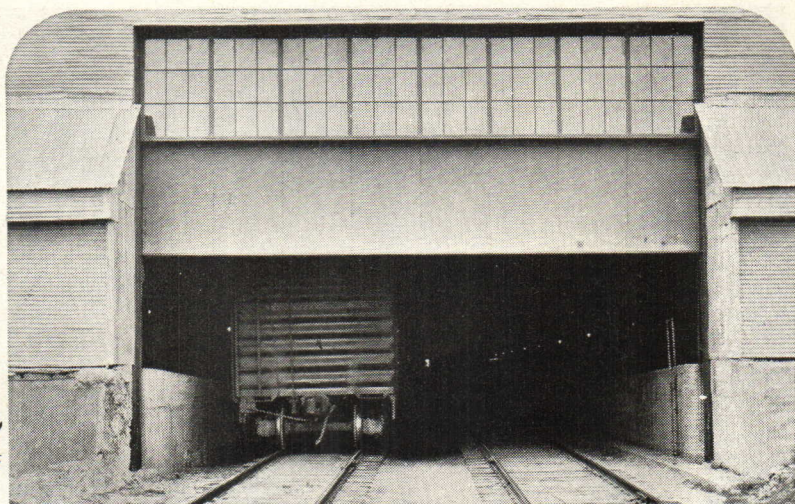
Name.....

Address.....

City..... State.....

UP

in a jiffy!...



Truscon Vertical Lift Steel Doors installed in the Tex-O-Kan Flour Mills, Fort Worth, Texas. Engineers and Contractors: Milling Engineers, Inc., Kansas City, Mo. Truscon Pivoted Steel Windows also used in this mammoth structure.

DOWN

in a jiffy!

because it's a

Truscon Vertical Lift Door

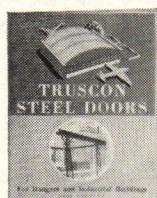
Whether operated by hand or by electricity, these Truscon Steel Doors move quickly and easily. In warehouses, freight terminals, piers, shipping rooms . . . wherever large, rugged, fast-moving doors are required . . . Truscon Vertical Lift Doors speed traffic, save labor, conserve heat and encourage efficiency.

The Two-Section Vertical Lift Door consists of two equal leaves, mechanically operated, which slide vertically in guideways attached to the jambs of the opening. The bottom leaf travels at twice the speed of the top leaf, and when fully open, both leaves rest one in back of the other, in a vertical position directly above and clear of the opening.

Both leaves are balanced in operation

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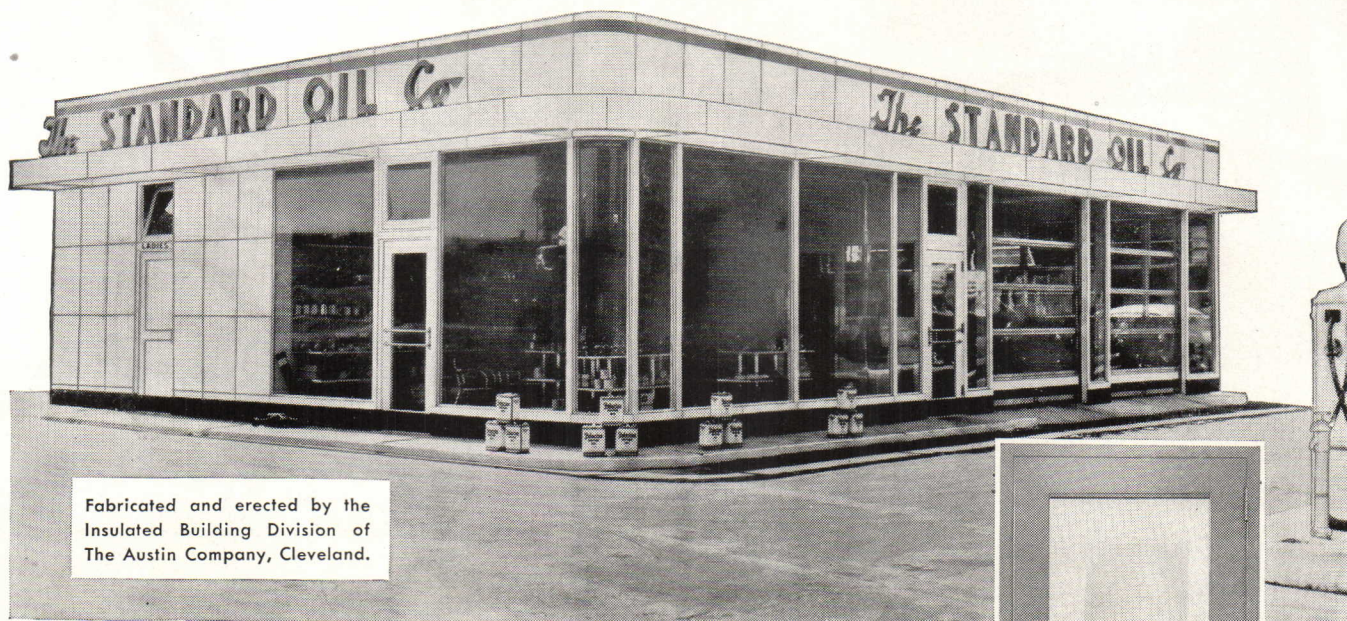


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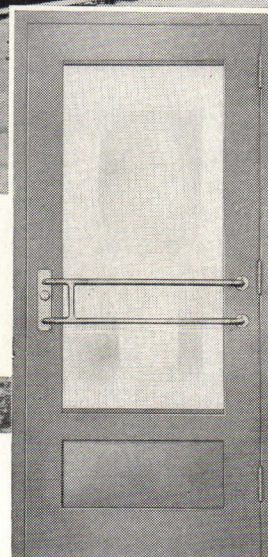
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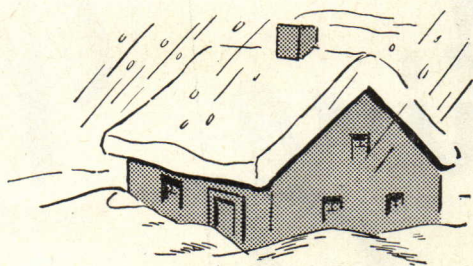
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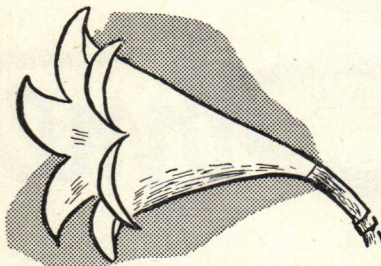


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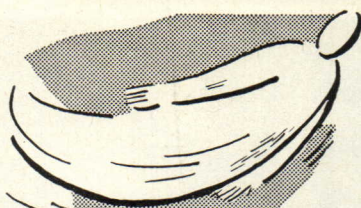
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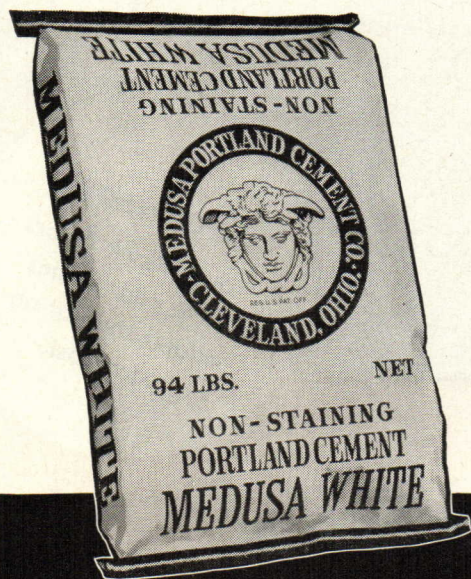


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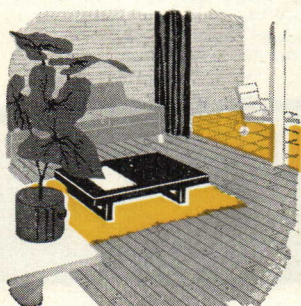
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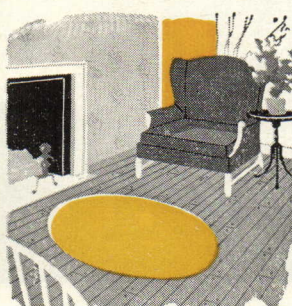
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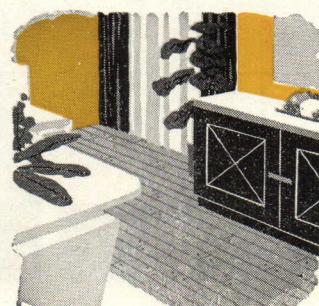
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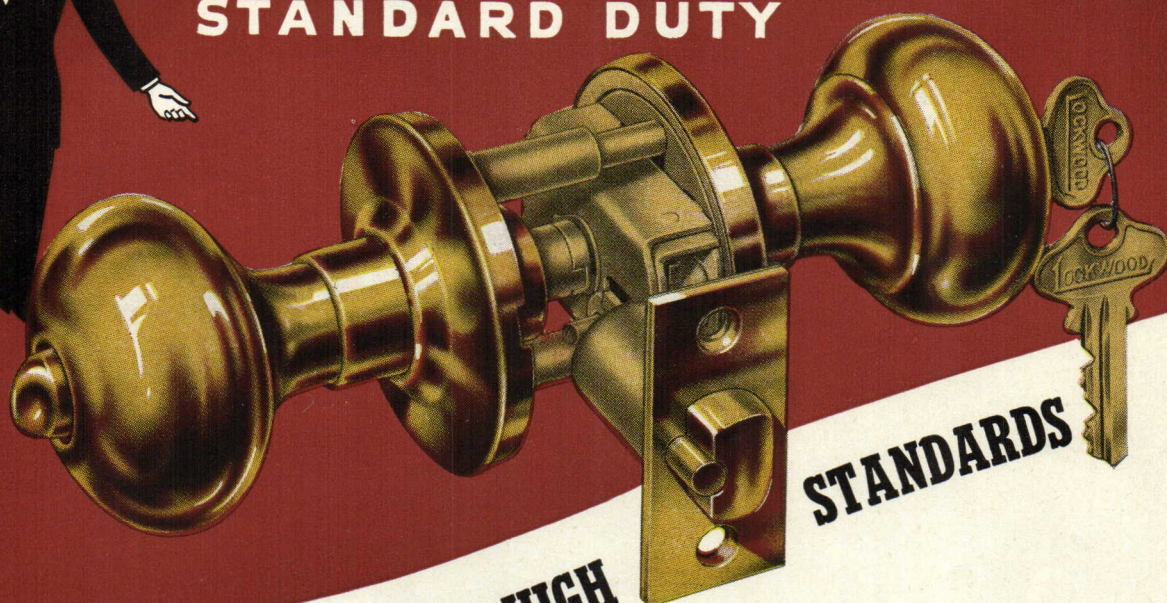
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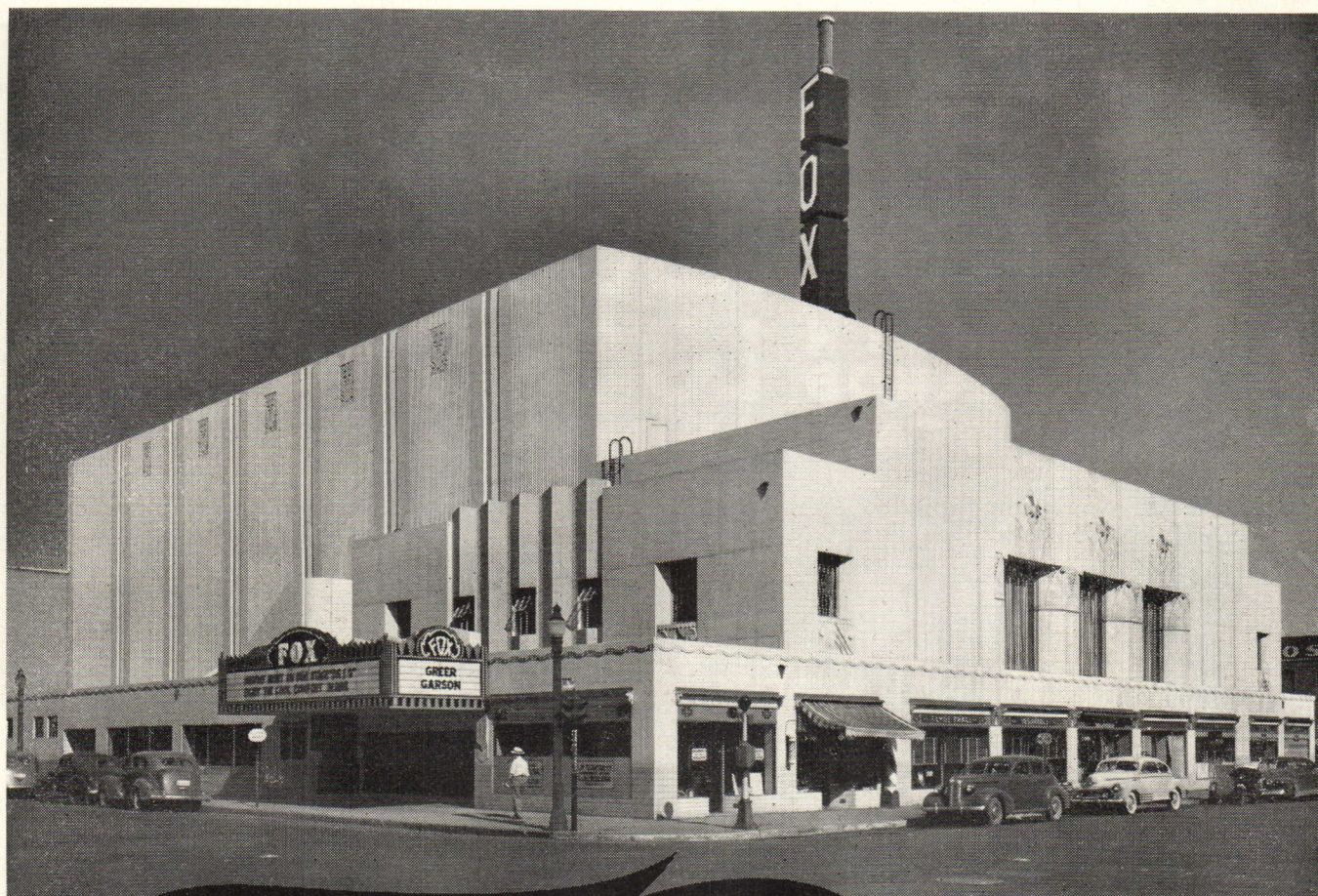
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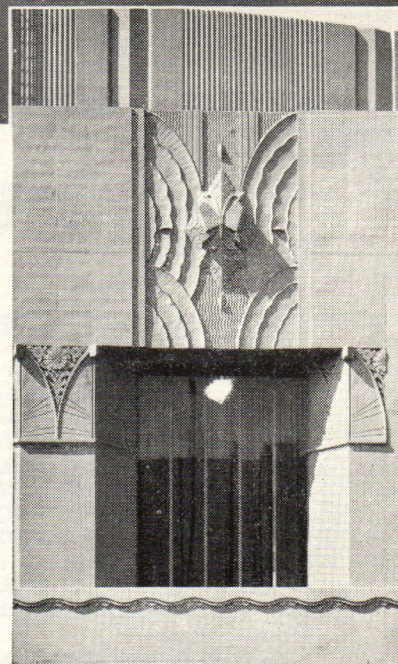
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Illustrations above show a general view of the Fox Theater, Spokane, with (inset) a close-up of large ornamental bas-relief butterfly panel cast integrally with the wall against a plaster mold built into the forms. R. C. Reamer and Frank Wynkoop were the architects. Alloway & George were the contractors.

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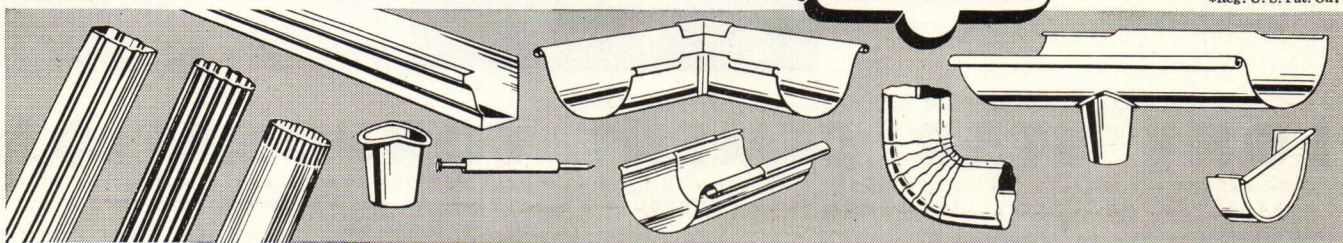
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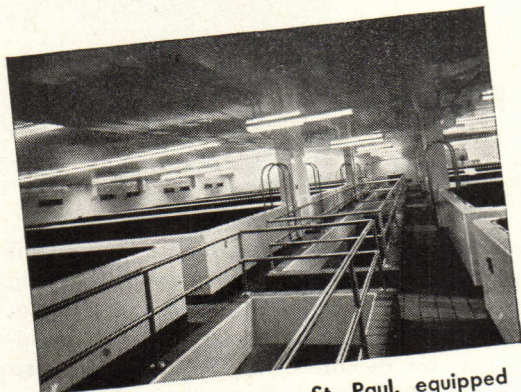


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THE good brewer takes infinite pains in blending and cooking selected materials—then beer's quality and flavor depend on what happens in the fermenting and storage tanks. Twenty years ago, Borsari Tank Corporation of America advanced brewing technique with 'Ebon'-lined tanks of concrete.

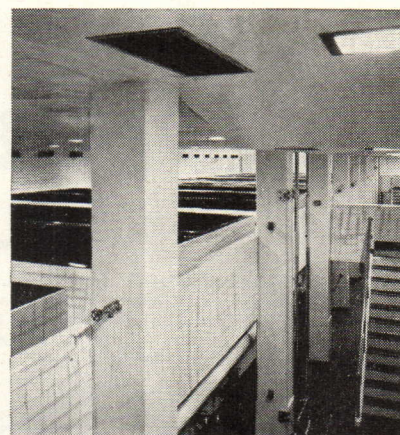
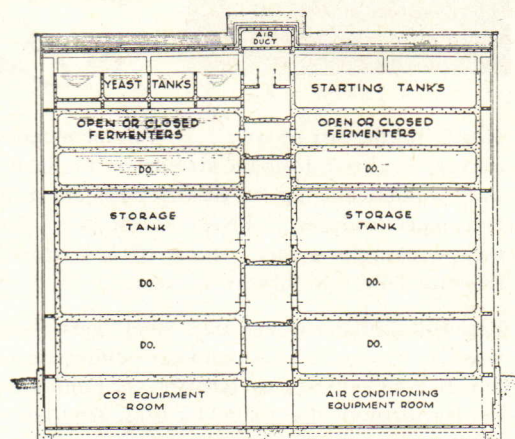
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Right, typical multiple-story Borsari installation. Below, center, fermenting tanks, **DAWSON BREWERY**, New Bedford, Mass., built into existing building. Below right, fermentation tanks, **MILLER'S 'HIGH LIFE' Brewery**, Milwaukee. Introduced in U.S. in the early 30's, Borsari tanks now in use here total half-million barrels' capacity.



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ARCHITECT-CRITICS (left to right): Jackson; Callender; Holmes; Maston. At the time the house shown on pages 44-48 was designed, Jackson & Callender were in partnership; currently they conduct separate practices in New York, N. Y. Huson Jackson: U. of Chicago; Harvard U.: B. Arch.; M. Arch. Work in offices of Charles Eames; Hilyard R. Robinson; Gropius and Breuer; member of Plan-Tech Associates; former partnership with John Hancock Callender: Yale U.; New York U.: B. Arch. Twelve years as architect and Assistant Director of Research, John B. Pierce Foundation; member, Plan-Tech Associates; Army Engineers, assigned to atom bomb project; Consultant, National Housing Agency on Veterans Emergency Housing Program; Technical Director, Rervere Quality House Institute.

J. Lister Holmes: U. of Wash. (engineering); U. of Pa. (architecture). Work in offices in New York, Philadelphia, and Seattle; own practice established 1922. Past President, Washington State Chapter, A.I.A.

Carl Louis Maston: U. of So. Calif. (B. Arch.). Work in various offices, obtaining own license in 1941. Private practice started at end of war after service with the Marine Corps.

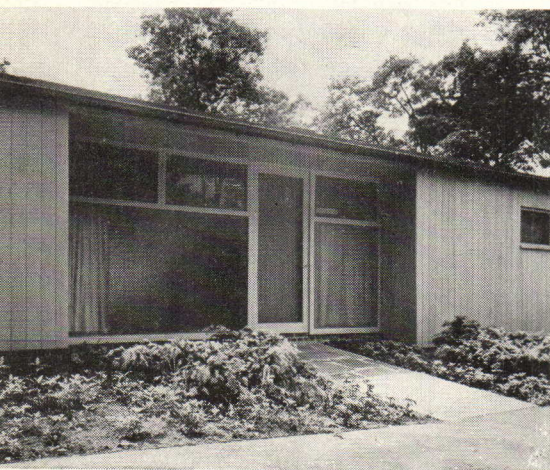
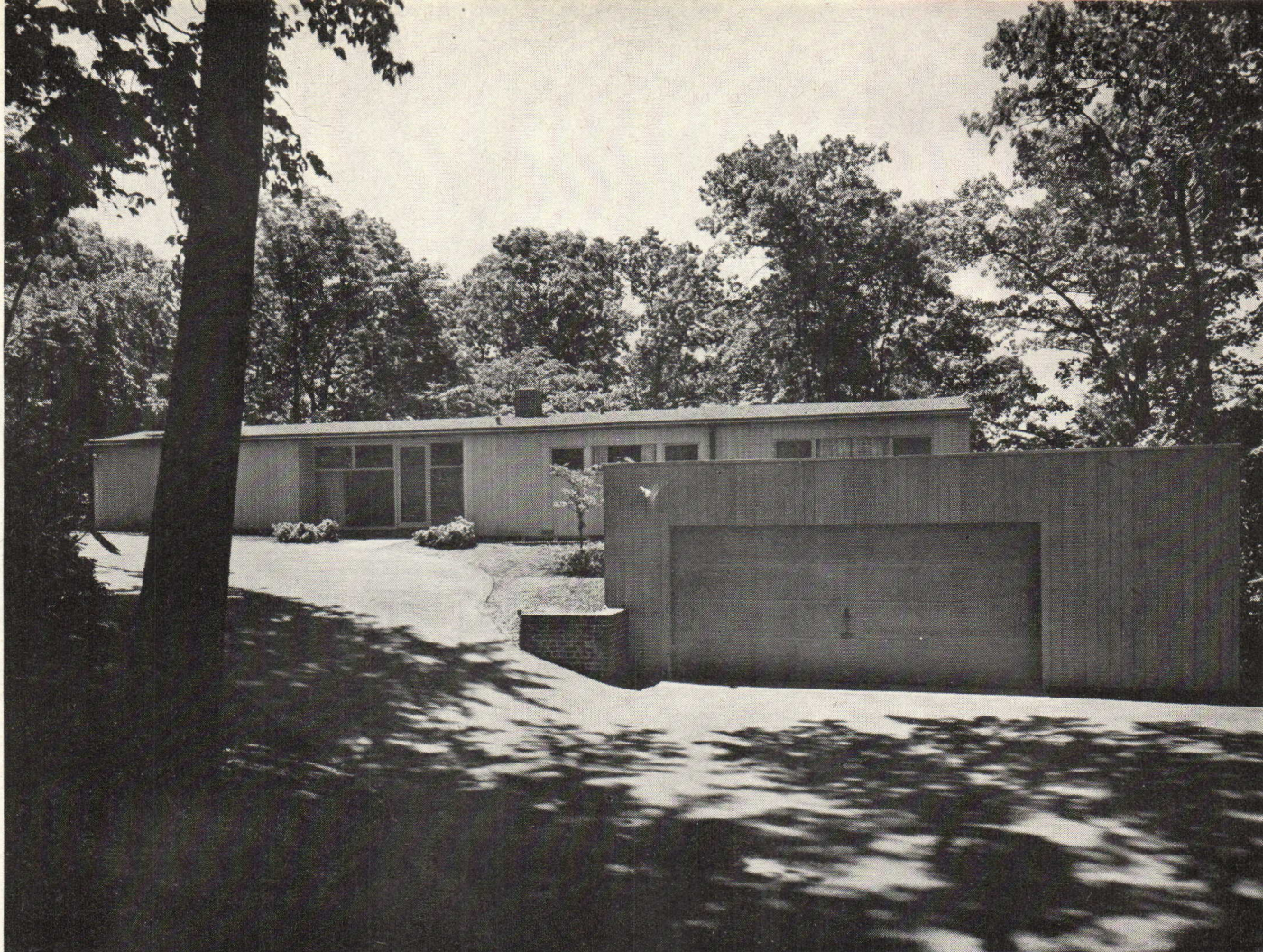
three houses

If there's any architect in the world who doesn't enjoy criticizing the work of others we have yet to meet him. Usually, though, this takes place at informal gatherings or during professional meetings and only those within earshot have the benefit of knowing what's said. To span this gap, to let the architects themselves participate in the criticism, and to let our readers know what the profession itself thinks of the work of its own colleagues; we are this month launching the "round robin critique."

Our first "intramural critics," the four men whose pictures appear above, represent the three firms that designed the houses shown on subsequent pages. To each of these offices, we sent photographs, drawings, and descriptive information on the houses *designed by the other two* for analysis, comment, and questioning. The originating architect then had the opportunity of answering the questions of his fellow critics. From this exchange, the critique was developed.

With each house we present the basic information very much as the architect originally gave it to us. In the paragraphs printed in color we report the major things his colleagues found to question about it and what he had to say in reply. If this type of critique meets with general approval, it is our intention to continue the series indefinitely.

THE EDITORS



Photos, this page: top—general view from entrance driveway; immediately above—front door detail.

Across page: top—wood screen bordering living-room terrace on west side of house.

The architects wish special credit given to the general contractor, Kennerly Construction Co., Inc.

Photo directly above: Richard Garrison
Other photos: Gilbert Ask (except as noted)

House: Syosset, New York

HUSON JACKSON & JOHN HANCOCK CALLENDER, ARCHITECTS

program: House for a business woman, her mother, and their two servants (a couple). Delight in entertaining suggested a dramatic as well as a comfortable surround; flagstone flooring extending out to terrace specifically requested, for dancing.

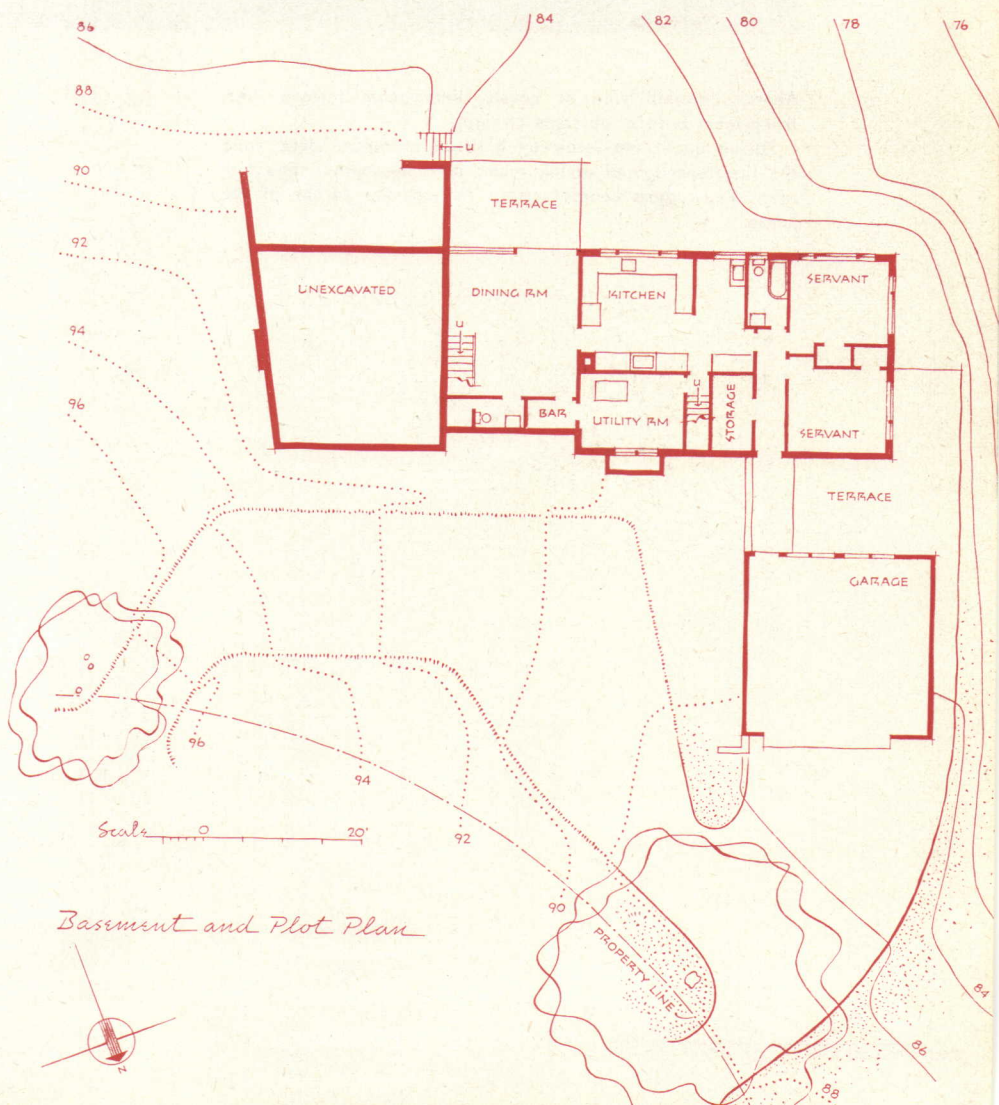
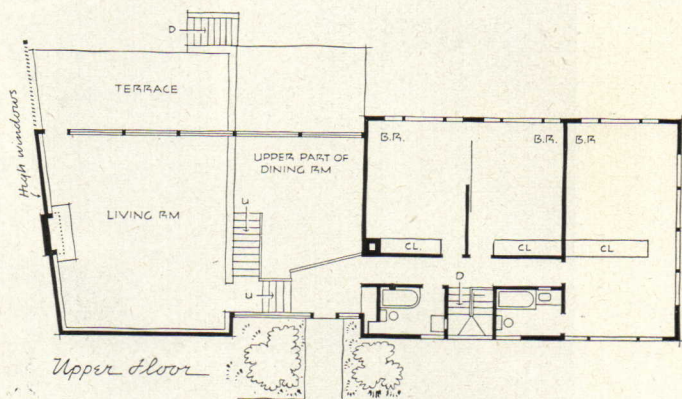
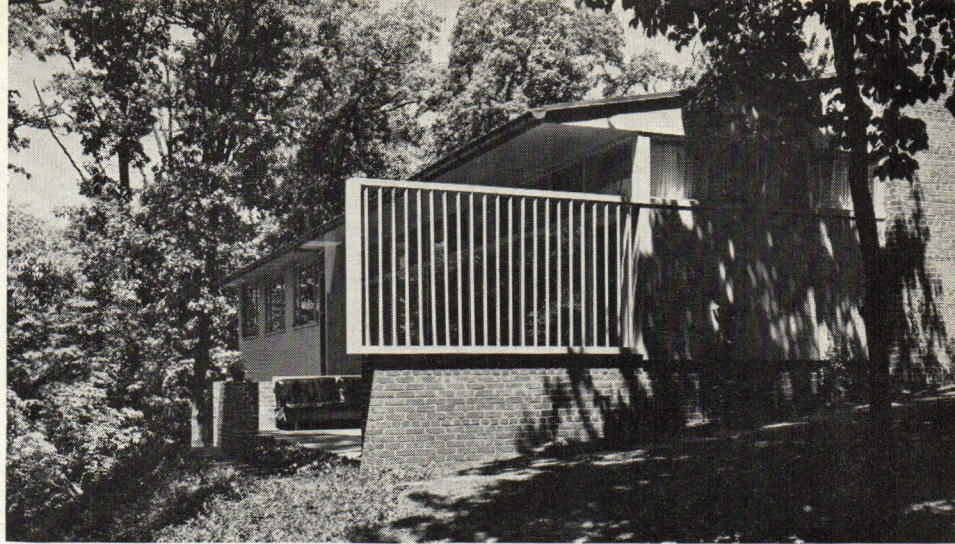
site: Two acres, heavily wooded and sloping steeply down to the southwest.

solution: All main rooms face south, away from the street and overlooking the wooded slope. Four-level scheme (including garage). Terraces, developed at both living-room and dining-room levels as outdoor extensions of those rooms, are connected by garden stairs. Entrance "deck" overlooks both main rooms and (through windows) the wooded hillside beyond. Lower walls are furred brick; other walls, frame. Living room and lower level have concrete floor slabs on grade; roof is carried on trussed rafters; glass walls are constructed with structural mullion posts. Ventilation in living room is by means of louvers below and transom sash above fixed glass areas.

ROUND-ROBIN CRITIQUE:

"This plan accomplishes its purpose with intelligence," Holmes says. "The plan is uniformly efficient and practical," Maston echoes, "The architects deserve great credit for avoiding banality of the usual dining-room treatment and, through a very original and striking solution, creating an extremely pleasant place to eat and entertain."

Accommodation to the site both found excellent, with Holmes qualifying this by adding, "If, as is presumed, the upper entrance to drive is the principal one; otherwise one might feel the garage structure abrupt in its relation to approach." In fact, the only plan element that the critics questioned—and both of them did—is the location of the lower-level toilet room (next to the bar) with a door into the dining room. After reading his fellow architects' criticism on this point, Jackson comments, "Despite its convenience for use in connection with the lower terrace and yard, I am willing to concede that the location is questionable." Holmes, though, sums up the general impression: "The plan is direct, nicely oriented and, withal, pleasant in its divisions for living, offering a variation in the standard circulation for the day's routine."





Above: downhill view of house, dining-room terrace, left, living-room terrace, up steps at right.

Facing page: top—stairway between entrance "deck" and the flagstone-floored dining room; bottom—south dining terrace. Red-cypress boards surface the upstairs portion of the house.

Holmes remarks that "materials are fair and well related and . . . the structure is simple and, for the most part, nicely integrated with the fenestration . . . Artificial lighting is supplied with uncluttered surfaces. There is no indication of air tempering along with radiant heat. Perhaps some other ingenious method is used to overcome the lag and guess-ahead on the weather." On the latter point, Callender reports, "We have used radiant heating with outdoor bulb control on a number of residential jobs, and both we and the clients are entirely satisfied with the results. The theoretical objections to such a system—time-lag and lack of ventilation—have proved to be unreal in practice."

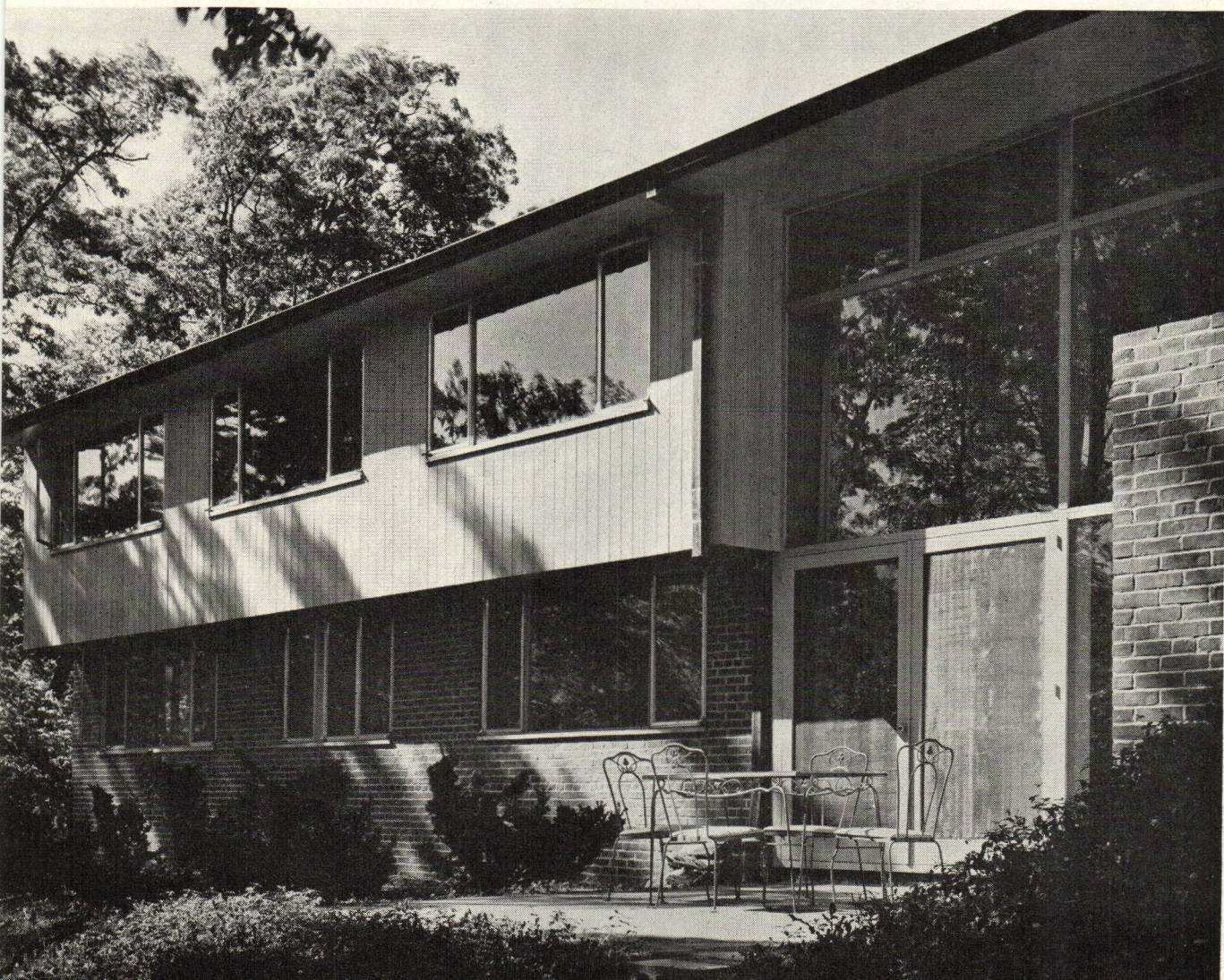
ROUND-ROBIN CRITIQUE: THREE HOUSES

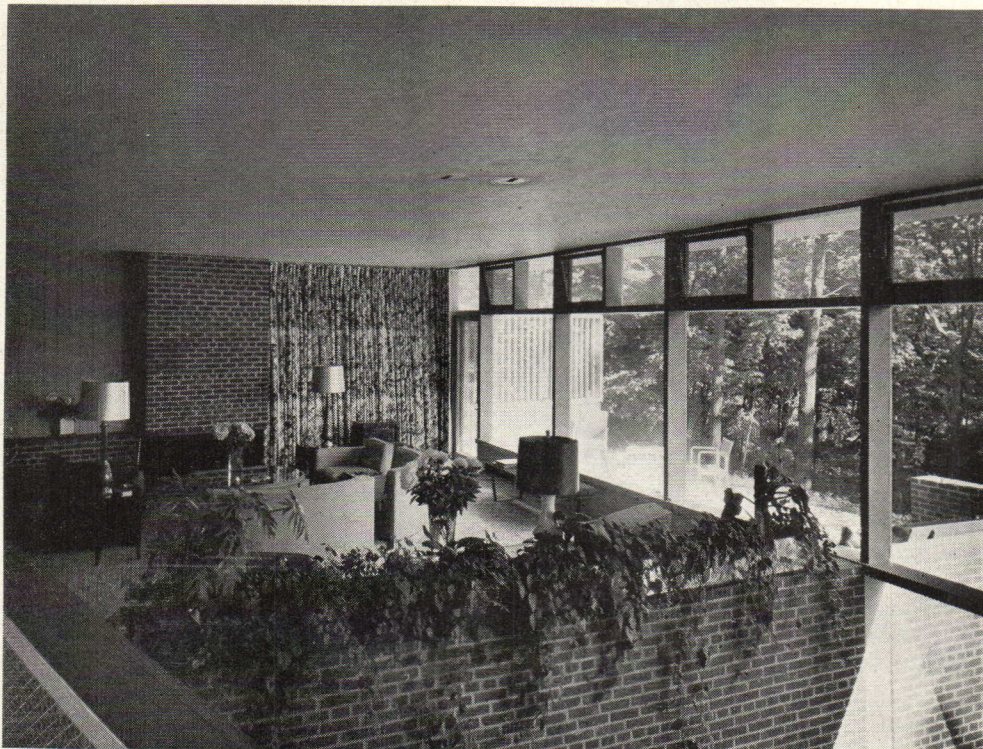
HOUSE: SYOSSET, NEW YORK

MATERIALS AND METHODS

CONSTRUCTION: **Frame:** #1 Douglas fir. **Walls:** either frame with brick veneer or frame surfaced with clear red cypress. **Floors:** flagstone, concrete, or plywood (for carpet-base). **Roof:** wood trussed rafters; built-up roofing, with red stone surfacing. **Fenestration:** aluminum casements; plate and rough plate glass. **Thermal insulation:** glass wool. **Partitions:** studs and wood or plaster surfacing.

EQUIPMENT: **Heating:** radiant system; hot-water source; copper tubing in floor slabs and ceiling construction; modulating system controls.

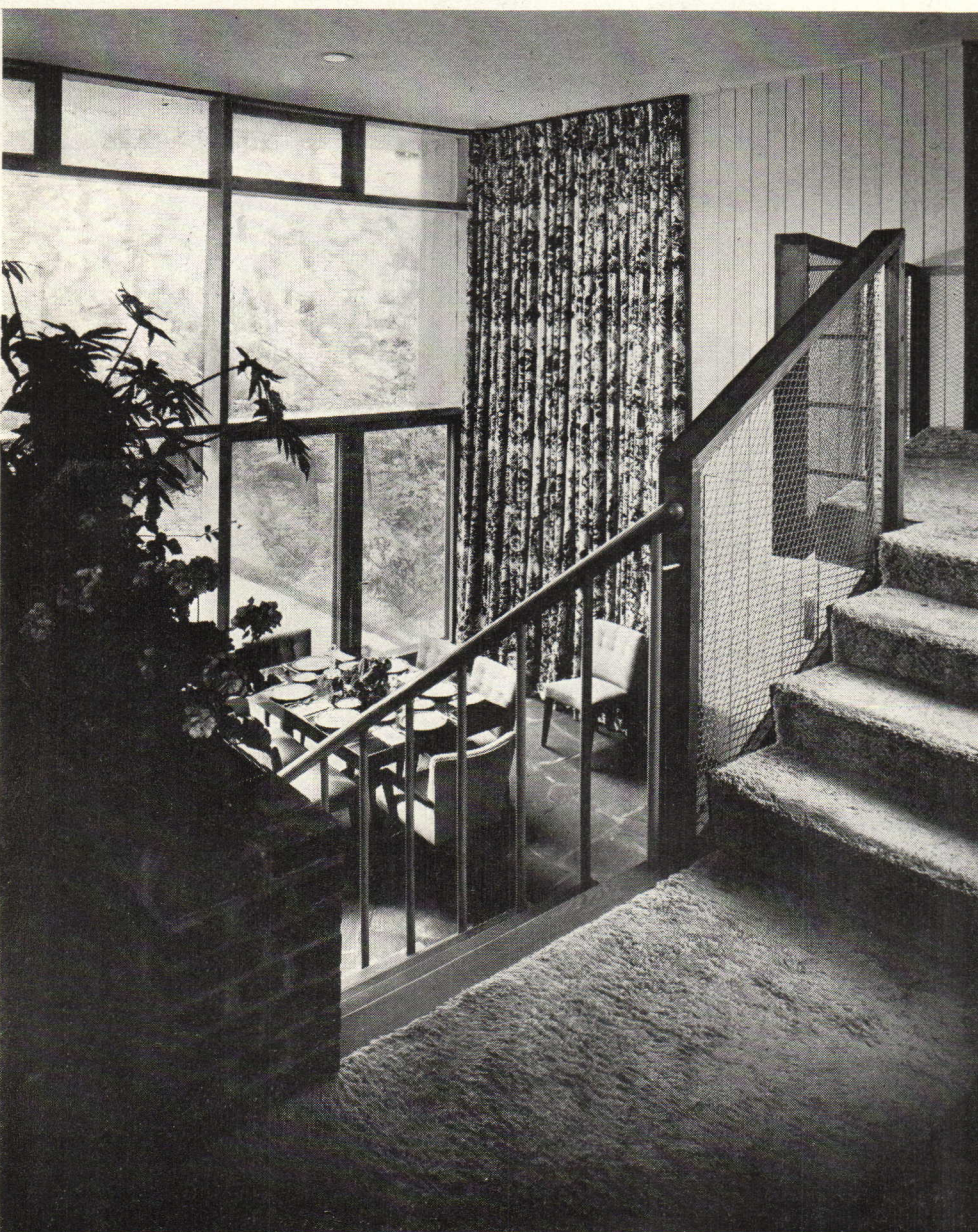




Some of the details prompted more discussion than the over-all design. So, while Maston comments that "the spatial relationship created by the split levels is very satisfying (and) so is the continuity of expression caused by the penetration of the brick retaining wall and its echo in the fireplace material," he goes on to say that "the spasmodic quality of the stair and entry hand rail is an exception." Holmes, on the other hand, finds the mesh-framed balcony successful in general, though "its recall, in sloping form with the unrelated connections and the following railing, are unfortunate details in an otherwise delightfully conceived design." Callender agrees with the critics on this point; Jackson comments, "This is largely a matter of individual esthetic judgment. I still like the railing design, but I am sorry that the very open metal mesh was substituted for the woven fabric screen originally intended."

The critics disagreed on some points of the fenestration, Maston finding it "very handsome;" Holmes commenting that "the treatment of transoms in the living room appears brutal." Jackson rebuts: "I agree that the scale and detail of the window frames and transoms may seem heavy, even brutal, in places. I am continually looking for lighter and more handsome window solutions within the limitations imposed by function, structure, and materials."

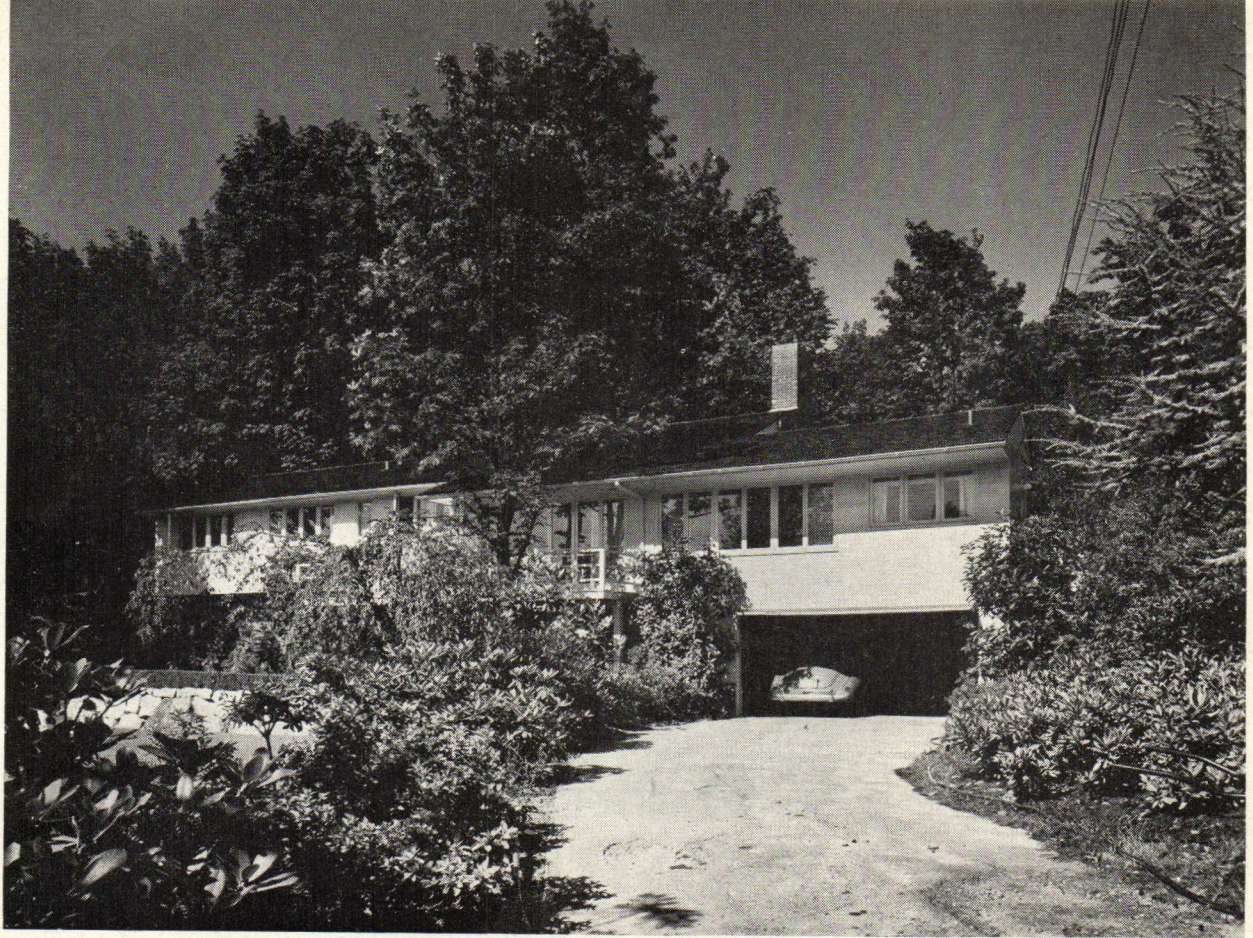
As a summary appraisal, Holmes says that "on the whole, the house appears to be a contribution to unhampered, straightforward thinking . . . Divorced from a beautiful site, it would still hold its own."



Top: view of living room (and terrace beyond) taken from entrance "deck."

Bottom: looking down into two-story-high dining room from living room level.

Richard Garrison photo



House: Seattle, Washington

J. LISTER HOLMES & ASSOCIATES, ARCHITECTS

program: Home for a single career woman and her two brothers—one in school; the other, a landscape designer. Therefore, home activities and entertaining are pretty much restricted to evenings and weekends: dinners, badminton, gardening, dancing, Ping-pong, etc.

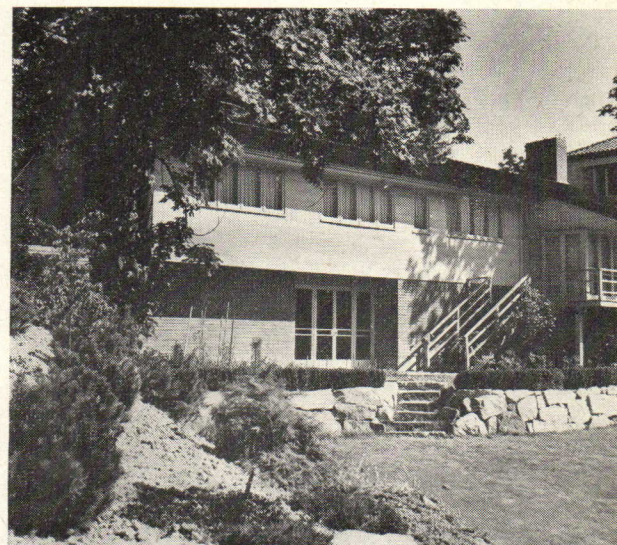
site: Irregular-shaped lot, bounded by streets on three sides; steep slope on the northeast end of site.

solution: House aligned along ridge of slope in northeast portion of site, so that there is a single above-grade floor level on this side, while there are two full floor levels toward the southwest. All main rooms of the house are oriented and opened up to the south or west, to take full advantage of precious sunlight. Placement of house well back on the lot (with front-door entrance served from the side street because of the steepness of the site on the Washington Boulevard side) allowed a deep lawn, garden, badminton court, and outdoor play area on southwest front; also (at one side), the driveway entrance to the garage at grade on this front.

Top: view from southwest (house set well back on lot against steep slope). Front door is on the uphill, one-story side of house (see over page).

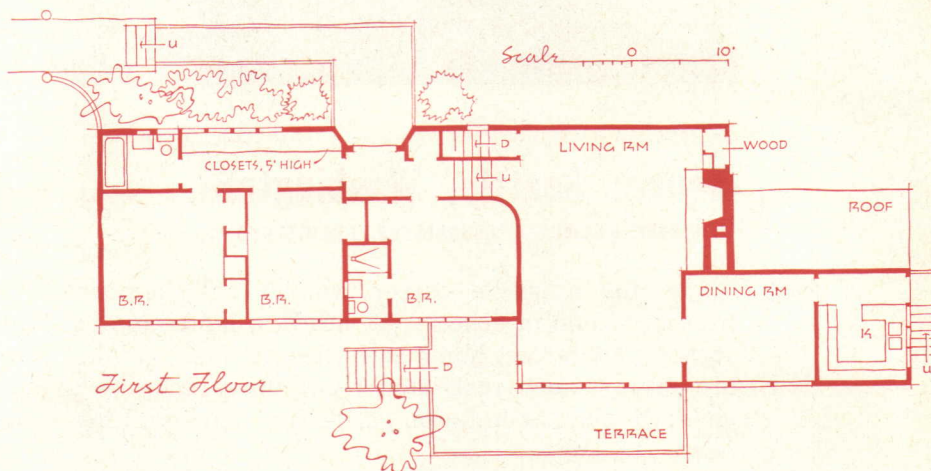
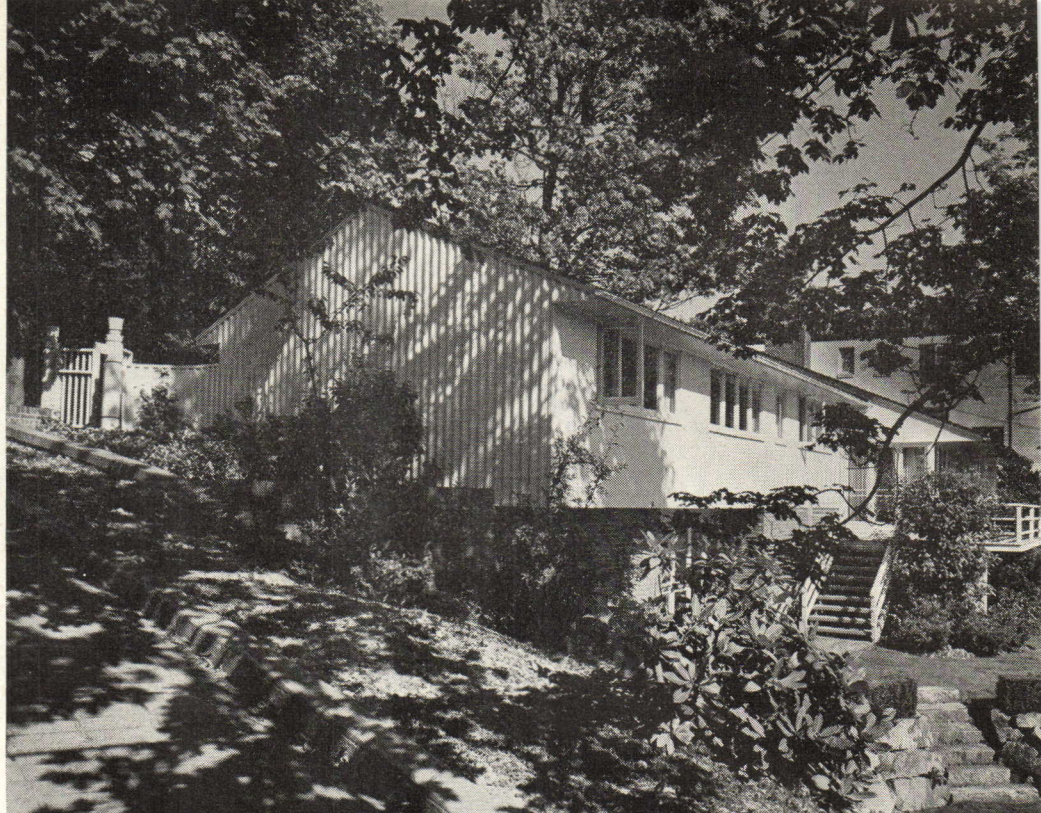
Bottom: detail of southwest front (space for badminton court in foreground) showing stair down from living room terrace, with doors to recreation room opening onto landscaped terrace.

Photos: Dearborn-Massar



Northwest end of house, showing steep site condition. Boards and battens surface the end wall. Gateway to front door is at far left of photo.

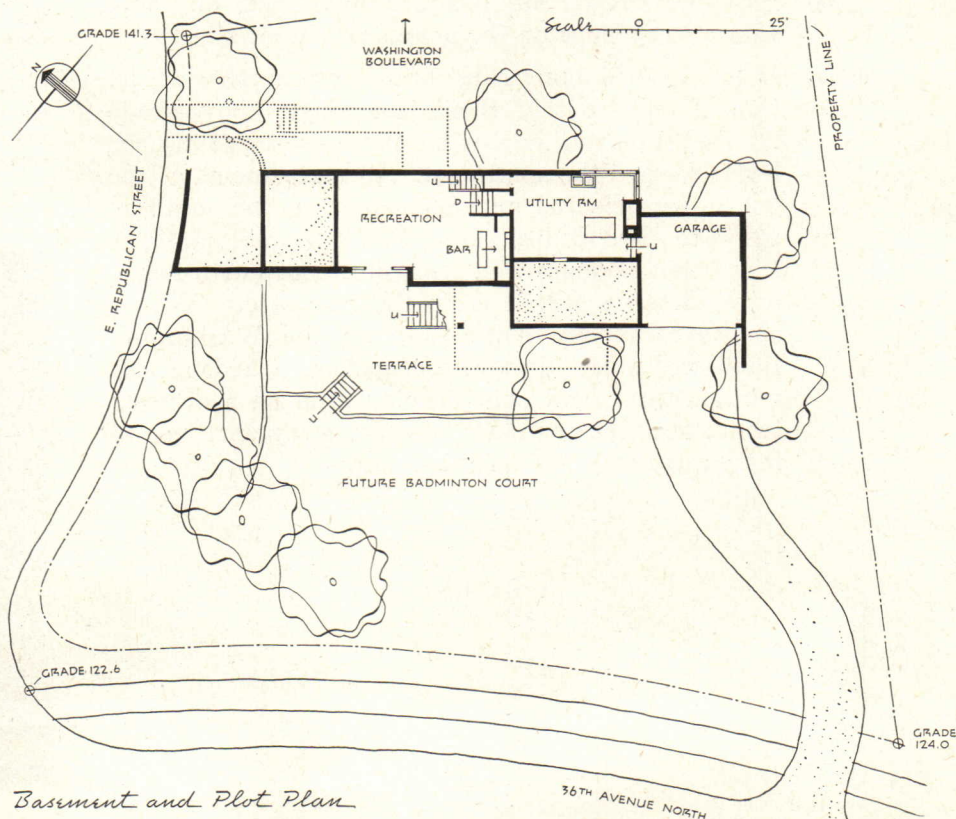
Across page: top—living-room fireplace seen from hallway stairs; bottom—detail of entrance.



MATERIALS AND METHODS

CONSTRUCTION: **Frame:** fir walls, floor and roof. **Floorings:** natural beech. **Wall surfaces:** exterior—rough-sawn #1 cedar; interior—plaster. **Roofing:** hand-split shakes. **Fenestration:** fir sash; double-strength B glass. **Thermal insulation:** wool-type batts. **Doors:** flush, fir.

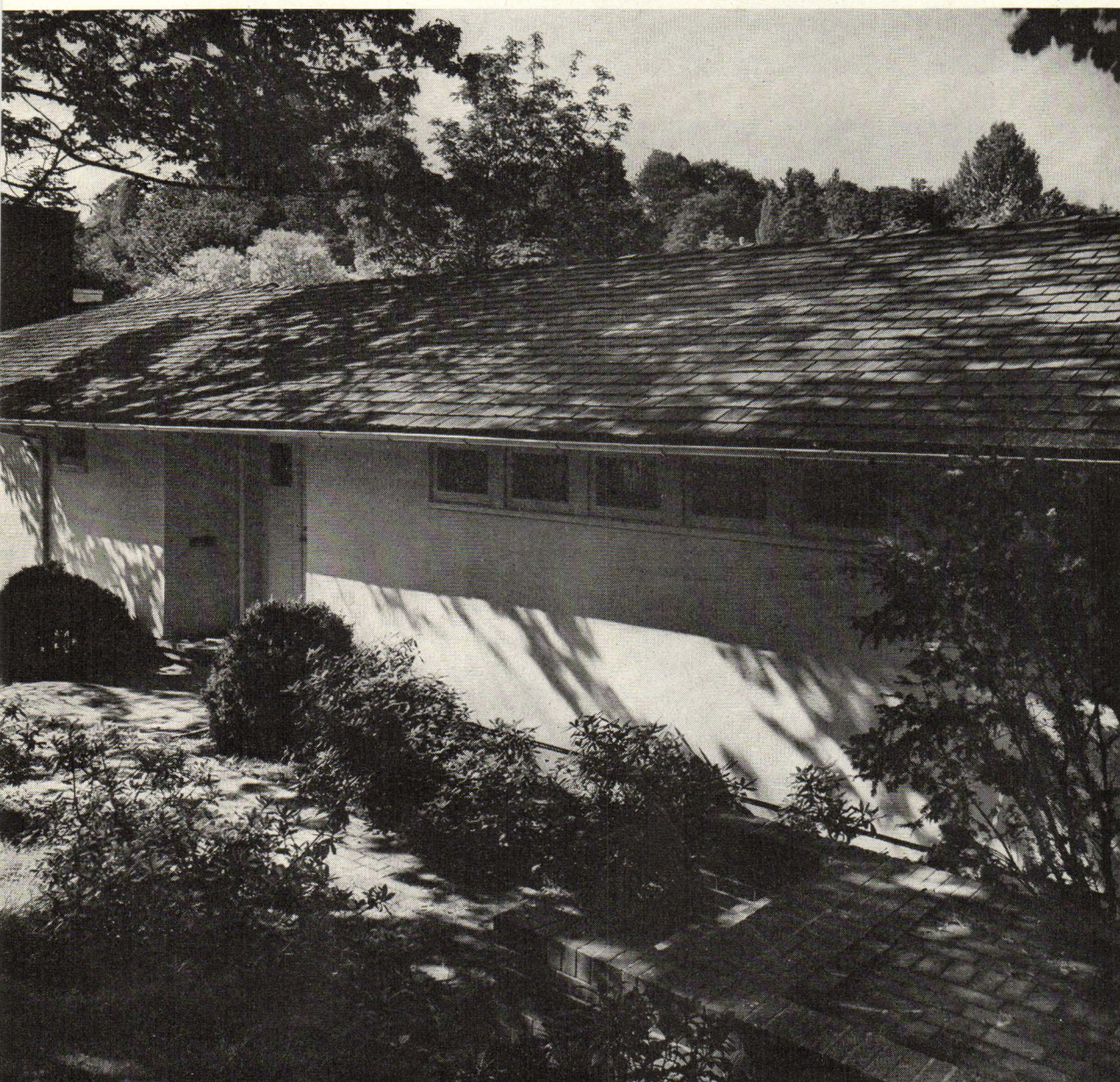
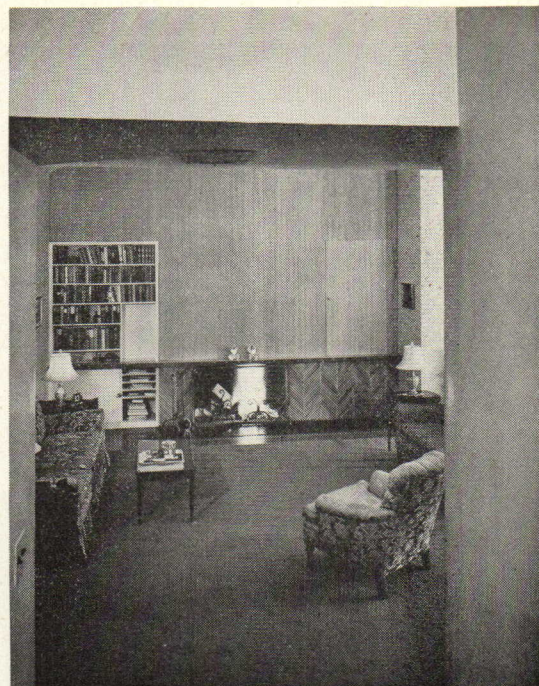
EQUIPMENT: **Heating:** forced warm-air system; controls. **Kitchen:** electric range and refrigerator.

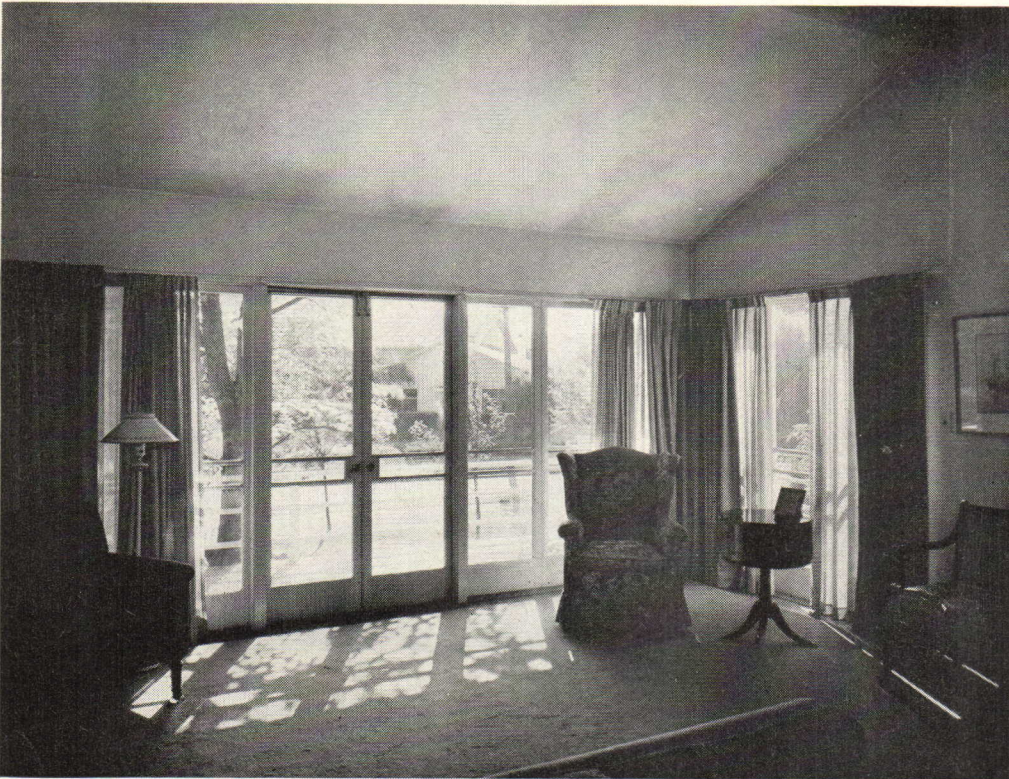


HOUSE: SEATTLE, WASHINGTON

Basement and Plot Plan

Maston comments that "without attempting to be a startling or striking design performance (another critic calls it 'rather unexciting') it has a quiet, mellow earthiness . . . the house relates itself to the land and the trees upon it very pleasantly. The site was a difficult one, forcing the garage into an inconvenient location." Jackson speculated if the plan might not have worked out better if reversed. Because of the contours of the site, Holmes reports, the garage location (and especially its placement under the kitchen) is both "logical and convenient." Nor could the northwest end of the site have been used for this purpose, as "the logical approach from the boulevard dictated the main entrance from the side street." Callender found occasion to applaud "the simple, straightforward use of brick, flush siding, and wood casements."





Top: windowed corner of living room adjoins the sitting deck overlooking the southwest garden.

Center: detail of deck; windows of bedroom wing in background.

Bottom: dining room, looking back toward living room.



Main plan elements questioned were "lack of windows and cross ventilation" at fireplace end of living room (Callender and Maston); "main entrance hall coming into bedroom area, interfering with privacy" (Jackson and Maston); and "the separate dining room"—unless living and service are "on a very formal scale."

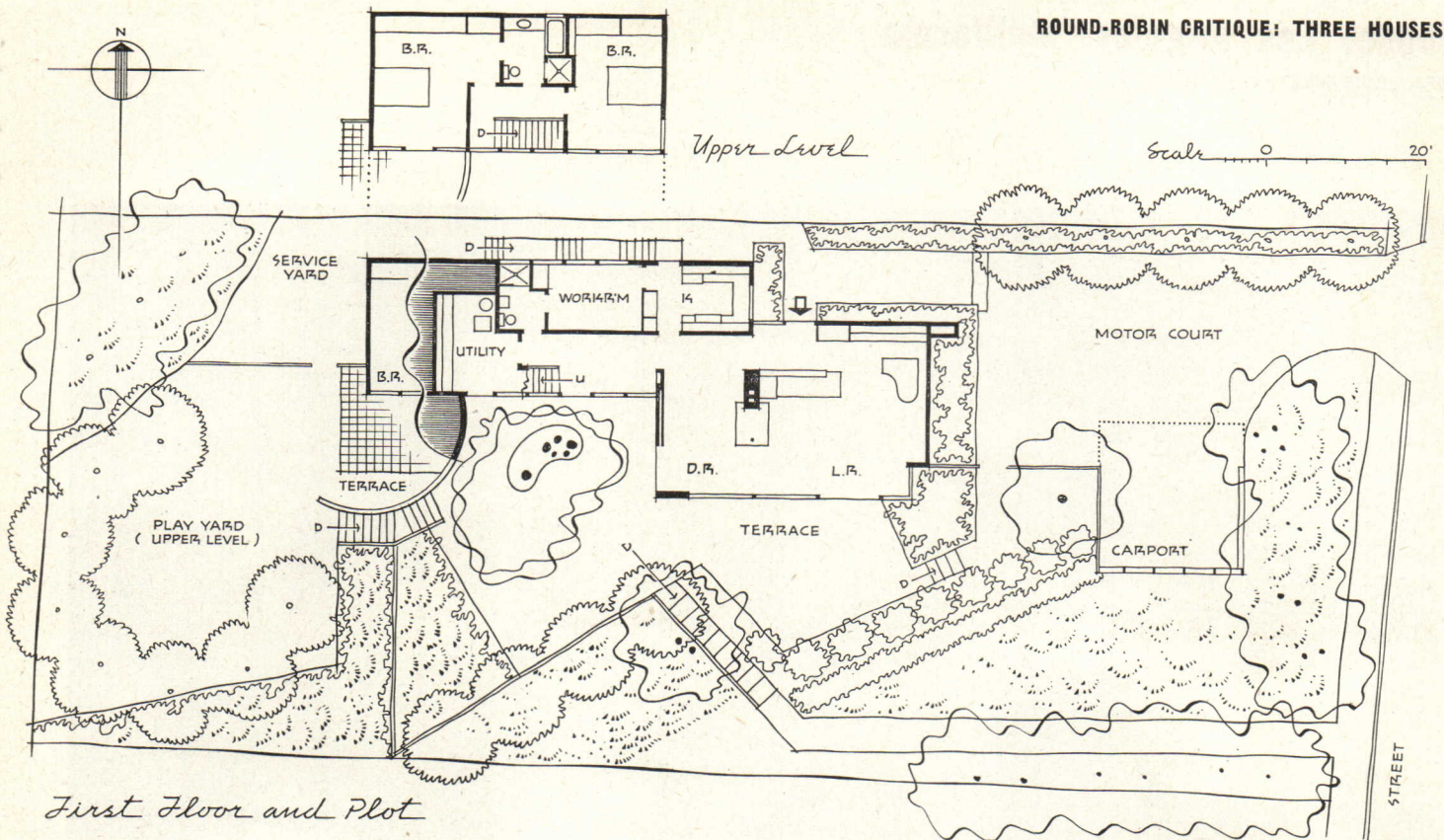
Holmes comments: "The living room has ample light from the important southern and western exposures; windows on the north side would borrow from privacy and add nothing in return." Furthermore, "Seattle's climate does not require cross ventilation." (From June through September, the Seattle average temperature is 61 degrees, F.—Ed.) As for the entrance hall interfering with privacy in the bedroom wing, Holmes points out that "bedroom circulation is self-contained;" hence this occasions no interference. In reply to the question about a dining room, Holmes reports that "the owners are not at all formal, but they do prefer a segregated dining area when guests are in the house." Thinking back to Jackson's other question about privacy in the bedroom area, he asks: "What standard of privacy is it that is so sensitive in one instance and yet decries sensitivity in others, in another?"



House: Los Angeles, California

CARL LOUIS MASTON, ARCHITECT





MATERIALS AND METHODS

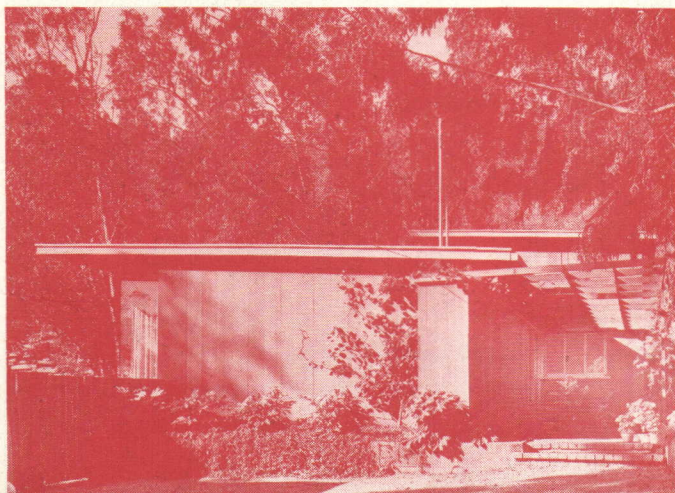
CONSTRUCTION: **Frame:** standard wood studs at solid walls; 4" x 4" rebated posts and lintels along south window wall. **Floors:** 4" concrete slab at main floor level; wood joists and 1" x 4" flooring at bedroom level. **Roof:** wood joists, mineral wool and composition roofing. **Floor surfaces:** carpet in living room, dining room, stairway, and bedroom hall; brick paving in entry and gallery; asphalt tile in kitchen and work room. **Wall surfaces:** exterior—1" x 10" T&G flush joint redwood; interior—plaster in kitchen and baths; 1/4" cedar plywood in living room and one bedroom; gum plywood in other rooms. **Fenestration:** steel casements; 1/4" plate glass. **Insulation:** thermal—accordion-type aluminum in roof; acoustical—1" thick, cement-bound fiber panels on ceilings of living-dining area.

EQUIPMENT: **Heating:** forced, warm-air system; gas-fired furnace; controls.

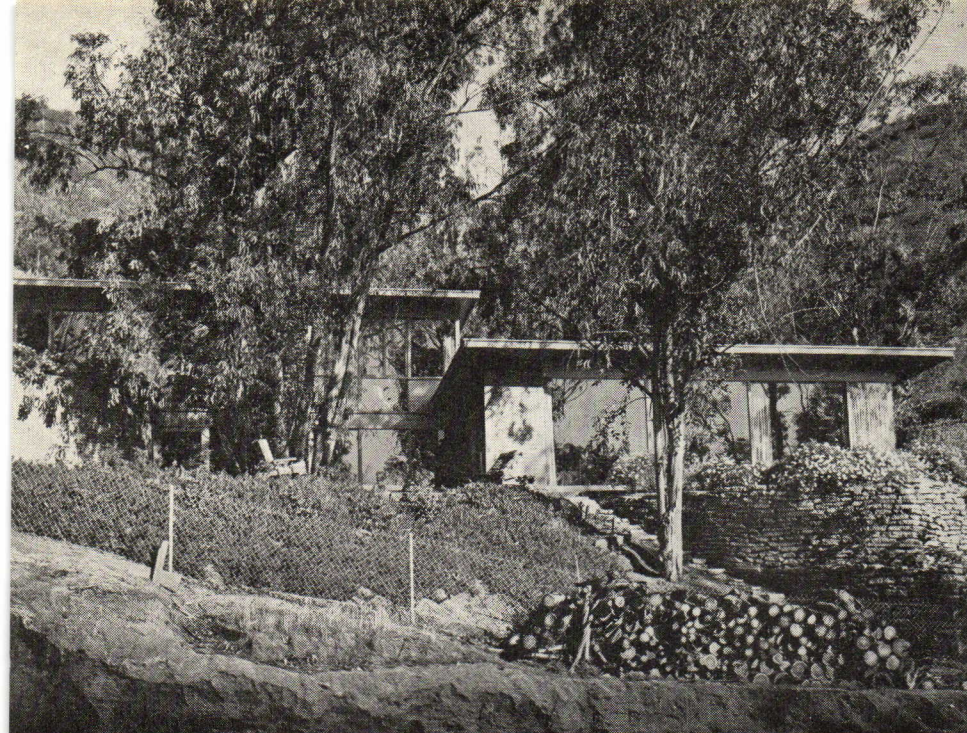
program: Home for the architect and his wife, with provision for future children. Required: a sewing-work room and space for a small workshop. Modest provisions for entertaining six to eight people informally.

site: Wooded canyon overlooking the city to the south; hills toward west cut out late afternoon sun.

solution: Arranged on two levels, each with its terraces, the house has two bedrooms and bath on the upper floor; combined living-dining room, gallery and utility-workshop on southern face of lower level, kitchen and Mrs. Maston's sewing room along north wall. To gain the greatest harmony between site and house, preserving the clump of eucalyptus trees, etc., the architect admits that some compromise was necessary. "Location of service yard is weak," he comments, "and the relationship between the carport and the house is not as functional as it might be." Another desideratum was ease of circulation between rooms. The architect points out that the circulation "gallery" expands into an informal area for games, quick meals, etc.



HOUSE: LOS ANGELES, CALIFORNIA



At left: general view from below house, raised bedroom terrace at left.

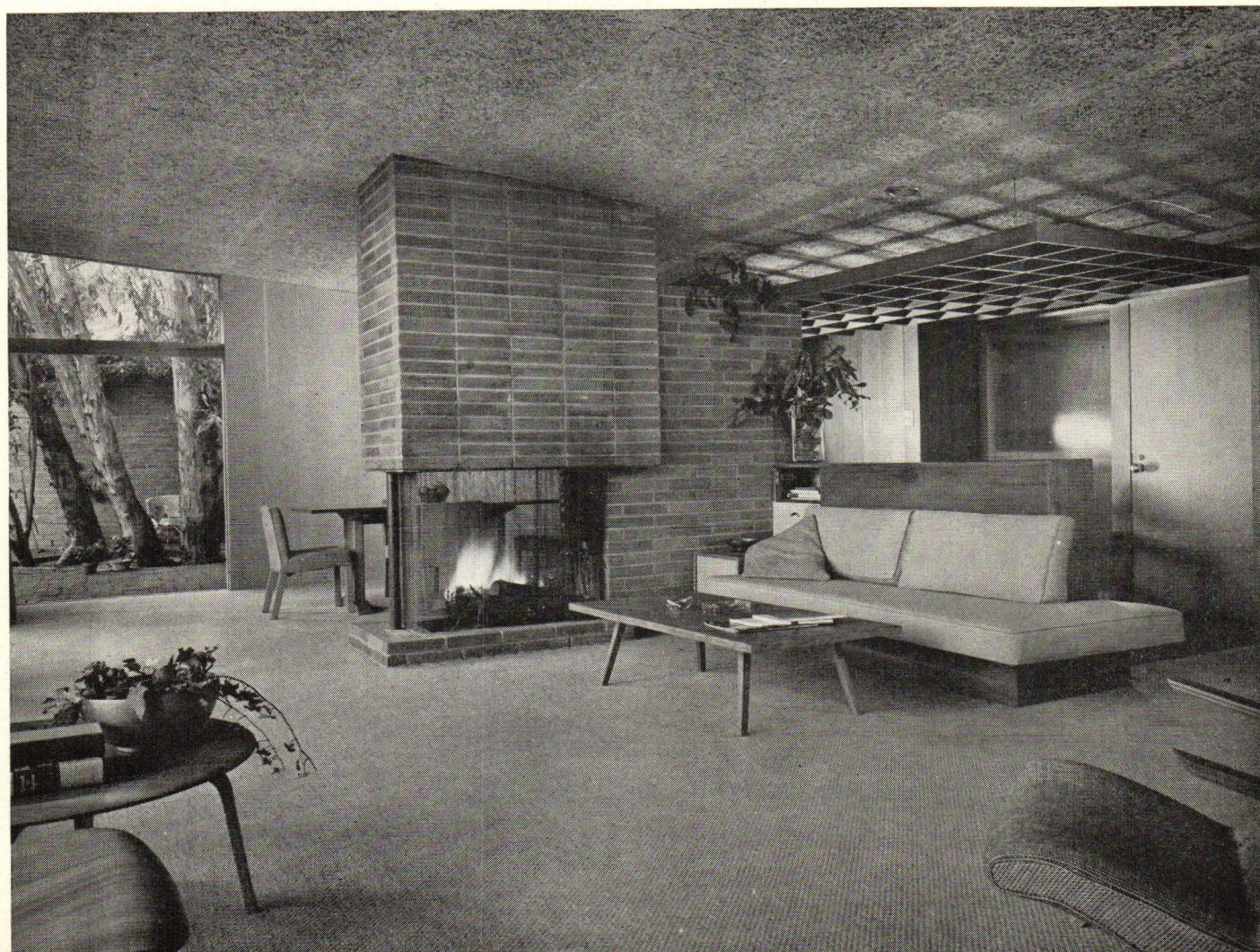
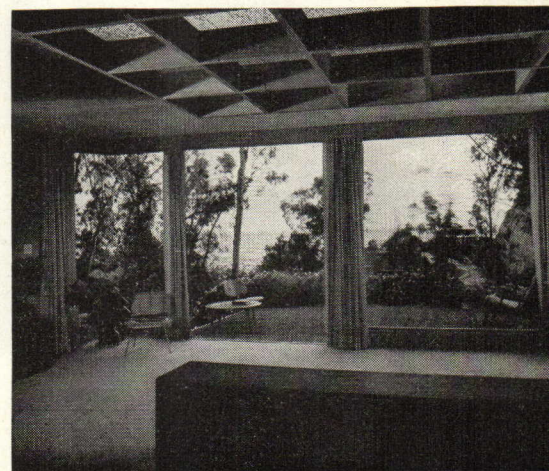
Immediately below: looking across living room and brick-paved terrace to widespread view of the city beyond.

Bottom: living-dining room, front door, at right (behind built-in sofa unit).

Photo across page: entrance detail. Front door is in left-hand wall at rear of terrace, under the eggcrate trellis.

Photos: Julius Shulman

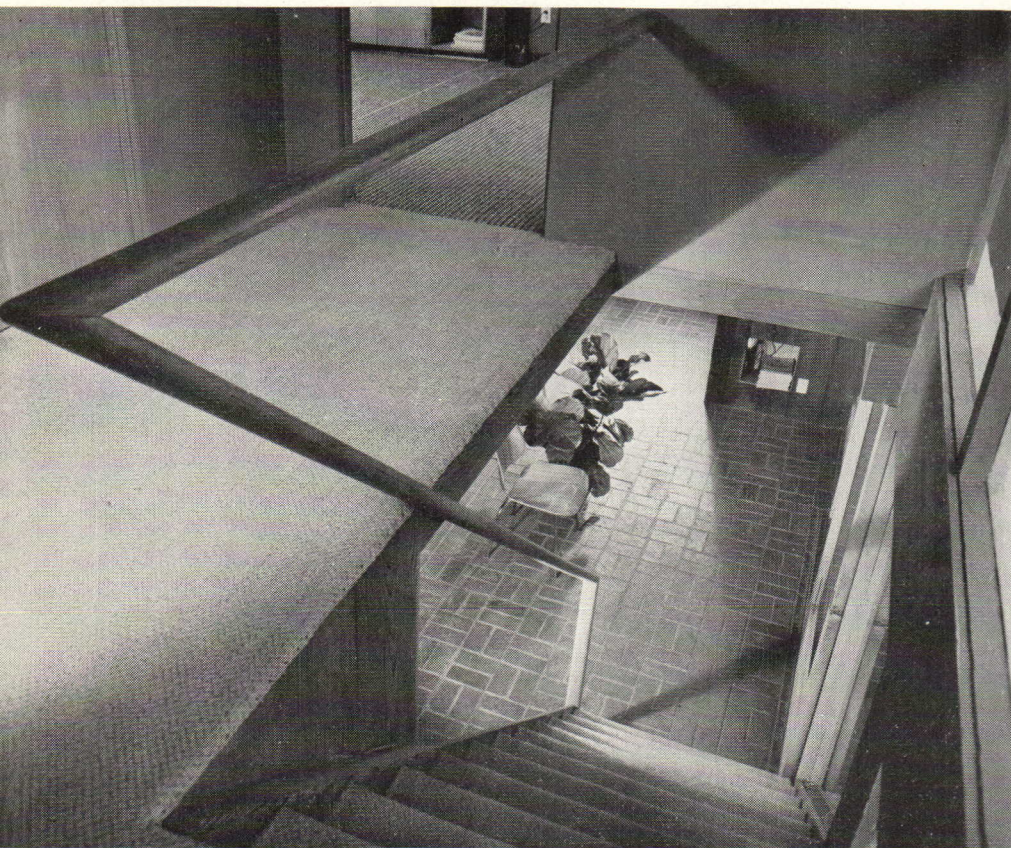
Consensus was that the planning and accommodation to the site are "excellent." Minor points: "the value of the curved retaining wall" (Holmes); and "lack of general storage space" (Callender). Maston replied that the wall is curved "for both structural and esthetic reasons, plus the fact that it afforded a smoother merger of the areas involved." As for storage of garden equipment, trunks, etc., the utility workroom is entirely adequate.





Top: gallery-hallway—an informal area for games, quick meals, etc.
Bottom: down stairway to gallery.

ROUND-ROBIN CRITIQUE: THREE HOUSES



Jackson thought the house “very handsome, well organized, orderly and exciting,” but “one might question the large amount of hall space.” Maston, however, reports that “this space has proved to be the most useful area in the house—the way this family functions. Perhaps it might be another family’s poison.” Callender calls it “a beautiful house in almost every respect . . . Some things have apparently been done purely for effect,” he continues, “such as the mitred glass corner of the living room, the eggcrate over the entry, and what appears to be a false closet at the entrance corner.” But, he concludes: “I think the effect justifies their use.” Maston readily admits that the items mentioned “and a great deal else” were done for effect. Callender found the stair rail “strikingly handsome” but questioned its rigidity and commented that “in any case, it is not safe for children.” “There are no children to be considered at the present,” Maston retorts. “It would have to be modified, I suppose, in that eventuality. It is perfectly rigid.” Holmes questioned the success of seating areas surrounding a fireplace pivoted between living and dining areas. Maston could simply reply that, in this case “the arrangement has proved successful.” But, he goes on to say, “I have one serious criticism of it—and this concerns almost all modern furniture I’ve seen . . . Low-backed couches are not satisfactory for comfortable, pipe-and-slippers reading. The upholstered back should extend high enough to receive the head.”

HOUSE: LOS ANGELES, CALIFORNIA



The Corporation Does The Work

by THOMAS H. CREIGHTON

In most states corporations cannot practice architecture or any of the other professions. And yet an architect's organization is somewhat unique compared to the other professions, in that it involves a very complex business arrangement, sometimes includes a large personnel, and requires subcontracting to engineers and others in order to perform the work.

Is it possible to enjoy the advantages of a corporate business set-up and still meet the requirements of the law? Ernest J. Kump and Mark Falk, architect and engineer, respectively, of San Francisco, California, have worked out such a scheme which, they report, functions with complete success. They felt that there were many reasons for a corporate form of organization: the business arrangement is better; all employees, including the principals, can enjoy the benefits of social security, group medical and life insurance, and bonus plans; a retirement plan can be set up; the interest of partners and associates in the production end of the business is clear-cut; and, finally, there is no change in the continuity of the business in the event of the death of any principal or stock holder.

The Kump-Falk arrangement is simply that they have two business identities—a co-partnership, and a corporation. All contracts for architectural services are taken in the name of the partnership, and are then given to the corporation for execution by the issuance of purchase orders. Accepting the professional contracts in the name of the partnership is in full compliance with the laws since the responsibility for performance still remains with the partners. The partnership has no employees and therefore sublets the entire execution of the work to the corporation, which is organized to accomplish it. The partners are also paid employees of the corporation, directing the design and execution of the contracts sublet to it.

The financial arrangement in the case of Kump and Falk is that the partners retain one-eighth of the architectural fee, for their responsibility and for the obtaining of the work. A purchase order is signed with the corporation for performance of the work for a fee equal to the remaining seven-eighths of the full original fee. For example, if the partnership receives a contract for architectural services in the amount of eight percent, the corporation is given a purchase order to perform the work for a fee of seven percent. It is then up to the corporation to do the work for what profit it can retain out of that seven percent. The division of gross profits earned by the corporation is on the following basis:

Twenty-five percent of the gross profits before taxes, is reserved for the stockholders as return on capital investment.

Twenty-five percent is reserved for operating capital and depreciation on fixed assets.

Twenty-five percent is distributed on a prorata basis to supervisory employees concerned with the production of the architectural work.

Twenty-five percent is prorated among all of the remaining employees within the organization.

In addition, the corporation provides life insurance (\$5000 for each man and \$2500 for each woman employee) and medical and hospital insurance, for all employees including the partners. This is part of the overhead and is not considered part of the bonus arrangement.

The supervisory employees of the corporation consist of the architect in charge of working drawings and specifications, the architect in charge of supervision, and the planning consultant in charge of long-range planning and programming. Kump and Falk feel that much of the difficulty in the usual arrangement with partners, junior partners, and associates is that there is confusion in finding a way to give an interest in the business to "men who are important in the production end of it but who do not contribute anything to the professional reputation and standing of the architect, which of course is the source of work that comes in." Thus a good architectural designer or a good production man participates only in the part of the services to which he contributes. If one of the corporation employees becomes of partnership status he can be brought into the partnership. In this way a clean line is drawn between the interests of the production man and the professional architect's chief asset—his reputation. As a matter of fact, under this arrangement there is nothing to prevent the partners from doing consulting work not involving plan production on their own account, independent of the corporation.

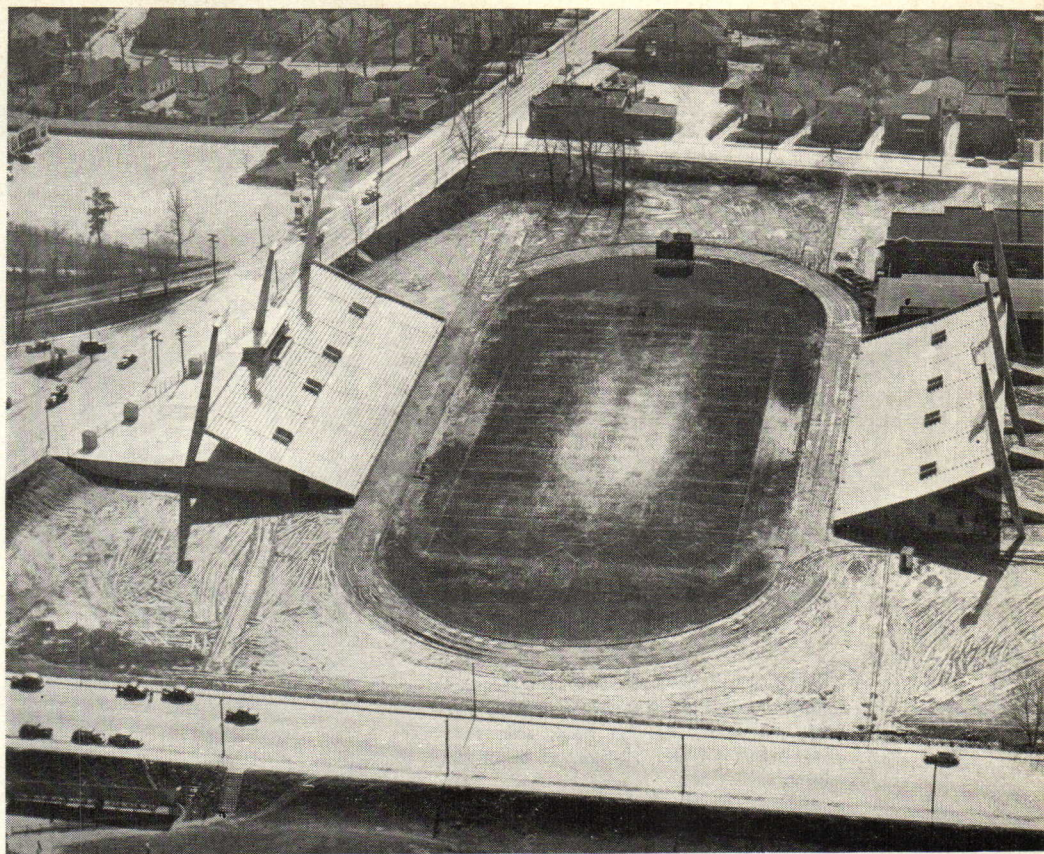
The previous article in *P/A* on partnership and associateship arrangements (December 1948) brought us a great many requests for further information on the subject, and a number of letters setting forth in detail how so-and-so had set up a profit-sharing arrangement among his employees. The Kump and Falk double-identity method of doing business does not seem to eliminate the problem of dividing bonuses satisfactorily. As it would be in a straight partnership or associateship, the distribution of profits is "on a voluntary basis on the part of the corporation, and the prorata is based upon a factor consisting of the relative amount of wages and years of service with the company." They admit that the actual figuring may seem complicated, but they say, "We think it is a fair way of distributing the bonus." The factor for each employee is arrived at as follows: the number of months the employee has been with the corporation during the year for which the bonus is being paid is multiplied by the monthly salary plus ten percent of this amount for each year the employee has been in the service of the company. The resulting figure is that employee's factor, and when it is divided by the sum total of all the individual factors it gives the percentage of the total bonus that employee receives.

There appear to be other advantages—and perhaps some disadvantages—which a brief description of the corporation scheme itself cannot go into. For instance, the tax picture changes from that of the usual partnership arrangement. Other methods have been worked out by architects in various parts of the country, and anyone who wants to investigate the possibilities would do well to consult a lawyer about the restrictions governing corporate organizations in his own state. The set-up which Kump and Falk find satisfactory might not be the ideal one for another firm; it is described here merely to indicate that there are many manners of practicing architecture which have not been generally explored.



Richard L. Aeck (left) and John V. Manget (deceased) who was Aeck's principal associate at the time the stadium was designed. Aeck: Ga. Tech. (B.S. Arch.). Work in Bogota, Colombia; general practice in Atlanta; District Architect for Pan American Airways in Recife, Brasil; association with Bush-Brown, Gailey & Heffernan, Atlanta, before establishing own practice in 1948. Manget: M.I.T.; Navy pilot during the war; work with Robert and Company, Atlanta, and Wurdeman & Becket, Los Angeles, before joining Aeck Associates. He was killed in July of this year while piloting a Navy plane as reserve officer, U.S.N.

Photos: Gabriel Benzur

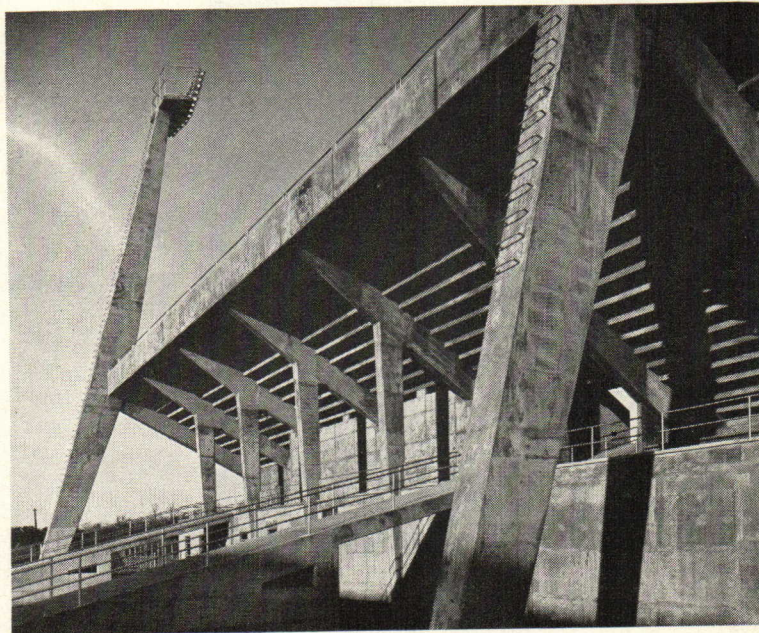
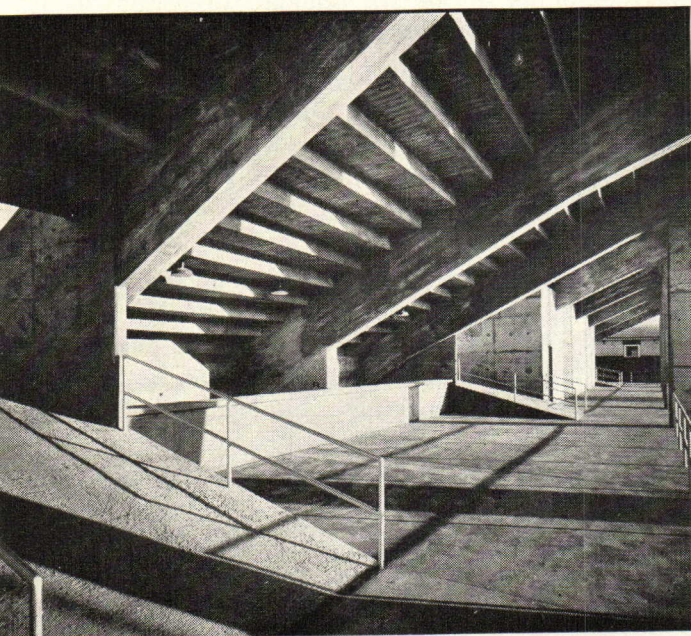


Stadium: Atlanta, Georgia

AECK ASSOCIATES, ARCHITECTS

The Henry Grady Stadium serves six Atlanta high schools. Photo above: air view, with east stands at left, approached via a deep concrete apron; west stands (right) entered by long ramps from ground level. Headquarters for the Henry Grady High School R.O.T.C. are at grade, under the west stands.

Below: left—short ramps leading into east stands; right—comparable detail of west stands. R.O.T.C. floor visible under ramps at left.



Right: detail of press box area of east stands, with light standards towering 102 feet above the playing field; riser type "form fitting" seat brackets to be added later.

Below: the stands in use. Night games are the rule. Field is used for about 50 football games and track meets a year.

Across page: general view of east stands. In this bank, the toilet rooms occur at field level (beneath the concrete entrance concourse); in the west stand, toilets are on the mezzanine level, adjacent to the top of the long access ramps.

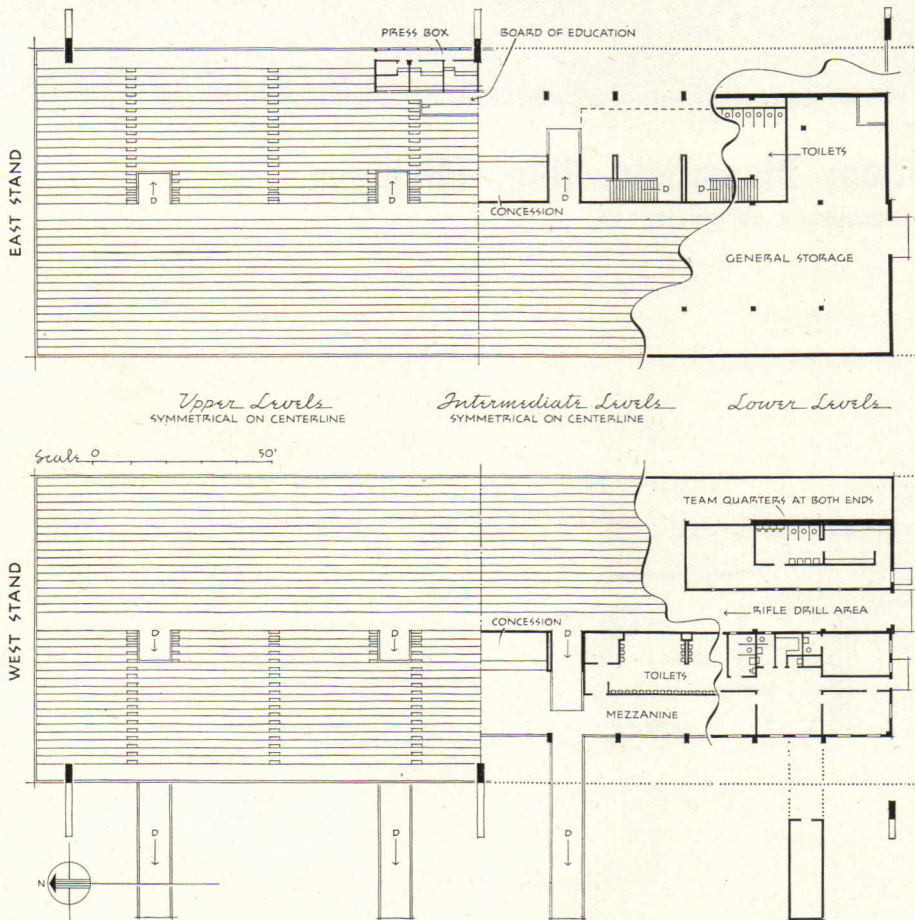


program: Seating for 10,000 at a football field, to be used by six city high schools; headquarters for the Henry Grady High School R.O.T.C. (rifle range and lecture room; offices for commanding officers and personnel; storerooms and armory); headquarters for officers and personnel of all six schools; dressing rooms, showers, toilets, for both teams.

site: Either side of standard football field and track; 20 to 30 feet of fill requiring piles; different levels in approaches to the two stands—a main highway behind the east stands, well above playing-field level; finished grade, slightly below field level, behind west stands.

solution: Parallel stands, one on the east, one on the west. In each unit, four vomitories open onto a central cross aisle that feeds six vertical aisles; press box at top of east stands; six structural light standards (bottom 40 feet are "working" supports; see Selected Detail, page 87). Entrance ramps varied in accordance with site conditions (see plans across page and photographs on preceding page).

STADIUM: ATLANTA, GEORGIA



MATERIALS AND METHODS

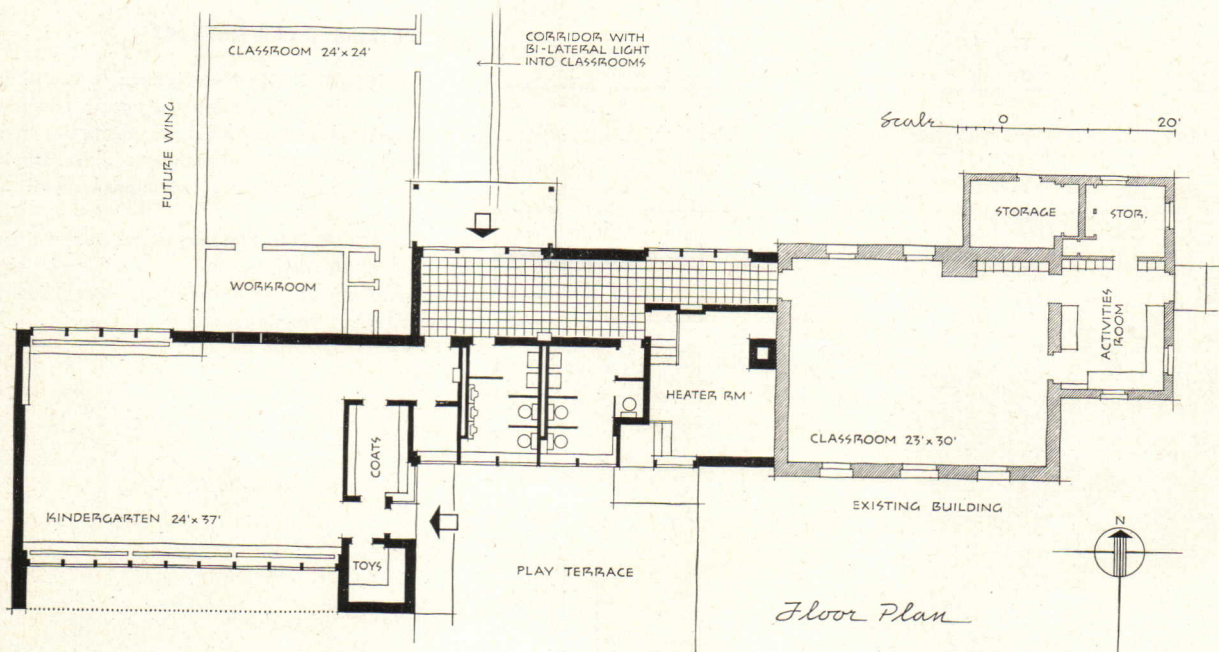
CONSTRUCTION: Foundations: tapered concrete piles. **Structure:** reinforced concrete. **Fenestration:** commercial projected steel sash; D.S.B. glass; 1/4" polished wire glass. **Insulation:** acoustical tile. **Partitions:** metal (in toilets).

EQUIPMENT: Lighting: fixtures and flood-lights. **Heating:** two-pipe, low pressure steam radiators; fin tube radiators; unit heaters; controls. **Ventilation:** exhaust fans.



School Addition: Bloomfield Hills, Michigan

O'DELL, HEWLETT & LUCKENBACH, ARCHITECTS



A.I.A. Award of Merit, Houston Convention, 1949

program: Addition of contemporary facilities for a lower elementary school (with provision for future expansion) to a stone school house, a local landmark built in 1886. In addition to problem of harmonizing thoroughly up-to-date facilities with the old building, the need was to provide for about 50 children of kindergarten, first- and second-grade ages.

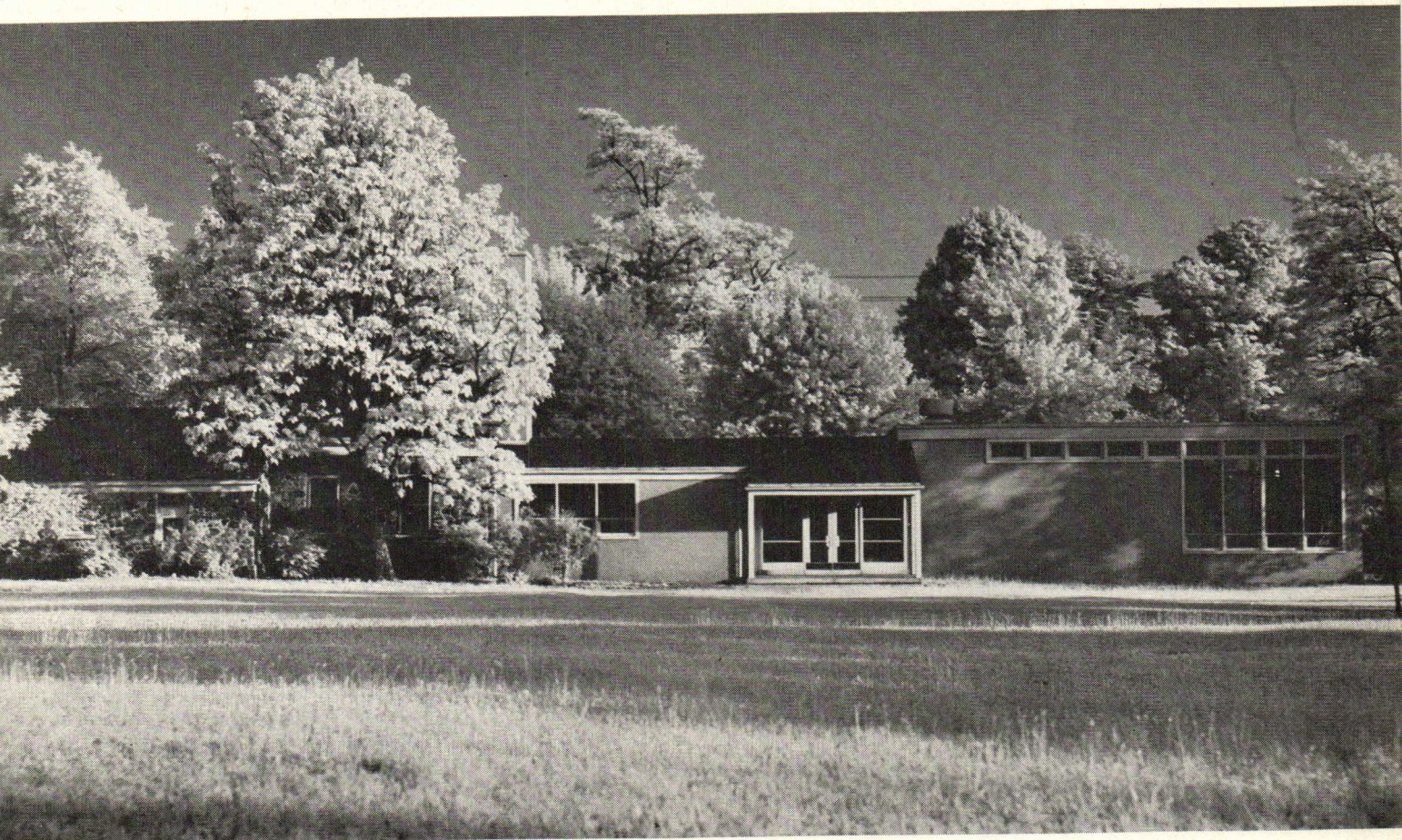
site: Approximately level site with some fine old trees.

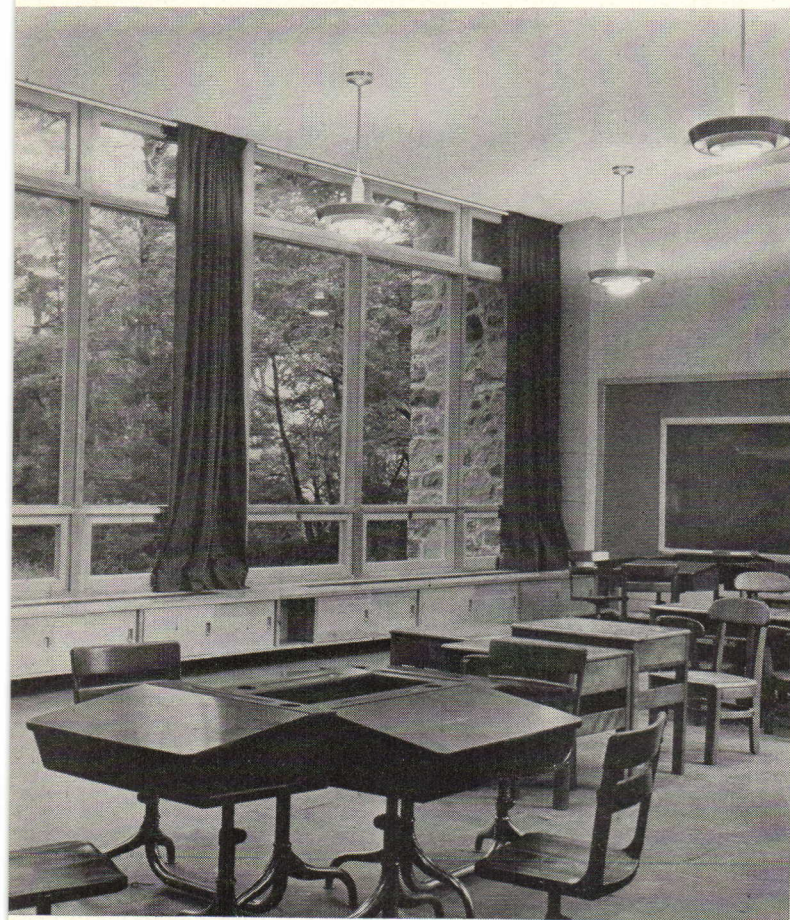
solution: Extension from the original building in a westerly direction, with connecting unit—heater room, toilets, and entrance lobby—and end unit, with south-facing window wall, comprising the kindergarten room. Eventual addition of four more classrooms will be handled in a wing extending to the north, to be served by a single-loaded corridor on its east side with clerestory cross-lighting above the corridor. A generous use of the local fieldstone recalls the wall treatment of the old building, while the plan scheme of the new unit makes no compromise with contemporary practice.

Across page: south front, showing new kindergarten room, connecting unit, and the original 1886 stone school house.

Below: general view of north side. The future classroom wing will extend forward from immediately at right of main entrance doors.

Photos: Joe Munroe





Left: southwest corner of kindergarten room; masonry wall extends out beyond building line on the south to form sun-control recess. Low window-sills and storage cupboards were designed to be in scale with small children.

Right: the opposite (northwest) corner. Note high band of north windows that continues above cinder-block wall at right. Traverse draperies provide great flexibility in daylight control.



MATERIALS AND METHODS

CONSTRUCTION: Frame: steel. Walls: field-stone and cinder block; interiors—painted block, or (in corridor wainscot, toilets, etc.) clear glaze facing tile. **Roofing:** built-up. **Fenestration:** steel sash. **Insulation:** thermal—glass fiber type. **Doors:** Flush slab.

EQUIPMENT: **Heating:** radiant system with wrought iron pipe in the floor; oil-burning furnace. **Lighting:** concentric ring incandescent fixtures.

H. Augustus O'Dell (left): Practiced in Detroit since 1903—Baxter & O'Dell (1903-1922); Baxter, O'Dell & Haplin (1922-1930); O'Dell & Diehl (1930-1939). Firm of O'Dell, Hewlett & Luckenbach established in 1942.

Thomas H. Hewlett (right): U. of Penna. Practice in Cleveland in 1923; in Detroit, member of the firm of Hewlett & Luckenbach from 1936 to 1942 when the present firm was formed. Director, Detroit Chapter, A.I.A.

Owen A. Luckenbach (not shown): U. of Penna.; practice in Detroit established, 1932. Partnership with Thomas Hewlett, from 1936 to 1942, when O'Dell joined them to form the present firm. Former Secretary, Detroit Chapter, A.I.A.

The following article is an excerpt from Mr. Neutra's forthcoming book, Survival Through Design, which deals with the various essentials of a planned environment. The title below, which is P/A's abbreviation, is perhaps unfair in that Neutra deals with temperature, tactile impressions, etc., as well as sensory reactions to odors and sounds.

The Sound and Smell of Architecture

BY RICHARD J. NEUTRA

Architecture has been traditionally conceived in *visual terms*. Our sense receptor for vision, the human eye, is much more highly developed, more sharply focussed than our ear. Compared with its influence on our consciousness, all other sense receptors are weak. Some of them, like the sense of smell, are perhaps not only arrested on a lower level, but definitely regressed and atrophied when compared with the corresponding equipment of lower animals.

Some dogs have dull eyesight. But if they could speak up—after patiently bearing with us for millenniums in caves, in elevated and open neolithic lake dwellings, in tight-walled cities of the Crusades, in farm houses, and in apartments with dumb-waiters and laundry chutes—a history of architecture could be unrolled which would be sensitively flavored by smells and very strikingly different from the one visually pictured in our textbooks.

We must guard against the notion that the only sense perceptions which really count are those which are easily and consciously perceived. On the contrary, one might say that an environmental influence may be particularly pernicious where the consciousness does not correct it. We should therefore pay full attention—and future experimentation will undoubtedly do so—to all the non-visual aspects of architectural environment and design.

As we all know, the acoustics of a theater or assembly hall have become a design factor of the first order, changing shape and surface treatment in a manner which never would have been stimulated by considerations of vision alone. In many cases the intentions of what we may call the Platonic or Euclidean architect, the designer in terms of “geometrically” shaped domes, etc., is counter-crossed and nullified by the acoustical expert. This “classical” architect, we must remember, does not use the terms “geometrical” or “mathematical” according to the modern standards of Minkowsky, Einstein, and others. He uses them always in the rather elementary sense of “easily memorizable” relationships. Even a fraction with several decimals, to him does not belong to “comfortable mathematics.” A square, a rectangle, a circle, or possibly an ellipse, are about the only geometrical shapes permissible. But acoustics do not happen to fit into this straitjacket of special visual prejudice.

If we speak of architecture as an acoustical phenomenon, we have in mind more than audibility of a speaker on the platform or of a singer on the stage. Acoustics affect more deeply the phenomenon of architectural enjoyment itself and the *perception of space within enclosure* (or of voids between buildings).

If we walk through the nave of a medieval cathedral, the impact of our steps on the stone pavement—or perhaps the reverberation of a little cough—becomes in itself or *makes possible* a vital, an essential impression of the architectural space. Such sounds acoustically elucidate also the material specification of the enclosure. Stone walls may echo, while velvet drapes hardly reverberate and signal nothing to the ear.

The sounding ritual during mass *shows up* the church to us. It is an error to believe that this cathedral is here only to “contain” or “house” candles, singing people, a sounding organ. The *sounds illuminate the grand interior acoustically*, just as well as the candles do visually. A design pattern, conditioning sound, makes possible a great part of our architectural perception.

A motion picture set constructed for mere optical consumption by the camera is strangely devoid of the architectural impressiveness of a real cathedral. It is photographically, visually faithful to the original, an object of pride for the stage decorator. But its dull acoustical properties of reverberation, so far removed from the original, make an entirely different effect. In other words, fine visual sets may be acoustically untrue. In the sound picture, the acoustics of a real cathedral are produced separately in an electrically equipped sound chamber, and then synthetically added.

It may be true that the act of hearing, “audition”, penetrates most into our distinct consciousness when we are exposed to articulated words or certain *musical sound patterns*. However, conscious or not, the constructed environment either appeals to us, or harms us as a complex auditory phenomenon, effective from its tiniest reverberations on up. Pitch, acoustical intensities, shocks, repetitiveness of even minute acoustical stimuli; all are factors which the “classical” architect permitted himself to ignore for the sake of a mere visual, static abstraction. The designer of a physiologically conceived and constructed environment can no longer ignore them.

Anyone who travels in Japan notices that Japanese speech and behavior is less noisy, more subdued than the corresponding occidental expression. Japanese children are early trained to delicacy in sound and touch. In a Japanese interior of oiled paper and thin silk, stretched over those incredibly slender frames of cryptomeria wood, an American child seems at once noisy and destructive.

Japanese privacy is based on hushed voices in rooms which are separated temporarily by sliding screens—acoustically not insulated from each other. And this home of theirs, more than ours, is the nucleus of a broad culture, of a complex of living modes intricately dependent on architecture and its specific realities. The subdued chirping sounds of stringed instruments, like the *samisen* and the *goto*, the vocalization of Japanese song and lyrics, are similarly designed *for no carrying distance at all*. Their vibrato, when it occurs, means something entirely different than that of the Italian *primo tenore*, whose singing fits a vast structure of resounding masonry. The Japanese house has no such resounding quality whatever. Its shell consists of silk and paper membranes in *dull tension*, and the floors are heavily covered with thick straw mats on which the feet produce no audible impact.

In a Japanese house a fandango or seguidilla garnished with Spanish castanets would be destructive and would produce an incomprehensible, frustrated turmoil acoustically out of scale—like a

Liszt piano piece played on a concert grand that has its legs on a padded floor. But we must not forget that a Japanese lyrical poem of three short lisped lines, correctly recited to an American after-dinner party in a masonry, fireproofed apartment, with windows vibrating from Park Avenue traffic, would be equally incomprehensible and puzzling.

There are also subconscious architectural associations of smell. The interior of the little red school house, with its cast-iron stove glowing in an unventilated room, and the classrooms of its great successor, the monumental brick box of a metropolitan school district with its wood-trimmed blackboards and oiled or waxed floors, have a peculiar sour smell. Generations of boys and girls have been thoroughly familiar with the "school room smell" which attaches itself to that wooden chalk rail with a wet sponge on it, the lockers loaded with raincoats, and the lunchkit, itself scented by the food it contains.

Books read between smelly high school library cases have olfactory accents which remain emotionally associated with these early experiences in literature. As a matter of fact, odors of the school environment, as of many others, are held in memory and more quickly recognized again in later days than are the *visual* impressions of "architecture."

The hygroscopic cut stone of medieval cathedral masonry has its gaseous exhalations, supported by those of moist microbiotic life, which make ancient interiors recognizable to one with blindfolded eyes. Certain odors do not occur in brightly irradiated rooms, but are indigenous to dark basements. Porous, pervious materials, such as soft wood, flavor interiors quite differently from those where condensations due to temperature drops occur on impervious surfaces, such as marbles or metals.

The smell of a Victorian wood-panelled study might be sensorially more decisive to us than its stylistic profiles, cornices, and mouldings; and it will be different for highly polished lacquered walnut than for waxed oak or untreated redwood or cedar.

The livability of a parlor might be more strongly affected by the smells of upholstery goods, carpet padding, and draperies, than by the visual ornament of imitation Chippendale or Sheraton chairs. The rubber flooring, the enamel paints, spar varnishes, tung oil, the banana smell of certain synthetic lacquers are, without much conscious recording, an inexhaustible array of odorous impressions to be reckoned with in design.

Slums tolerated by some indifferent eyes become offensive to many noses. It is characteristic of the contempt in which this sense is unjustly held, that it passes as ill-bred even to discuss smells. Earlier periods used antidotes of scent in interiors and burned incense to overpower the nose attack of tallow candles or chamber toilets. It remains questionable whether future designers will, by mere negation, content themselves simply to produce abstract *odorlessness* (if this can be done at all). Perhaps they will learn to know the pertinent physiological effects of the exhalations of their structural and finishing materials.

Intimately related to our reception of odors is our sense for the moisture content of the air enclosed in architectural space—and again

for *movement of this air*. The latter sensually caters to cutaneous receptors of lower-than-body temperature, which are activated when evaporation of the moisture film on the skin is accelerated. The degree of this acceleration is sensitively perceived and—through subtle tactile receptors—conveys to us a consciousness of the speed and intensity of air movement. Every constructed interior, down to a simple cross-ventilated living room, is destined, and may well be designed, to have its specific pattern of air currents which normally is perceived by our senses of temperature and of touch.

Our physiological, our nervous equipment, permits us to note the vital difference in nearby wall-forming materials. Some of them seem to absorb the bodily warmth, some are mirrors which seem to reflect our own heat rays. Some are "calorific" like wood, or celotex, or cork, and *store* heat near our shoulder or our back; some speedily conduct it away from us and are cool—not only to the immediate touch.

A designer who places a built-in seat so that there is a concrete wall on one side, a glass surface on the other, and a wood wainscot to the rear of the sitter, *has established a definite pattern of heat loss*. And we must remember various parts of our body have a varied sensitivity to heat losses; the soles of our feet and the dorsal region, the back, have a greater sensitivity than, for example, our chest or head. The head again takes irradiation of heat quite differently than, say, the palm of our hand. Anyone who basks at the beach may painfully learn that much.

One can design a room, its orientation, and material selection so that temperature losses, irradiation, and air currents are salient parts of the scheme. In this way one can achieve a differentiation richer, more pleasant, or possibly more obnoxious, than when a design is merely concerned with visual perception and ignores all other potential aims.

Tactile stimuli have always been recognized as important ingredients in producing responses to architectural environment. Rough masonry on the breast of a fireplace, crudely surfaced, porous softwood, homespun upholstery goods, coarsely woven rugs and blankets—apart from all associations with "rusticity"—will yield quite primary effects profoundly different from smooth, evenly polished surfaces. There is no doubt that detailed experimentation is in order as to how certain tactile stimuli (resiliencies for example) appeal to our finger tips, to the soles of our feet, to our back, and so, in the long run, affect our total nervous system. What are the different physiological consequences of living on a floor of cement or one of sponge rubber? Such detailed experiments would furnish most valuable guides to help us design a well balanced physical environment.

Closing these abbreviated remarks on the participation of numerous senses in the subjective picture which we form of our surroundings, designed or otherwise, we should not fail to emphasize that none of these responses are really independent of the others. On the contrary, they are integrally fused, or at least tightly knit together. There is a perceptual and an emotional combination of sense impressions, which through nerve currents, produce a *generalized consciousness* of the environment, emotionally tinged and flavored from many sources.

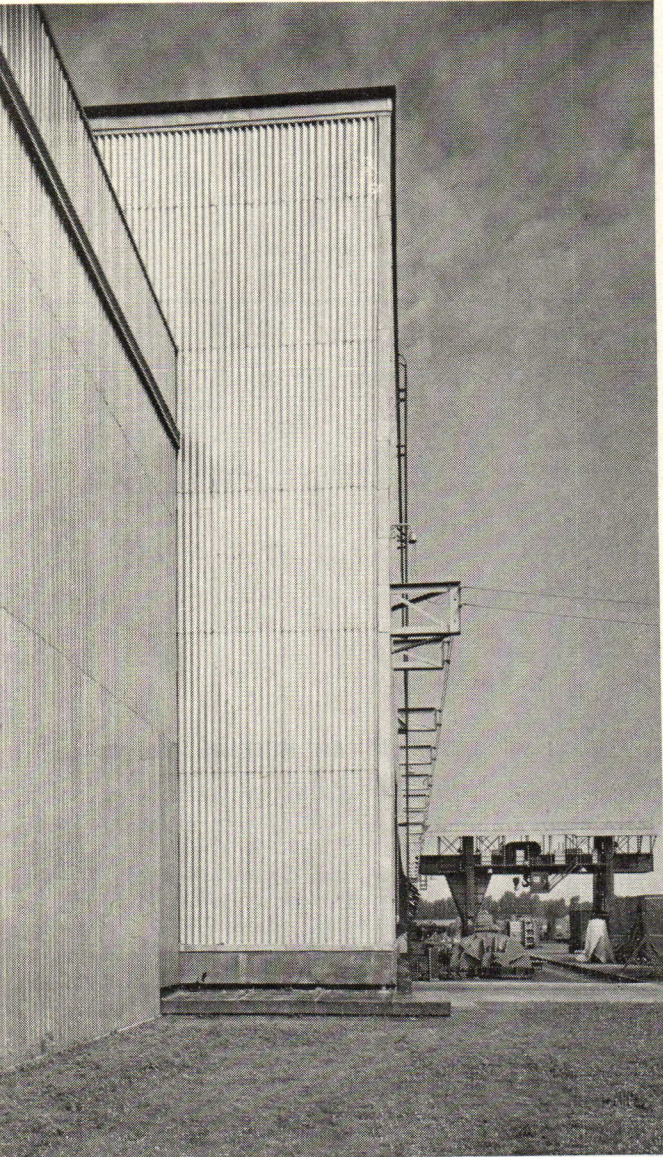
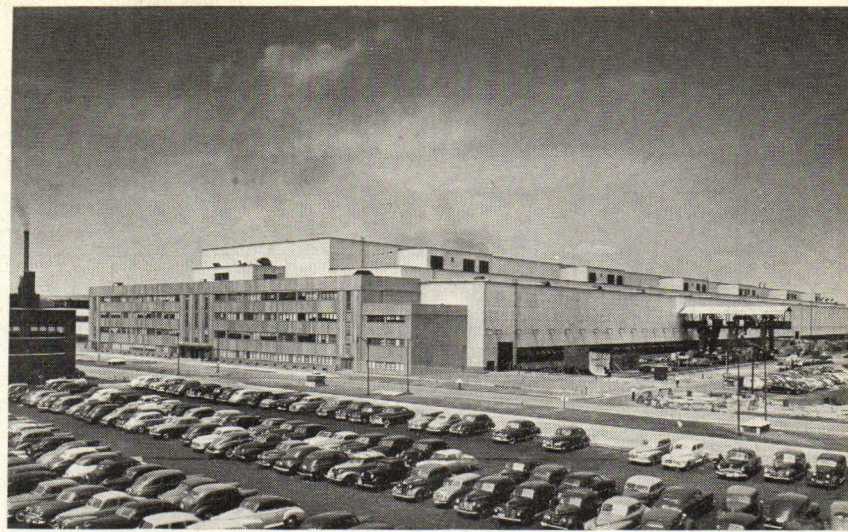


Photo at top right indicates the extent of the total turbine plant—more than a million square feet of floor space; office building at left of picture.

Detail photo, immediately above, shows the point at which the stainless-steel-surfaced curtain wall of the office building unit (left) meets the manufacturing building wall (background) which is surfaced with conventional, metal-protected siding. Photos: Gottscho-Schleisner



Steel Walls for an Industrial Building

STONE & WEBSTER ENGINEERING CORPORATION

This huge turbine plant is an important new unit for General Electric at Schenectady, N. Y. In addition, it represents a notable architectural *first*—the first use of stainless steel in a curtain-wall system. This usage occurs on the four-story office building at the front of the plant.

program:

A plant for the manufacture of steam turbine-generators; an air conditioned office building to house administrative, engineering, and sales offices.

site:

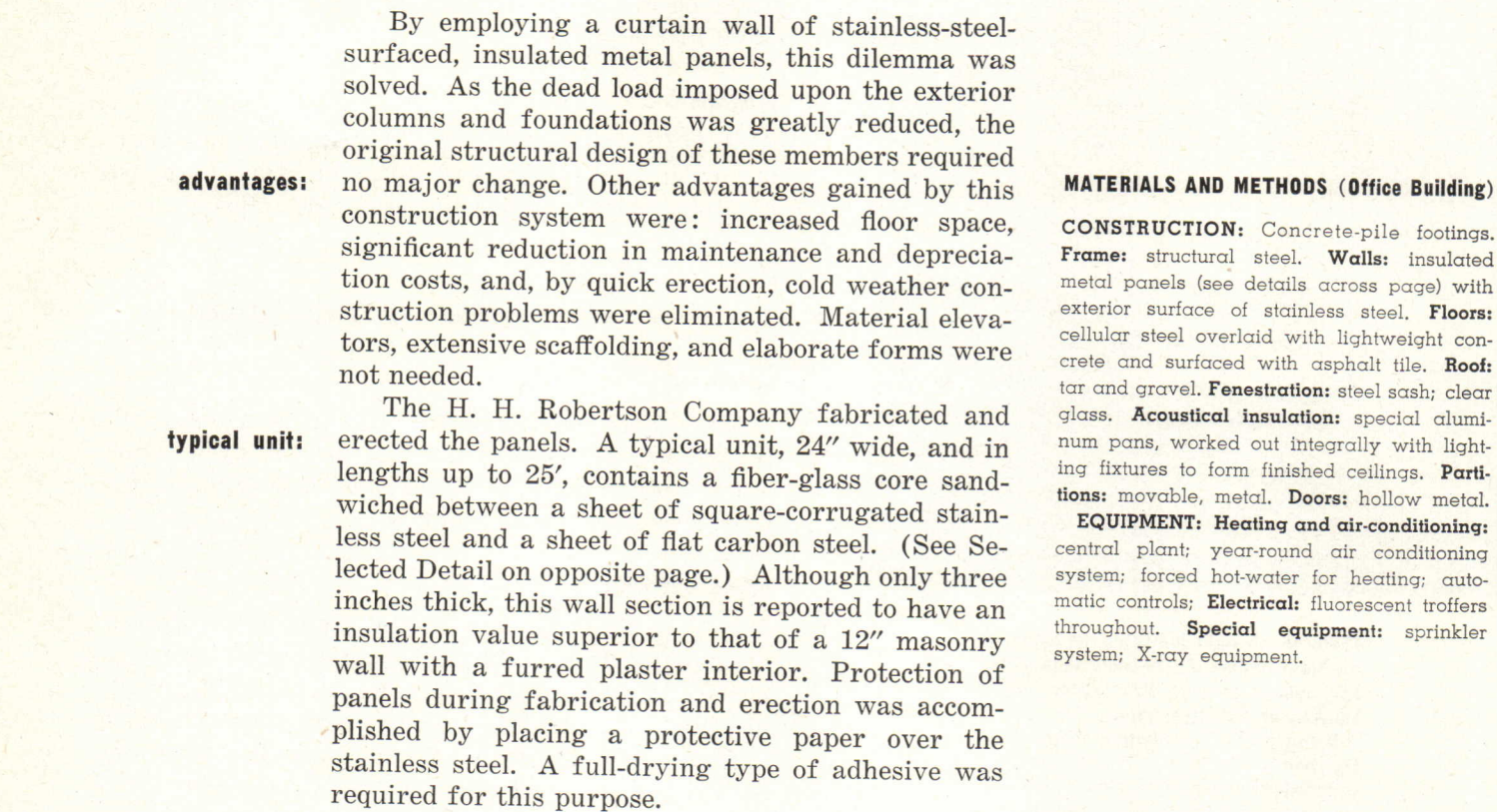
20-acre plot adjoining existing smaller structures.

solution:

A 650' x 1240', one-story manufacturing area consisting of nine manufacturing bays served by a three-story service bay; a 50' x 360', four-story office building on the south front.

office building:

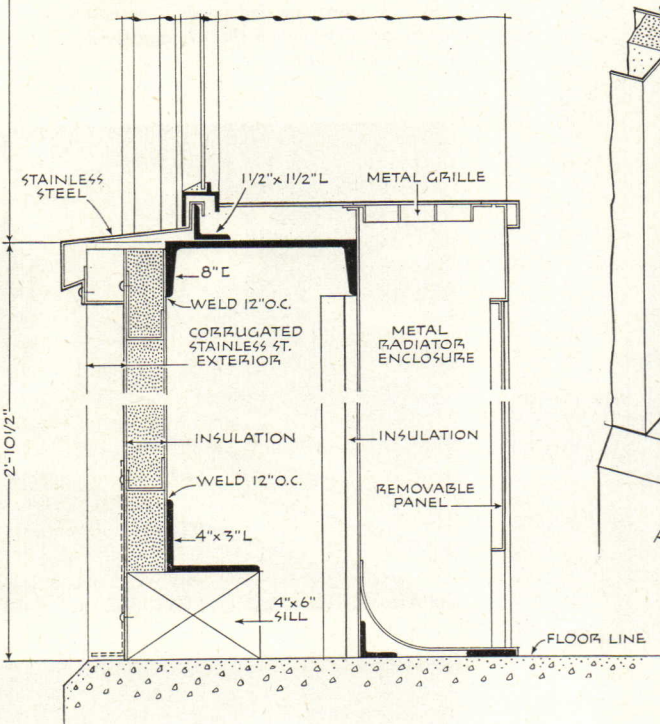
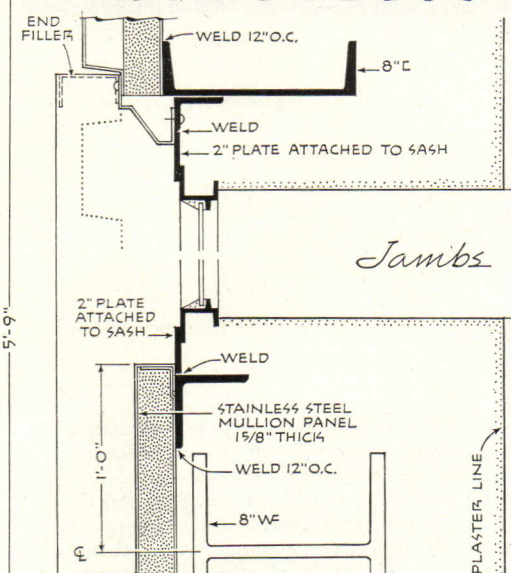
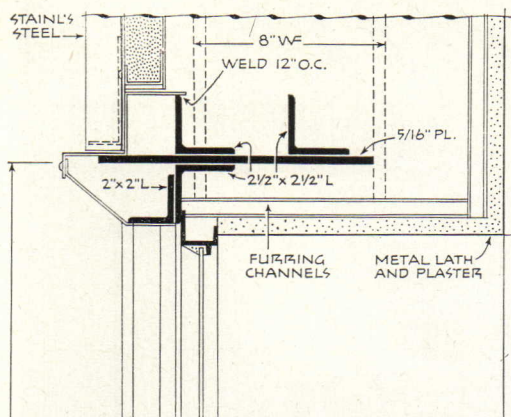
The office building (see typical plans over page) is arranged within a simple rectangle, with offices at either side of a central corridor. The building was originally designed as a three-story structure with masonry exterior walls; foundations had been installed and the steel framing fabricated when it became necessary to add a fourth floor. To do this, and yet salvage the existing foundations and framing steel, some lighter-weight wall system had to be found to substitute for the scheduled masonry.



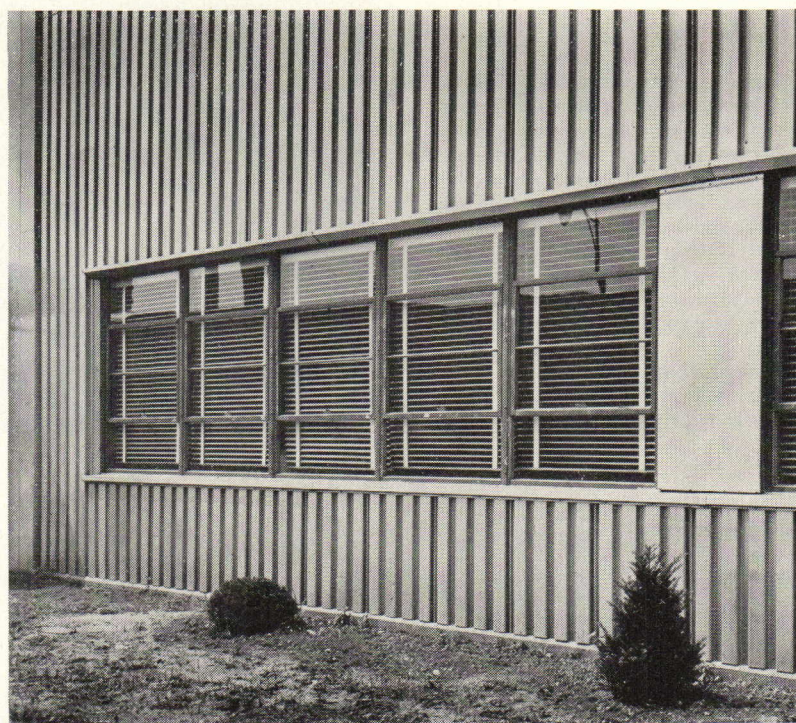
typical unit:

CONSTRUCTION: Concrete-pile footings. **Frame:** structural steel. **Walls:** insulated metal panels (see details across page) with exterior surface of stainless steel. **Floors:** cellular steel overlaid with lightweight concrete and surfaced with asphalt tile. **Roof:** tar and gravel. **Fenestration:** steel sash; clear glass. **Acoustical insulation:** special aluminum pans, worked out integrally with lighting fixtures to form finished ceilings. **Partitions:** movable, metal. **Doors:** hollow metal.

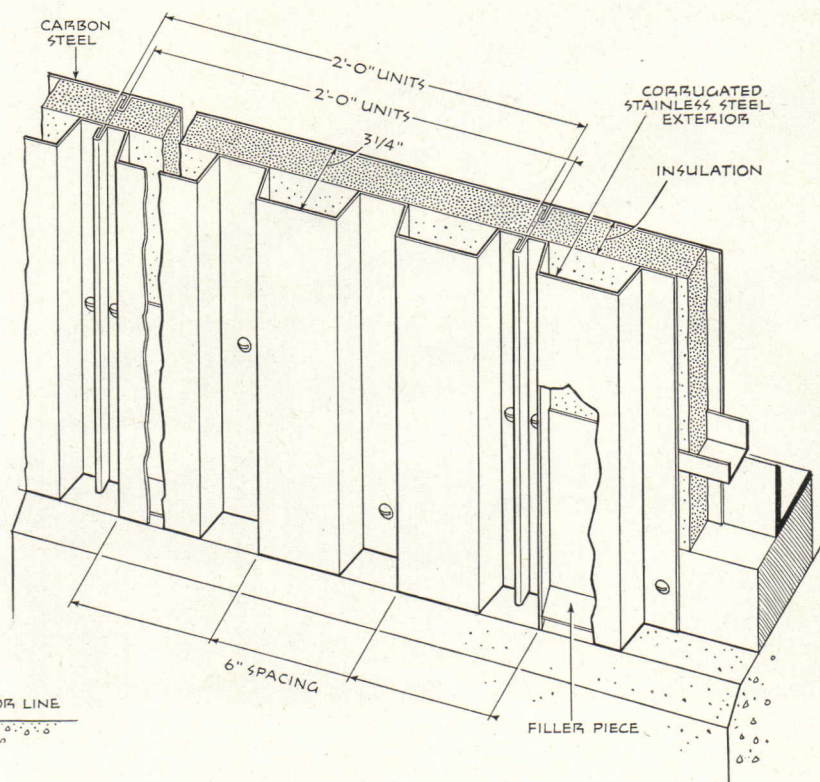
EQUIPMENT: Heating and air-conditioning: central plant; year-round air conditioning system; forced hot-water for heating; automatic controls; **Electrical:** fluorescent troffers throughout. **Special equipment:** sprinkler system; X-ray equipment.



Section thru Wall 1 1/2" SCALE



GOTTSCHE-SCHLEISNER



Prefabricated Wall Units

TURBINE BUILDING, GENERAL ELECTRIC COMPANY
Schenectady, New York

STONE & WEBSTER ENGINEERING CORP.
Engineers and Constructors

Each panel is four corrugations wide and sides have overlapping flanges. Opposite ends of each unit are sized and die set so that, when assembled vertically, an overlap provides protection against weather. Allegheny Ludlum Steel Corporation supplied the stainless steel which contains 18 percent chromium and 8 percent nickel. The high yield and tensile strength of this material affords resistance to wind-loading, sagging, denting, scratching, and spalling.

Photo at right shows two panels that have been joined laterally and cut to accommodate a window opening.

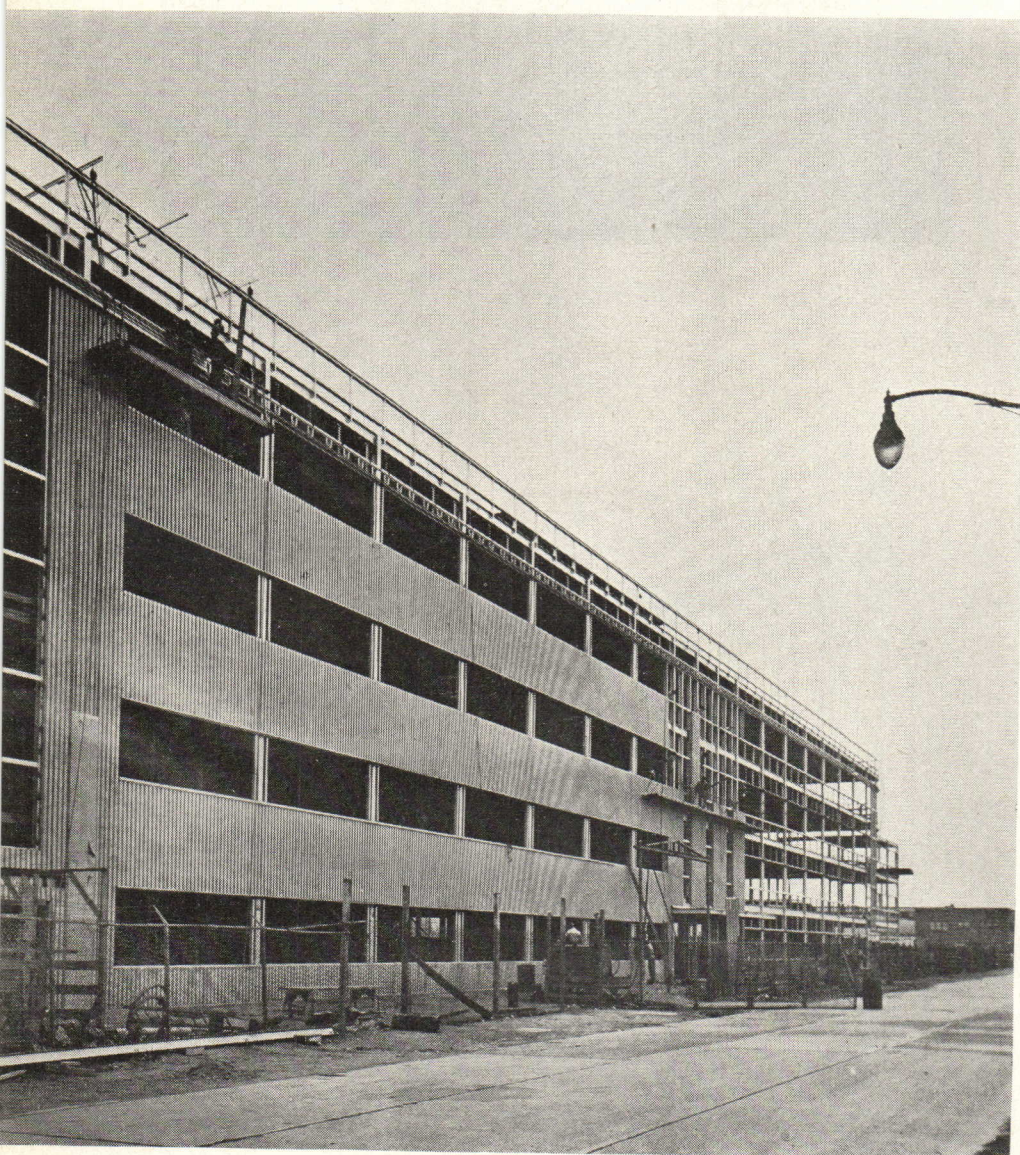
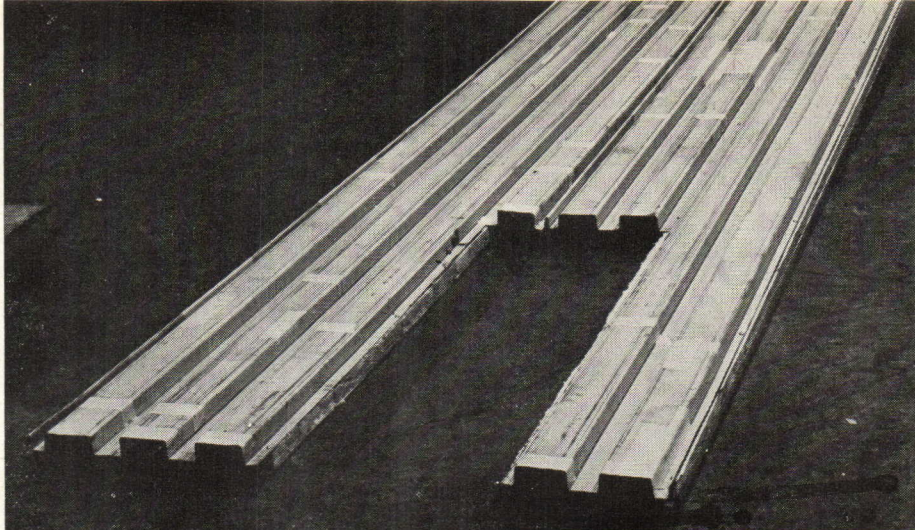
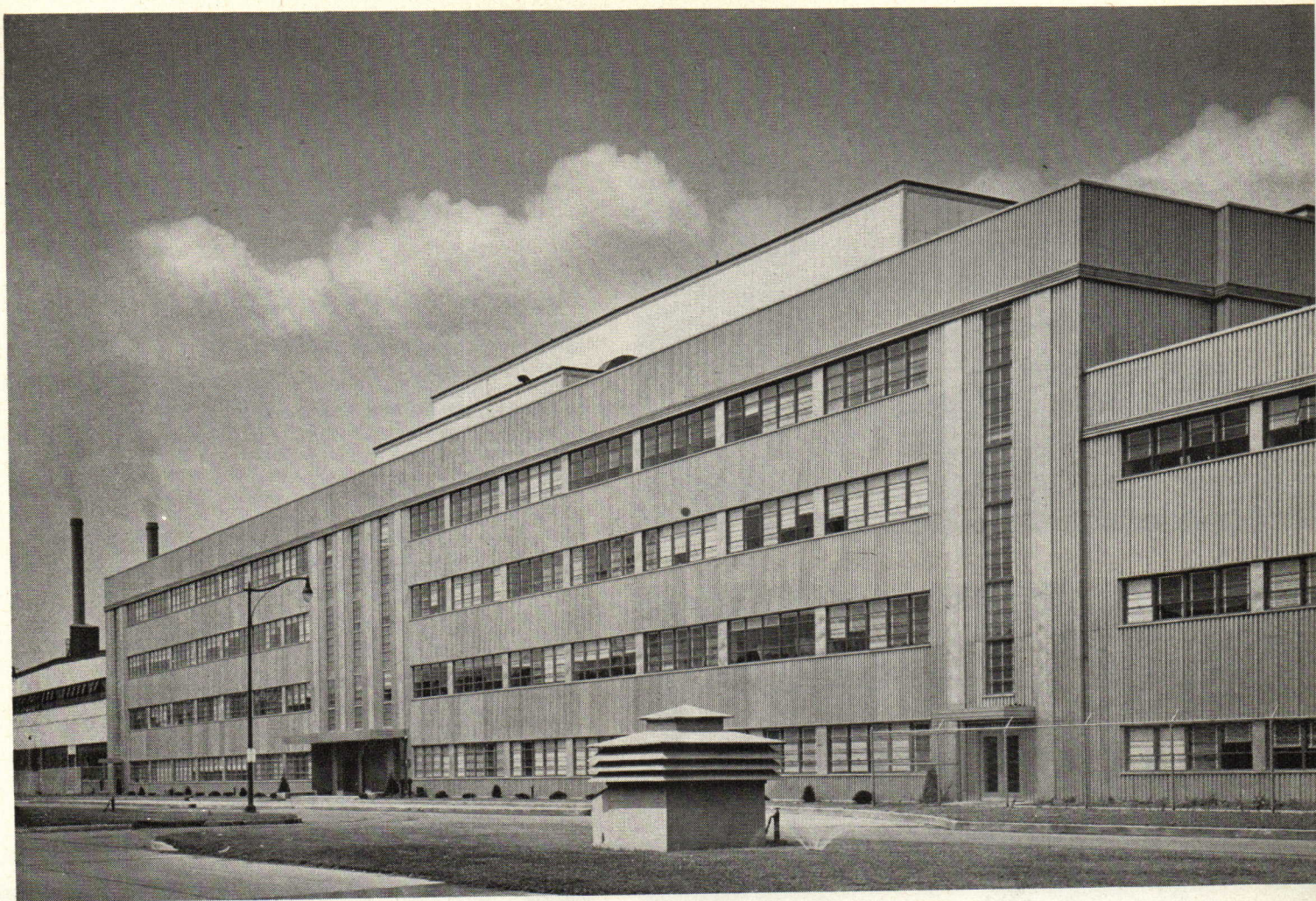


Photo at left, taken during construction, shows simple erection method which required no material elevators.

Photos below, picture a final step in the fabrication process and placement of the fiber-glass insulation. After testing a large expanse of wall, including side and end joints, an independent research laboratory determined the average U factor to be .14 Btu.



INDUSTRIAL BUILDING: SCHENECTADY, NEW YORK



The pilasters were applied over the surfacing of corrugated stainless steel (see construction photograph on facing page). At either end, these at least mark the location of stair wells; in the center, they merely carry upward the entrance motif on the ground floor; office areas on upper floors are actually continuous between stair towers.

Photo at right indicates the coordinated layout of lighting and acoustical elements, the finished, suspended ceiling being made up of aluminum acoustical pans supported on the lighting troffers.



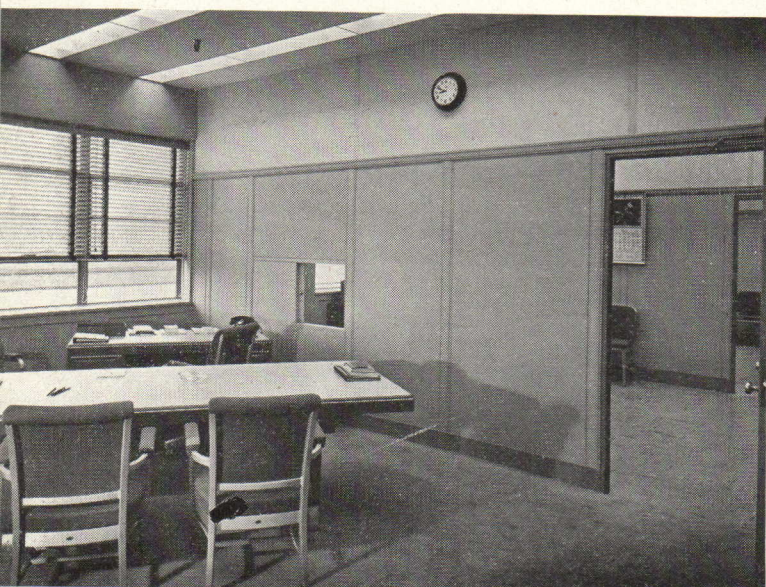


Photos at left: top—the general work area of a department. The fluorescent lighting system provides from 50-60 maintained foot candles.

Center—departmental offices, divided by movable, glazed, metal partitioning.

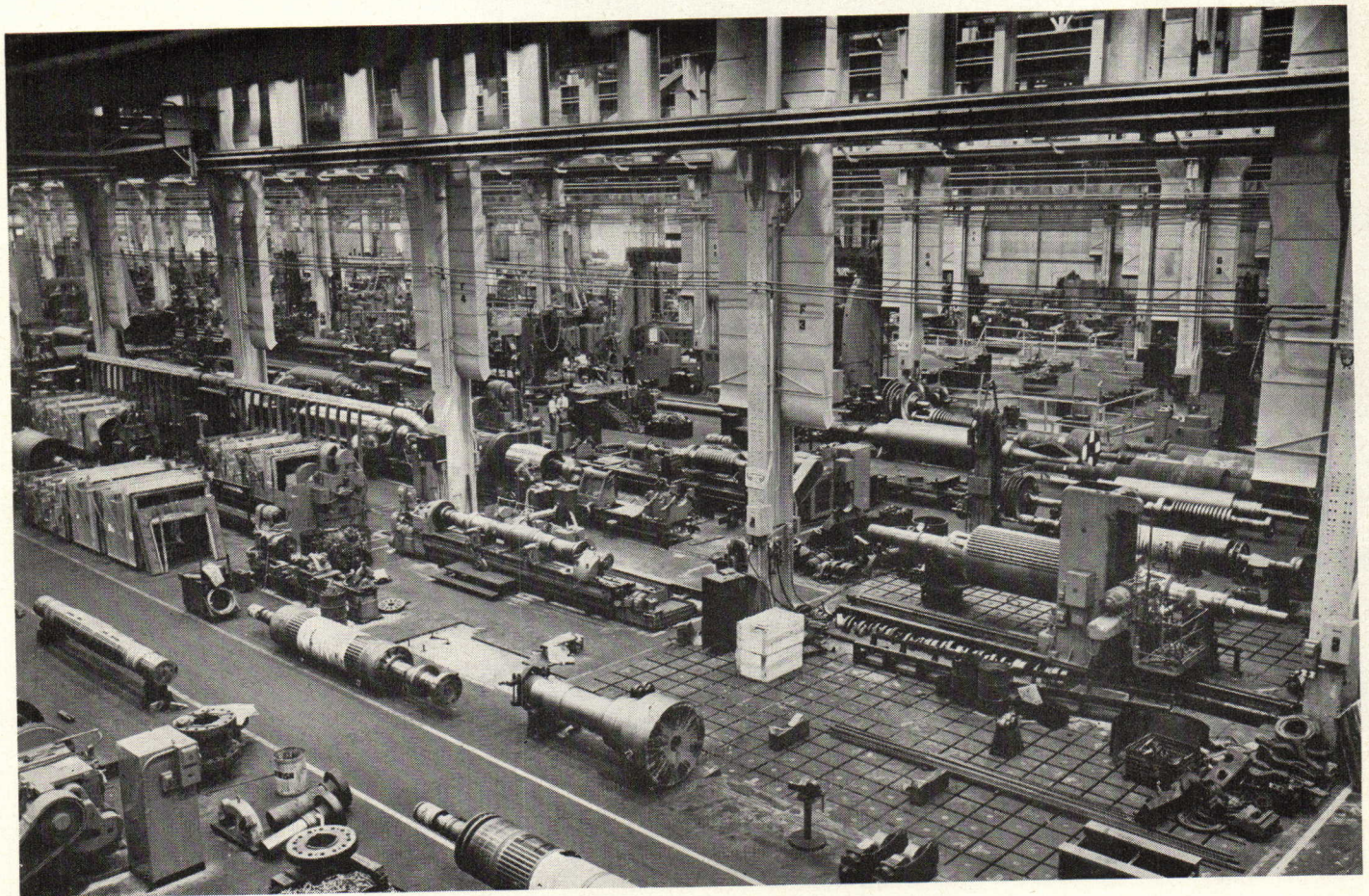
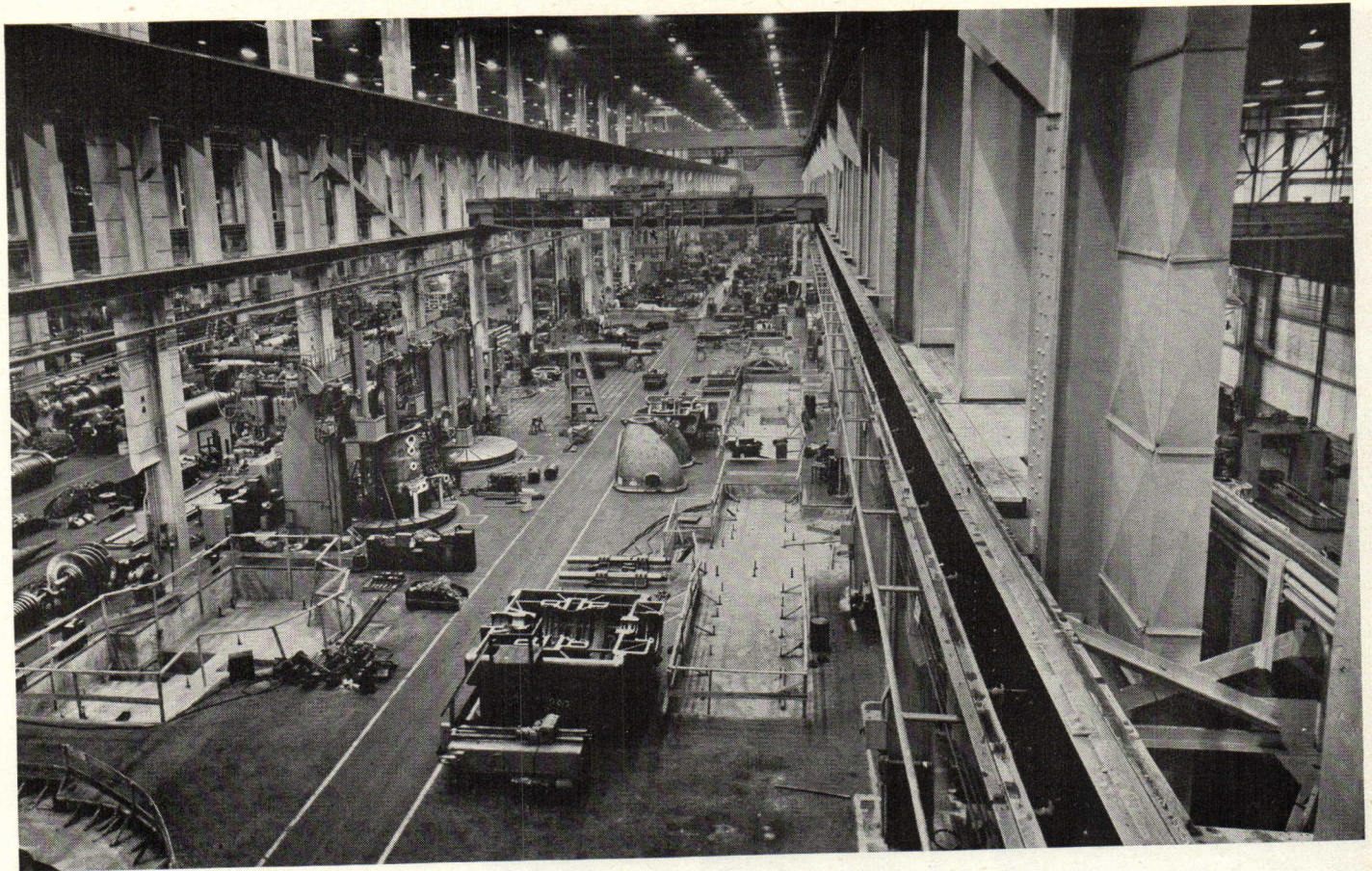
Bottom—an executive's office, with sliding-panel pass window, in partition between this room and secretary's office.

Photo below: conference room, with windows and a door opening onto a balcony overlooking the manufacturing area (photograph at top of facing page was taken from this balcony).

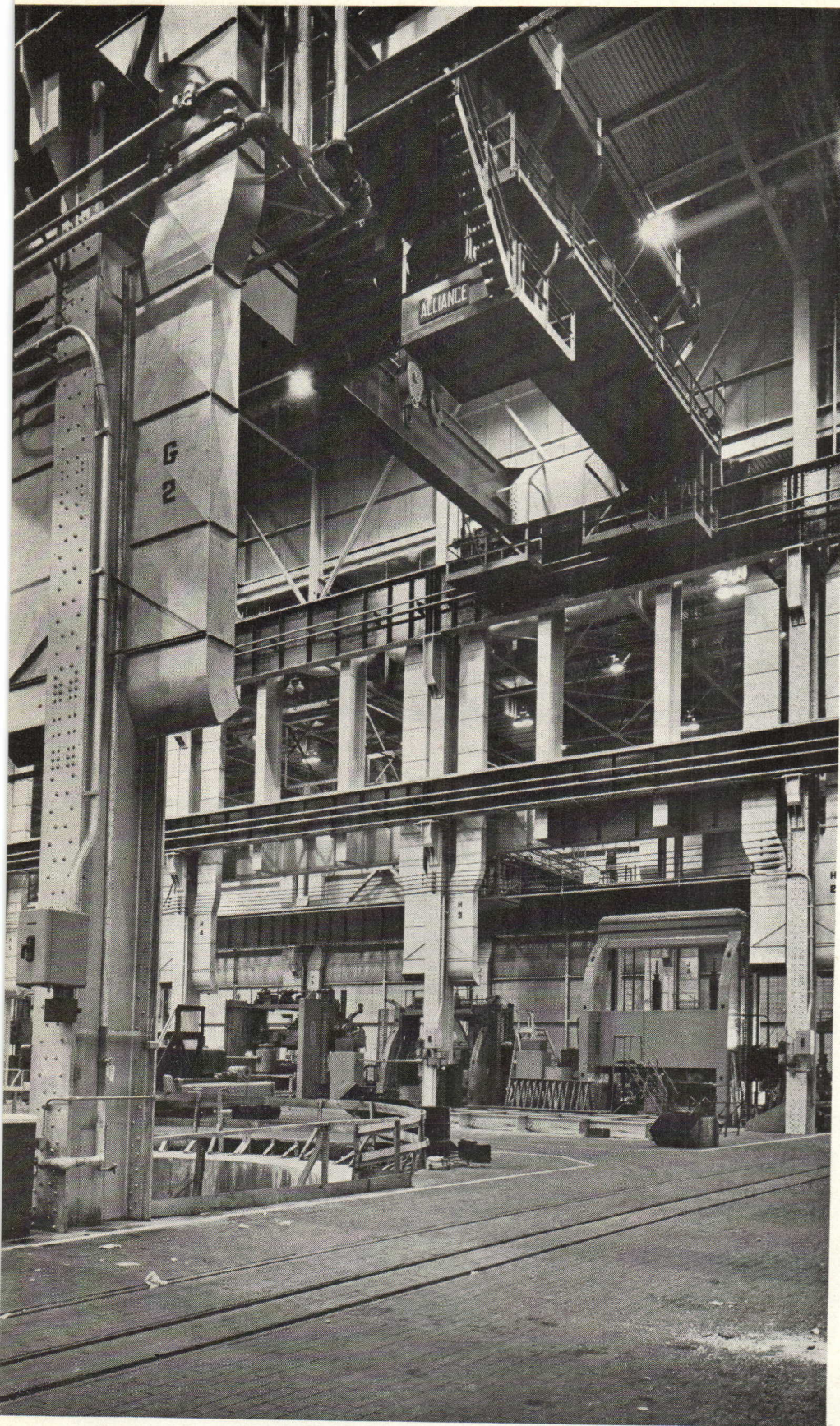


Photos across page: views within the manufacturing area. Photo at top looks along one of the 80-foot-wide, 90-foot-high bays. Two craneways span the bay—the upper one almost 62 feet above the floor, supports a crane of 200-ton capacity; the other one, 24 feet lower, is for cranes carrying loads up to 100 tons.

INDUSTRIAL BUILDING:



SCHENECTADY, NEW YORK



Because the plant is partially built over a filled-in backwater of the Mohawk River, the entire structure and most of the manufacturing floor are supported on piles; in the case of the heavy-crane runways, steel piling extends from 80 to 140 feet below ground surface; in other parts of the heavy manufacturing area, the floor rests on a 16-inch mat of reinforced concrete supported on steel H-piles seven feet below the operating floor level. Manufacturing floor surfacing is of two-inch wood blocks. In this portion of the plant a lighting intensity, of from 35 to 45 foot candles at work height, is provided by fixtures located at the level of bottom chords of roof trusses. Ventilating fans located on the third floor of the service bay and in roof penthouses provide fresh air throughout the manufacturing area through aluminum ducts (either side of structural columns in photo). Heaters provided in connection with the fans furnish warm air during the heating season.

MATERIALS AND METHODS (Manufacturing area)

CONSTRUCTION: **Frame:** structural steel. **Walls:** concrete up to sill height; 10 feet of sash; V-beam protected metal siding and prefabricated cement-surfaced asbestos board. **Floors:** concrete, surfaced with creosoted wood block. **Roof:** tar and gravel. **Fenestration:** pivoted steel sash. **Partitions:** hollow tile. **Doors:** hollow metal; rolling steel.

EQUIPMENT: **Heating:** company steam supply; general heating and ventilating; centrifugal fans; controls. **Lighting:** both incandescent and mercury mazda. **Special:** sprinkler system.

INDUSTRIAL BUILDING: SCHENECTADY, NEW YORK



Proper installation of insulations, vapor barriers, means of ventilation, and summer heat controls helps create completely comfortable living conditions in residences during all seasons of the year. In Part I of this article the author discusses the problems and solutions of thermal control and condensation in roofs and attics. In Part II, which will appear in the December issue of P/A, attic ventilation, white roofs, and water-cooled roofs will be analyzed. Although they contribute equally to climate control in homes, the requirements of exterior walls and foundations have been excluded from this review.

Weather-Conditioning of Roofs for Residences: Part I

BY GROFF CONKLIN

One of the most controversial and confusing aspects of modern home design is the achievement of control over the relation between exterior and interior climates the year round. This is a problem with which every architect must cope, whether he is designing a luxury residence or a five-room bungalow. It should be stated at the outset, that the exclusion of foundations and exterior walls from this review does not mean that these components of the dwelling are not as integral a part of the climate control problem as they are of the house itself. However, the roof and the attic below it present a number of special and complex technical questions which do not necessarily enter into the design of the rest of the house, and for this reason they must be considered as a separate and distinct part of the over-all problem. Traditionally, a home used to be considered well-built if it offered complete protection against the entry of wind, rain, snow, and dust, was sturdy and durable in materials and in construction, and barred entry to the more obvious hazards of the living external environment such as insects, rodents, and human prowlers. Such construction was accepted as the best that could be had by even the wealthiest client. The concept of the house itself as an *active* protection against winter cold and summer heat was unheard of. One heated the dwelling with a furnace, and if half the heat escaped through the roof and walls that was an unavoidable and universally accepted part of home operating costs. In summer one opened the windows, used palm-beach fans, and drank cool drinks to combat the sweltering heat; the owner of an all-stone house thought himself fortunate because the walls did help to keep the interior somewhat cooler than those of a frame house. In all types of dwellings the attic was always an efficient summer heat trap.

With the advent of modern insulating materials the whole art and science of residential design and construction took a revolutionary turn, bringing with it a number of problems that even today baffle a considerable

portion of the profession. It is difficult, actually, to realize how recently both "convection insulation" (an excellent term used by C.-E. A. Winslow, Yale School of Medicine, for bat, blanket, or fill-type insulating materials), and reflective or radiation insulation have become standard parts of house construction. As recently as 1933, Bemis and Burchard, authors of a three-volume work called *The Evolving House* (published by Massachusetts Institute of Technology), in describing "suburban construction," referred only in passing to "lath . . . of heat-insulating material to cut down the fuel bill." They omitted all reference to insulation in their index, and showed in their wall cross-sections an empty air space between outer and inner surfaces of the structure.

Today, however, hardly a house is built, at least in the northern parts of the country, without some sort of insulation against cold. America's home buyers have become accustomed to demanding it in the attic and walls of the dwellings they purchase. For, even considering its defects and the maintenance problems which often follow upon poorly-designed and haphazardly installed materials, insulation always results in sizable savings in heating costs.

But insulation can be a much more effective barrier against cold and heat than it usually is today. In winter, the extremely serious difficulties caused by moisture condensation behind insulation may be to all intents and purposes eliminated by up-to-date materials and construction practices. In summer, the control of the sun's radiant heat by use of reflective insulation, either alone or in combination with the convective type, can help to create genuinely comfortable living conditions during even the hottest spells.

It is the purpose of this article to describe the various ways in which these goals may be attained through the correct design and installation of different types of insulation, vapor barriers, means of ventilation, and certain special elements having particularly

to do with summer heat controls in the attic and the roof.

Let us consider then the essential components of a well weather-conditioned roof. No problem presents itself, of course, in designing roof structures to withstand the *force* of the elements. The problem is not one of strength, it is, rather, one of thermal control.

Insulation

The first and most important factor in a weather-conditioned roof is its insulation, and here it is that one finds some of the most violent controversy in the building industry. The issue at base revolves around the question whether convective insulation with vapor barrier, reflective insulation with adequate "dead air" spaces, or a combination of the two, is the most efficient and, in the long run, the most economical method of stabilizing the exterior-interior temperature and moisture relationships in regions of wide climatic variations.

Bearing in mind that laboratory tests may be inaccurate reflections of the actual performance qualities of a material, the following data may still be studied with some profit:

1. From Wilkes, Hechler and Queer, *Transactions of the American Society of Heating and Ventilating Engineers*, Vol. 46, 1940, come these figures for the U-factor, or over-all coefficient of heat transmission in typical roof and wall constructions containing two layers of reflective insulation. The insulation material consists of one layer with aluminum foil on both sides, and a second layer foiled only on one side. Thus, in a roof with 8" rafters, there are three reflective surfaces, with a 2.7 inch air space between each layer, as well as between the top layer and the roofing, and the bottom layer and the lath and plaster (see Table 1). The first test, for a horizontal roof, gave U-factors of 0.11 and 0.12 for upward-moving heat, and 0.05 and 0.06 for downward-moving heat. The second test for a similar construction

	Heat flow	U	C ₁	Temperatures ΔT for C ₁
First test	Up	0.11	0.16	25
		0.12	0.17	45
	Down	0.05	0.06	25
		0.06	0.07	45
Second test	Up	0.11	0.14	25
		0.12	0.17	45
	Down	0.07	0.09	25
		0.08	0.10	45
Third test	—	0.08	0.12	Air Temperatures
		0.08	0.11	70 30
	—	0.08	0.12	70 100
		0.08	0.11	70 100

U, transmittance of roof or wall
C₁, conductance of air space, plaster base to sheathing
The U values shown are for an inside surface coefficient of 1.65 and an outside coefficient of 6.00, corresponding to a 15 mph. wind.

TABLE 1: ROOF AND WALL COEFFICIENTS WITH ALUMINUM INSULATION.

From "Transactions A.S.H.V.E., Vol. 46, 1940."

tilted 30° from the horizontal to simulate a pitched roof, gave U-factors for upward heat flow which were the same as for the horizontal panel. For downward heat flow they were 0.07 and 0.08—slightly higher than for the horizontal section. The third test was for a vertical wall section constructed to simulate a standard wall in a frame house. Here the U-factors were 0.08 and 0.08, there being no "upward" and "downward" to contend with.

2. From Rowley and Lund, *Transactions of the American Society of Heating and Ventilating Engineers*, Vol. 49, 1943, have come these U-factors for walls with 2" x 6" joists, mineral wool bat insulation, and an inner face of 3/8" gypsum plaster board. With nominal 3" bats, measured thickness of 2.646" and density of 2.24 lbs. per cu. ft., this wall held horizontal had a U-factor of 0.106 for upward moving heat; held vertical, a factor of 0.102. In both tests a bat with a vapor barrier on one side was furnished. With nominal 4" bats with vapor barriers, actual measured thickness being 3.89" and density of 2.99 lbs. per cu. ft., a U-factor of 0.084 was obtained for upward moving heat, and a factor of 0.088 when the wall was held vertical.

These figures indicate that for the samples tested there was relatively little to choose between the convective and reflective insulations for upward and laterally moving heat. For downward moving heat, however, it will be noted that reflective insulation possesses a remarkably low overall coefficient of heat transmission.

Today there are available regular reflective insulations consisting of either two or three layers of pure aluminum foil, reflective both sides, and separated by air spaces. They are designed so that when the strips are installed the layers are between 1" and 2" apart. The U-factors claimed are at least equal to

those found in Table 1. Reflective foil combinations, when correctly made and installed, have something of a future in the insulating business, particularly as a means of controlling summer temperatures inside the house as well as efficient and adequate winter insulation.

There are a number of considerations which the architect must regard in selecting an insulation. Here are some of those affecting reflective insulation:

1. According to Wilkes of Massachusetts Institute of Technology, a normal layer of dust on the surface of a reflective foil does not materially decrease its insulative value. The infrared rays, which make up most of the radiant heat one wants to keep in the house in the winter and out of the house in the summer, are reflected back nearly as efficiently with the layer of dust present as without. Consequently, the dust that may settle on the reflective foil in an attic installation is inconsequential in its effect on the material's insulating value.

2. Reflective insulating foils are at one and the same time nearly perfect vapor barriers, according to Dill of the Bureau of Standards and various other responsible scientists. No other barrier is needed. (See vapor barriers discussed further on in this article.)

3. However, if aluminum foil comes in contact with wet plaster or mortar it corrodes easily. Consequently, care must be taken in installing this insulation to keep it from contact with such materials. The insulation should be installed between framing members, and not across their faces, if a plaster surface is to be added as an inside finish. This may involve a somewhat higher labor cost.

4. The heat storage capacity of reflective insulation is low. As a result, it does not store heat during summer days, only to pass

it on down into the rooms of the house from the attic at night when coolness is most apt to be desired from the point of view of sleeping comfort.

The conclusion from these various facts is that, at least as far as present knowledge goes, reflective insulation is one of the essentials for a weather-conditioned house in a region that has hot summers. Whether it is as good, or better, than the convective insulations for winter use is still to be ascertained by scientific testing on comparable bases, and by actual practice in occupied dwellings. Convective insulations, with their extremely small reflective insulating values, are not as effective in reducing summer heat.

Some of the considerations, in the case of convective insulations in general, which the architect should bear in mind follow:

1. The cost factor in most standard mineral wool and fiber insulations may tend to make them preferable, at least for the time being, to the reflective type, though the prefabricated aluminum foil units described above are claimed to be competitive in price with mineral wool insulation of the same C-factors and a good vapor barrier on one side.

2. Installation is likely, at present, to be less expensive as well, since mechanics are more accustomed to working with these materials than with the reflective insulations. No care has to be taken to suspend the convective insulations so they will not make contact with the inner or outer layers of the structure, as has to be done with the reflective insulations if they are to be of full value.

3. The propensity of convective insulations to absorb heat markedly reduces values as insulations for summer comfort, making them considerably less effective for this purpose than aluminum foil and other reflective surfaces.

4. Certain types of convective insulations,

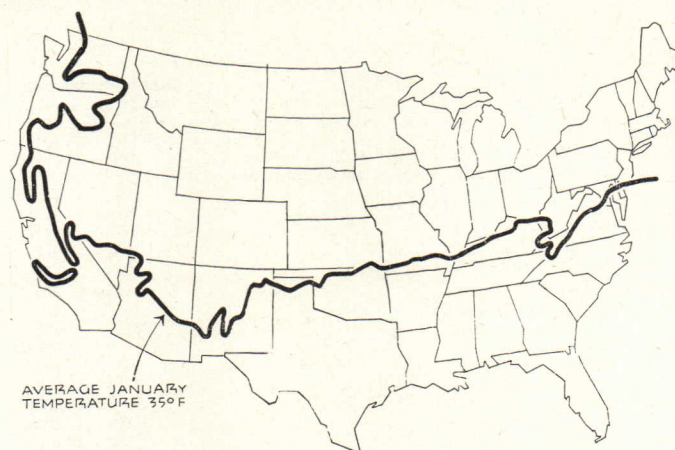


Figure 1 above: to prevent winter condensation problems in areas where the average January temperature is 35 F or lower vapor barriers should be installed in all new houses at the time of construction. (Diagram from Report R1710, U. S. Department of Agriculture, Forest Service, Forest Products Laboratory.)

Figure 2 below: temperature conditions prevailing in attics of three occupied houses during February 1947. All attic floors insulated, that of House B included a vapor barrier. (Chart from Housing and Home Finance Agency, Technical Bulletin No. 8.)

though not all, absorb and hold moisture with increasing interior relative humidity and falling exterior temperatures. They thus lose much of their insulating value. Furthermore, this moisture accelerates compaction of the "three-dimensional" insulations which depend on minute air spaces in their cross-sections for their effect. This further decreases their efficacy as time passes and parts of the house become to all intents uninsulated. Vapor barriers, of course, will slow down or actually stop this tendency.

Vapor Barriers

There can be few architects today who are unaware of the existence of the problem of moisture condensation in insulated homes. Many thousands of dwellings built and insulated in the early years of the use of the material have developed serious trouble due to condensation. It was not understood in those days that insulation made it difficult, if not impossible, for a house to "breathe" in the winter. The average uninsulated house maintained its own safe humidity-temperature ratio by the simple method of pushing the dewpoint outside of the walls and the roof. The heat of the dwelling went clear through the structure, and where it met the cold, either in the very outer layer of the roof or wall, or on their surface, its moisture condensed into water droplets. Since the water was outside the building, it did no lasting harm though it was often rather rough on the paint. Of course condensation does occur in uninsulated homes, particularly around windows, but it is by no means as severe a problem as it is in the tightly built, well-insulated, high-humidity homes of today.

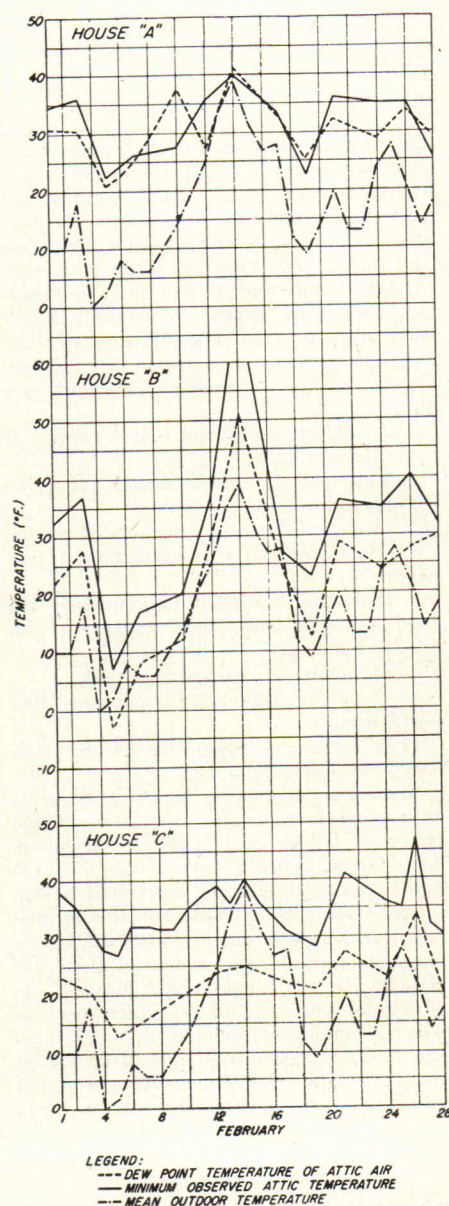
In the latter type of dwelling, the meeting-place of warm and cold is moved inside the house, usually somewhere in the outer layer of the insulation or between the insulation

and the sheathing. The vapor then collects inside the attic or the wall and the result is plenty of trouble. Wet spots on the ceiling or the walls as the moisture flows down from the cold attic space; falling plaster as an end result; constant and repeated paint failures on the outer walls and gable-ends; and rotting rafters, joists, studs, sheathing, and shingles or siding; these are the only too common and costly results of the over-insulated, under-moisture-proofed home.

The easiest solution, of course, is the inclusion of a good vapor barrier when the house is built. Today in all parts of the country north of what is known as the 35° January isotherm—that line across the southern part of the United States north of which average January temperatures are below 35° (see Figure 1)—vapor barriers should universally be installed in all new dwellings, insulated or not.

A well-known test made by the Forest Products Laboratory and the Housing and Home Finance Agency in 1947 showed that even without attic or other roof ventilation a good vapor barrier could keep moisture conditions in a fill-type insulated attic below the danger point for condensation (see Figure 2). The report, which is full of interest for architects practicing in the central and northern parts of the nation, is contained in the Housing and Home Finance Agency Technical Bulletin No. 6, and also in No. 8, which is an especially valuable issue in which several technical reports from previous issues were reprinted.

It cannot be overemphasized that a vapor barrier is an absolute essential in modern homes. A series of laboratory tests made by the Forest Products Laboratory and the University of Wisconsin also in 1947, and summarized in their Report No. R1710, *Remedial Measures for Building Condensation Difficulties*, shows that any barrier which



Material	Loss in grains per sq. ft. per hour	
Foil-surfaced reflective insulation (double faced)	0.066 -	0.136
Roll roofing—smooth surface—40 to 65 pounds per roll of 108 square feet	.068 -	.864
Asphalt-impregnated and surface-coated sheathing paper, glossy-surfaced, 35 to 50 pounds per roll of 500 square feet	.158 -	.727
Duplex or laminated papers 30-30-30	.487 -	3.530
Duplex or laminated papers 30-60-30	.357 -	.512
Duplex papers reinforced	.574 -	4.440
Insulation backup paper	.620 -	10.520
Gypsum lath with aluminum foil backing	.132 -	.238
Plaster—wood lath	—	7.90
Plaster—3 coats lead and oil	2.650 -	2.770*
Plaster—3 coats flat wall paint	—	3.080*
Plaster—2 coats aluminum paint	—	.831
Plaster on fiberboard	—	14.800
Plaster on gypsum lath	—	13.850
Tarred felt	9.200 -	12.830
Asphalt felts	2.380 -	12.840
Plywood—1/4" Douglas-fir, soybean glue, plain	3.080 -	4.620
2 coats asphalt paint	—	.308
2 coats aluminum paint	—	.930
1/2" 5-ply Douglas-fir	1.920 -	1.975
1/4" 3-ply Douglas-fir, synthetic-resin glue	3.080 -	4.620
1/2" 5-ply Douglas-fir, synthetic-resin glue	1.975 -	2.420
Insulating lath and sheathing—uncoated	18.50 -	24.65
Insulating sheathing, surface coated	2.19 -	3.05
1/2" and 1" blanket insulation between coated papers	1.380 -	1.440
4" mineral wool—unprotected	—	20.950

Table 2 left: comparative resistance of various materials to vapor transmission. Many of the materials were tested under actual exposure conditions in laboratory test-house wall panels.

*The test method used was apparently too severe for paint films because the high concentration of moisture had a tendency to destroy the resistance of the film to vapor movement. Wall tests under service conditions show that paint films have a much higher resistance than is shown by the values listed in this table. (Table taken from Report R1710, U. S. Department of Agriculture, Forest Service, Forest Products Laboratory.)

has a vapor transmission coefficient of one grain or less of moisture per hour per square foot will usually (but not always) keep the moisture content of the sheathing in the attic and walls below the danger point for decay. This danger point is stated to be a moisture content of more than 15 percent. The laboratory lists seven types of materials which make adequate vapor barriers, some of them only under average rather than extreme conditions of relative humidity and temperature differentials:

1. Asphalt-saturated and coated papers, 35 to 50 lbs. per sq. ft.
2. Roll roofing, smooth-surfaced, 45 to 65 lbs. per roll of 108 sq. ft.
3. "Some of" the asphalt-laminated papers.
4. "Some, but not all," insulation back-up papers.
5. Reflective insulation of aluminum foil good both sides, and "some of this type with reflective coatings."
6. Aluminum foil-backed rock lath.
7. "Some of" the asphalt-laminated fiberboard lath.

(For a more complete list of materials tested see Table 2.)

Aluminum foil had by far the best rating as a vapor barrier. The vapor transmission factor of foil-surfaced reflective insulation, double-faced, ranged from 0.066 to 0.136 water grains per hour per sq. ft. Roll roofing ranged from 0.068 to 0.864; asphalt-saturated and coated papers from 0.158 to 0.727; other materials ranged from a low of 0.357 for "Duplex or laminated paper, 30-60-30," to 10.520 for one type of insulation back-up paper. Unprotected mineral wool 4" thick had a vapor transmission rate of 20.950, as compared with only 7.90 for a straight plaster and wood lath construction with a "dead

air" space between inner and outer surfaces.

The lesson in all this is that architects must assure themselves by impartial tests that the "vapor barriers" sometimes offered on the market as parts of insulating bats or blankets or separately, actually have sufficiently low vapor transmission value. Reflective foil insulations, of course, are themselves nearly perfect vapor barriers when correctly installed.

Vapor barriers must always be placed as near as possible to the inner face of the rafters, the ceiling joists, and the walls, and *always* on the side of the insulation facing into the house not the side facing out. As the FPL report R1710 put it, with vapor seals so placed "the temperature of the barrier will always be above the dewpoint temperature of the room, in which case no condensation will take place on the barrier," or beyond it. In new construction, this means that the vapor barrier should be immediately behind the plaster lath or the drywall surface. Since it is impossible to plaster against a vapor barrier because of the impermeable nature of the material, it must naturally be on the outer face of the lath or on the inner face of the insulation.

Barriers must be as nearly airtight as possible, particularly along the joints between them and the rafters, joists, or studs to which they are fastened, to prevent moisture condensation on these structural members. Many manufacturers recommend that bats or blankets with self-contained vapor barriers be stapled or tacked every two or three inches, care being taken to prevent gaps between the fasteners. Similar precautions should be taken with reflective insulations and with separate vapor barriers. Perhaps the most foolproof method of installation,

though more costly, is to fasten the flange of the material to the sides of the structural timbers with ordinary wood lath and two-penny nails, thus assuring a uniform tight closure.

Particular care must also be taken to guarantee a similarly tight joint between rafter or ceiling joist vapor barriers and wall vapor barriers. The best practice is to lap the two widely at the top plate. This is the only safe way to prevent water vapor in the attic from descending into the walls at the eaves and condensing behind the wall vapor barrier.

When loose-fill insulation is used in attic floors it is, of course, essential that a trustworthy vapor barrier of some sort be laid against the topside of the ceiling lath before the insulation is placed. This barrier should be stapled or tacked to the lower sides of the joists to form a tight, self-contained vapor shield.

Furthermore, according to Wilkes and Vianey, in the *Transactions of the American Society of Ventilating and Heating Engineers*, Vol. 49, 1943, it is equally important, this time from the aspect of insulating value rather than from that of moisture proofness, that loose-fill insulation in attic floors should be covered on top with a sheet of vapor-permeable paper. According to these experts, uncovered loose-fill insulation 1" thick has a U-value of 0.312, whereas for a similar thickness covered with a permeable paper it has a U-value of 0.268—a very consequential difference. The Federal Housing Administration's official U-value for this material covered and uncovered is the same—0.202. Suitable papers are inexpensive and easy to lay, and the results in higher heating efficiency in wintertime are noticeable.

streamlined specifications: ELECTRICAL WORK

BY MORTON ISAACS* AND BEN JOHN SMALL**

This article, the first of a series, has been prepared to illustrate a streamlined specification for electrical installations. Wiring for lighting, heating, power, and communication systems in residential, commercial, and industrial structures has been considered. No attempt was made to discuss the design or other engineering aspects of the installation.

Since most electrical systems are furnished with power from a main supply source, an installation as a whole might be considered as one system. In these specifications, however, the word system applies only to a particular part of an electric installation; i.e., a fire alarm system. Material and installation standards established here will not be repeated, but do apply to the various electrical systems which will be presented in subsequent issues of P/A. It will be necessary, of course, to edit them to suit the job.

Bold face words and figures occurring in sentences or phrases are those of the authors' selection. Those who may use this specification as a guide will furnish their own words in accordance with project requirements.

PART 1—GENERAL REQUIREMENTS

1. general
- (a) Applicable provisions of "General Conditions" govern work under this section.
 - (b) These Specifications are of the abbreviated or "streamlined" type and include incomplete sentences. Omissions of words or phrases such as "The Contractor shall", "in conformity therewith", "as noted on the Drawings", "according to the plans", "a", "an", and "all", are intentional. Omitted words or phrases will be supplied by inference in the same manner as they are when a "note" occurs on the Drawings. Words "shall" or "shall be" will be supplied by inference where colon (:) occurs within sentences or phrases.
 - (c) Provide all items, articles, materials, operations, or methods listed, mentioned, or scheduled on the Drawings and/or herein, including all labor, materials, equipment, and incidentals necessary and required for their completion.
 - (d) Install and connect items mentioned herein and furnished by others.
 - (e) Connect items mentioned herein that are installed by others.(1)
 - (f) Install items mentioned herein furnished by others.(2)
 - (g) Abbreviation list of organizations and publications specified herein follows:

AIEE	American Institute of Electrical Engineers
ASA	American Standards Association
FS	Federal Specifications
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
NBFU	National Board of Fire Underwriters
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
UL	Underwriters' Laboratories, Inc.

PART 2—MATERIAL STANDARDS

1. materials
- (a) Materials: UL, unless otherwise required.
 - (b) Deliver materials to site; store until ready for installation, in original packaging, in manner to permit ready inspection by Architect.

PART 3—INSTALLATION AND WORKMANSHIP STANDARDS

1. general
2. exterior work
- (a) Installation and workmanship standards: NEC, NESC, unless otherwise required(3)
 - (a) Underground conduit and cable work:
 - 1. Excavation and backfill: by others.(4) Establish line and grade of conduit runs and manholes by reference to finished grade(s).(5) Provide 1'-0" minimum clearance between conduit structure and other sub-grade structures and piping. Ram floor of excavations solidly.(6)

*Guy B. Panero, Consulting Engineers
**Associate, Alfred Hopkins & Associates, Architects

2. Conduit: (Following applies to cement asbestos or fiber conduit only.)
 - a. (Insert FS Number or brand.)
 - b. Pitch: **3"** per **100'** to avoid water trap(s).
 - c. Clean with mandrel prior to pulling in conduits.
 - d. Install conduits in place with concrete (or other approved) separators to provide **1"** spacing between conduits.(7) Maximum spacing between separators: **5'-0"**. Tie conduit structure with 10-gage galvanized iron wire or approved banding iron. Maximum spacing between ties: **5'-0"**. Paint inside of couplings and tapered conduit ends with asphaltum paint prior to joining. After joining, wrap joints in two layers of tightly drawn muslin; paint with asphaltum paint.
 - e. Provide bell ends at conduit termini.
 - f. Concrete work and reinforcing: by others.(8)
 - g. Plug spare conduits.
 - h. Leave 10-gage galvanized iron drag wire in spare conduit(s). Coil: **2'-0"** at termini.

3. Manhole(s):(8)

- a. Excavation, construction, and backfill: by others.(4)
- b. Deliver cover, cover frame, pull-in irons, inserts for supporting ladder, racks, other items to be framed in concrete by Masonry Subcontractor at site. Place conduit sleeves and bell ends in form(s) prior to pouring. Be responsible for final location of conduit termini.

4. Conductors:

- a. Pull in after construction (of manholes and conduit runs) is completed.
 - b. Splices, taps, joints, pressure connectors or splicing sleeve: similar and equal to (brand). Insulation over splice, tap, or joint: equal to that on conductors. On lead covered cables, lead sleeve: wipe soldered over insulated splice or tap.
 - c. Potheads at cable termini: equal and similar to (brand). Install, connect conductors; fill pothead in accordance with manufacturer's printed installation directions.
 - d. Ground lead sheaths of conductors. Minimum ground wire size: **No. 6**. Maximum resistance (sheath to ground): **25 ohms**.
 - e. Identify cables with brass tag(s) having engraved wording **1/4"** high (minimum) tied to each conductor or cable with **12-gage** base copper or brass wire. Tags: required in each manhole, at cable termini.
 - f. Tie cables to sacks with marlin in approved manner.
- (b) Underground (direct burial) cable work:(9)
1. Excavation and backfill: by others. (4) Establish line and grade of cable run(s) by reference to finished grades.(5) Allow **2'-0"** minimum clearance between cable trench and other sub-grade structures or piping. First layer of backfill: **6"** coarse sand. Balance of backfill: tamped earth; no stone permitted.
 2. Protect by conduit sleeves, cables passing under road or walks, thru foundation walk, or other structural sections. Pack such conduit sleeves with oakum and non-hardening, waterproof compound having no deleterious effect on cable covering. Render sleeve(s) water tight with packing.
 3. Make splices, connections, and taps with pressure connectors similar and equal to (brand). Insulation over connector: equal to that on connector.
 4. Pothead(s) at cable termini: (brand). Install, connect conductors and fill pothead in accordance with manufacturer's printed installation directions.

(c) Aerial Construction:(10)

1. NESC, NEC, unless otherwise required.

3. interior work

(a) Conduit and Electrical Metallic Tubing:

1. NEC, unless otherwise required.
2. Install exposed on walls (or) (and) ceilings.*
3. Install concealed in floor(s), wall(s) (or) (and) ceiling(s).*
4. Install sizes up to **1"** concealed in floor (slabs or fill and finish); sizes up to **1 1/4"** concealed in walls; sizes up to **3"** concealed in hung ceilings; expose other runs.*
5. Cover conduit within **1"** of top of floor finish with **1/2"** wire mesh extending **6"** beyond each side of conduit.
6. Exposed runs: parallel or perpendicular to walls, ceilings, or structural members, and symmetrical with regard to room or area and equipment therein.
7. Support exposed conduit every **8'-0"**.
8. Install expansion fittings where conduit crosses structural expansion joints.
9. Secure conduit where subject to displacement by other trades.(11) Be responsible for final conduit location.
10. Provide template for conduit groups passing through fire walls or floors. Template: as approved.
11. Plug conduit ends during construction; be responsible for entrance of any foreign matter; make repairs or replacements at no extra cost to Owner.
12. Where possible, avoid conduit runs that will trap condensate.
13. Keep conduit runs **6"** from steam or hot water piping, flues, and any other work liberating heat in excess of conductor rating.
14. Conduit on trapeze type hangers with piping of other mechanical trades shall occupy upper tier wherever practicable.

15. Running threads: not acceptable; use equal and similar to (brand).
 16. Butt joints at threaded couplings.
 17. Apply red lead, or other approved compound, to male threads prior to joining parts or sections.
 18. Clean conduits with mandrel or other approved means, prior to pulling in conductors.
 19. Leave 14-gage galvanized iron drag wire in empty conduits.
 20. Use preformed conduit bends for 90 or 45 degree bends where practicable. Where conduit passes around sharp corners at beams or other structural members, install pressed steel or cast conduit fittings.
- (b) Conduit and Electrical Metallic Tubing Fittings: (12)
1. NEC, unless otherwise required.
 2. Install for symmetrical arrangement with regard to room or area and equipment therein.
 3. Where conduit(s) pass around structural members, use pressed steel or cast fittings.
 4. Use threadless, pressure type fittings in exposed work in dry nonhazardous areas only.
 5. Expansion fittings: telescoping sleeve type, with grounding ring, insulated bushings and packing, pressure rings, and waterproof.
- (c) Armored Cable and Nonmetallic Sheathed Cable
1. NEC, unless otherwise required.
 2. Install exposed on walls (but not within 1'-0" of floors or adjacent work table tops) and ceilings.*
 3. Install concealed in wall, floors, or ceilings.*
 4. Install sizes up to 1" outside diameter (or where largest outside dimension is less than 1") concealed in floors; sizes up to 2" (or where largest outside dimension is less than 2") concealed in walls; sizes up to 3" (or where largest outside dimension is less than 3") in ceilings; expose other runs.*
 5. Enclose in conduit where subject to mechanical injury.
 6. Maximum spacing between supports on exposed runs: 5'-0".

REFERENCES

1. It is recommended that the Subcontractor responsible for the ultimate performance of a system, furnish all equipment required for its operation. For example, in an air conditioning system, the Ventilating Subcontractor should furnish motors and controls. Motors are installed by the Ventilating Subcontractor, as they must be aligned with air handling and cooling equipment which are his responsibility. Control equipment is furnished by the Ventilating Subcontractor and installed by the Electrical Subcontractor. This method avoids the confusion that would result from requiring the Electrical Subcontractor to furnish some equipment and the Ventilating Subcontractor other equipment. Responsibility for all equipment is in the hands of one Subcontractor; all shop drawings, cuts, and the like are submitted by one organization, thus insuring, as far as possible, maximum co-ordination; related plumbing and electrical wiring changes are usually comparatively minor in scope.
2. This sentence covers such items as lamps and special, or decorative fixtures furnished by the Owner.
3. Establishes a minimum standard. Other requirements such as grade of work and work not specifically covered by NEC should be written into the Specification Part covering the particular system.
4. Usually by the General Contractor or his Excavation Subcontractor.
5. Minimum distance below finished grade and general direction of conduit runs, usually indicated on the Drawings.
6. Specify water soaking or other methods as required; this work usually done by the General Contractor or Excavation Subcontractor.
7. Detail of conduit structure on the Drawings.
8. Usually by the General Contractor or his Masonry Subcontractor. Specifications for concrete mix and reinforcing by structural designer.
9. Where future excavation, planting, and the like will occur, cable may be covered by (and strapped to) suitable planks. Where direct burial cables pass under roads, drives, and the like, specify runs in conduit; costly road repairs are saved if cable must be replaced.
10. Aerial construction varies considerably. Installation standards as specified cover most cases; specify project requirements under "systems" and on the Drawings. Where aerial construction extends utility lines over private property it is often necessary to conform to utility company requirements. Consultation during planning stage is advised. Consideration should be given to providing utility company with a right of way on Owner's property for servicing lines.
11. Such as pouring of concrete.
12. The word "conduit" is used through this paragraph for convenience only. Change wording to suit conditions where both rigid conduit and electrical metallic tubing are used, or where only electrical metallic tubing is used.

* Use 2, 3, or 4.



PRODUCTS

armorply for coolers

Prefabricated, modular, insulated panels have been developed by the United States Plywood Corporation for the erection of walk-in type coolers. The panels consist of two sheets of Armorply separated by 4" of Fiberglas; Armorply is made of thin metal strips adhesively bonded to plywood. These sections may be employed to provide any desired amount of refrigeration space. Erection of cooler is accomplished with minimum of labor; only sufficient ceiling height and adequate floor strength are necessary to house this type of cooler which is primarily suited for commercial, industrial, and farm use.

This panel system provides an impervious barrier to the transfer of water vapor; loss of efficiency due to icing of panels is eliminated. When subjected to a temperature differential of 70F in a four-week test, no icing of insulation developed, al-

though abnormally high humidity was maintained on both face and back of units being tested.

The metal facing can be of stainless steel, aluminum, or electrolytically zinc-coated steel. Metal surfaces are waterproof and easily cleaned.

Standard modular panels are available for coolers 8' high, 8', 10', and 12' wide, and within two foot multiples, any length desired. The door assembly and adjacent jamb panels have a 6' combined span, which permits their location in place of any three adjacent standard wall panels of basic two foot width.

The coolers can be easily disassembled and moved to another location. The 4" thickness of insulation in the panel cavity provides low heat transfer and economical operation with any conventional, electrically operated refrigeration unit which the owner may purchase.

asphalt shingles receive "class a" fire resistant rating

After ten years of field work and laboratory research, the Philip Carey Manufacturing Corporation becomes the first organization to produce asphalt shingles with a "Class A" fire resistant rating awarded by the Underwriters' Laboratories, Incorporated. These shingles, called Fire-Chex, are claimed to be the only ones of any kind to achieve this rating without the use of an asbestos felt underlayment. No special applica-

tion method is required, and this roofing material can be used without limitation in any area which requires the highest fire resistant rating. Extra thickness and weight, 325 lb. per square, give longer life and greater weather protection.

The success of this product lies in its top coat, which contains a patented asbestos-bitumen plastic compound. The asphalt coating, when exposed to a high heat or flame, is

flow resistant and prevents exposure of the inflammable felt base. This coating also forms an insulation mat which shields the underlying combustible roof deck from flame. Blistering, on hot summer days, is prevented by the additional tensile strength afforded the asphalt coating by the compound.

Now available in quantity, the price range is little more than that of other asphalt shingles claiming only a "Class C" rating.

produces magnetic catch for small hinged doors

A magnetic catch, for use on all small hinged doors, and good for 250,000 openings, or 70 years normal service, is being produced by Engineering Achievements, Incorporated, New Orleans. Known as Magnecatch, this device is equally suitable for new equipment or for replacing inoperative catches. A steel disc, placed on a door, becomes flush with a lifetime magnet when the door is closed. The magnetic attraction of the catch for the steel disc holds the door in place. Only slight pull is required to break the attraction.

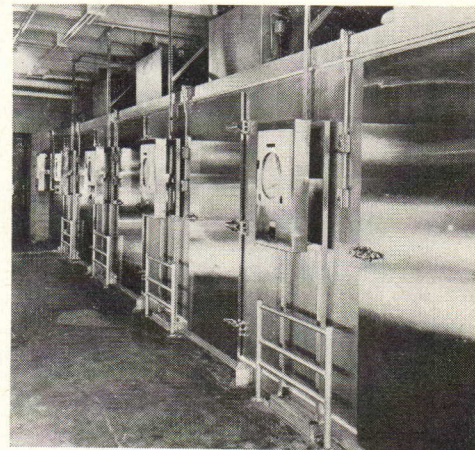
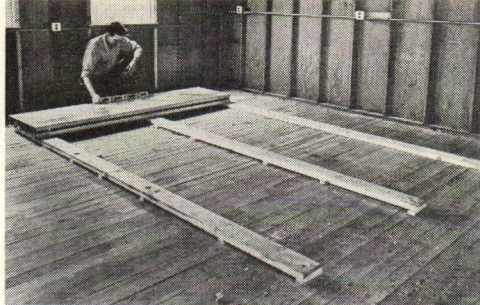
Only three wood screws are required to install the Magnecatch on a door frame.

sharpens mechanical pencils

A precision instrument, designed to point leads quickly and cleanly, has been developed for draftsmen who prefer to use mechanical pencils. Lead, extended from pencilholder and

locked in position, is inserted in a top opening and rotated until the desired point is obtained. Four carbide blades inside the casing will last indefinitely without sharpening. A cap on the pointer unscrews to permit removal of accumulated lead dust; a suction cup on the base holds instruments to desk or drawing board in desired location. The pointer is manufactured by Fugle-Mellett Products, Incorporated, Stamford, Connecticut.

(For additional product news, see Selected Producers' Bulletin, page 143.)



Top left: suggested method of laying sill.

Top right: erection of side panels; corner panel and four wall panels not yet in place.

Above: a five-unit walk-in cooler; exterior is stainless steel-faced plywood.

this month's products

air and temperature control

Central-Air Air Conditioners: packaged units, with fully automatic controls, designed primarily for remote installation with wall ducts; may be used as heating unit, with addition of heating coils. Comes in 8 sizes ranging from 5 to 40 tons capacity. Baker Refrigeration Corp., South Windham, Me.

Gas Circulating Wall Heater: constructed to fit between two standard center studs in new or old houses. Instantly adjustable manual control; automatic control optional. Input rating: 25,000 Btu. Coleman Co., Inc., 2nd & St. Francis, Wichita, Kan.

Crane "30" Boiler: burns coal or oil, may be fired manually or automatically. For use in large homes, small to medium-sized apartment buildings, churches, schools, and commercial buildings. Features patented baffles for controlled water travel, corrugated multiple-pass flue design presenting maximum area to fire and hot gases, multiple waterways, large fuel capacity. May be equipped with trombone tank-type water heater. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

No. 20 Adsorption Type Dehumidifier: for domestic or light commercial use, effective for humidity control in areas up to 7000 cu. ft. Dimensions: 20" high, 13" deep, 17" wide; socket-powered (110v, a-c), completely automatic. Dryomatic Corp. of America, 1600 Union Ave., Baltimore 11, Md.

Warm Air Conditioner: vertical floor model, may be transformed into suspended unit. Contains two motors, full pressure atomizing burner built into unit. Fully assembled, for residential and commercial installations. Harvey-Whipple, Inc., Springfield, Mass.

Economy Wall Heater: dual vented, circulating type, equipped with safety shut-off valve. Baked enamel surface remains at safe temperature and will not burn on contact. Will fit in standard 4" stud wall, requiring opening of only 14" x 50 1/2". Holly Mfg. Co., 875 S. Arroyo Parkway, Pasadena 2, Calif.

Ceiling-Type Kitchen Ventilator: fully automatic, controlled by standard light switch; mounting plate adjustable to permit flush ceiling installation. Rubber-mounted motor will not interfere with radio or television. Grill and fan assembly easily detached from unit for cleaning. Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.

Ventrola 30-C Ceiling Fan: powered to move 500 cu. ft. of air per min. Induction-type motor shielded against radio or television interference. Required ceiling opening only 11 1/4"; parts easily removed for cleaning. National Appliance Co., 4814-18 W. Vernor, Detroit 9, Mich.

Baseboard Heating Unit: improved type, with output of 600 Btu. per hr. per lin. ft., with 170F forced water, at about 25% less cost than former models. Covers and deflectors constructed in 6-in. increments to eliminate on-the-job cutting or sawing and to reduce installation time. Rittling Corp., 1292 Niagara St., Buffalo 13, N.Y.

Boiler-Burner Unit: for residential hot water and steam heating systems, with provision for hot water heating. H. B. Smith Co., Inc., Westfield, Mass.

Unit Heaters: new all-steel line includes 9 sizes with capacity ratings of from 100 E.D.R. to 1000 E.D.R. Heat transfer surface constructed of electro-tin plated copper tubes with aluminum fins bonded to tubes. Unique fabrication method claimed to result in very high heat transfer from heat source, whether low pressure steam, high pressure steam, or circulating hot water. Tenney Engineering, Inc., 26 Avenue B, Newark, N.J.

Radi-Vector Type FSF: newly designed front cover for Vulcan Baseboard Radi-Vector; made of 20-gage galvanite or cold rolled steel, in 1" increments up to maximum length of 8'; solid front conceals heating core, gives ample heat for floor level comfort. Vulcan Radiator Co., 26 Francis Ave., Hartford, Conn.

construction

Westbilt Forms: arched forms to provide dead air space under 75% of floor areas in basement-less houses; will also form one-pour concrete floor, or base for partition fasteners and radiant heat coils. Forms made of water repellent, economical material, are furnished in 100 sq. ft. bundles in collapsed form. Westbilt, Inc., 93 Tiffany Blvd., Newark 4, N.J.

doors and windows

Picture Window Unit: central picture window, offset by multiple panes of awning windows on either side; constructed of chemically impregnated wood; fireproof, resistant to damage by rot and vermin. Furnished complete, custom-built to fit any size opening. Fox Bros. Mfg. Co., 2700 Sidney St., St. Louis, Mo.

Steel Window Casings: production of standard casings to fit standard line of residential (Holford) steel casement windows. Casing affords key for plaster and template for plaster or masonry; clearance for screens and storm windows. Hope's Windows, Inc., Jamestown, N.Y.

Smokehouse Door: all-steel, now available in standard line. Three-point fastener provides uniform closing pressure at top, center, bottom of door; safety feature eliminates need for emergency release window; unit claimed to withstand warping effect of smokehouse temperatures. Jamison Cold Storage Door Co., Hagerstown, Md.

Stabilized Solid-Core Flush Door: for exterior or interior use. Especially constructed core will withstand violent changes in temperature and humidity. Mengel Co., Louisville 1, Ky.

Rusco Combination Window: self-storing unit, combining storm sash, screen, and weather-stripping; screened panel assures filtered ventilation in winter or summer, will not rust, rot, corrode, or need painting. F. C. Russell Co., 6400 Herman St., Cleveland 2, Ohio.

electrical equipment, lighting

Weatherproof Switch: for outdoor use on buildings requiring 30 amp. capacity service entrance switch in combination with 4-plug fuse branch circuits. General Switch Corp., 45 Roebeling St., Brooklyn 11, N.Y.

"Top Hats": recessed reflectors for use with R-40 lamps; suitable for supplementary incandescent lighting, sun lamps, and other applications. Edwin F. Guth Co., 2615 Washington Ave., St. Louis 3, Mo.

Litecraft: new line of round and square recessed incandescent fixtures, made of heavy gage aluminum in wide selection of finishes. 60 models in different sizes and styles, all well vented to assure cool operation. Litecraft Mfg. Co., 104 S. Fourth St., Brooklyn 11, N.Y.

Outlet Box Cover and Switch Housing: suitable for individual control of lights or power units and control of banks of lights up to 1250v. Overall diameter: 4 1/2". McGill Mfg. Co., Inc., Valparaiso, Ind.

Berkeley Luminaire: all metal fixture using two 40w general line fluorescent lamps, designed for better lighting of schools and commercial interiors. Downlight shielded 40° crosswise and 30° lengthwise, eliminating brightness and glare. Designed for individual suspension mounting with twin or single-stem hangers, or for surface mounting without hangers. Miller Co., Meriden, Conn.

CL-242 Fluorescent Lighting Fixture: two-lamp 40w unit with bottom louver and luminous plastic side panels; credited with unusual flexibility in mounting, whether surface or pendant, individually or continuously mounted; 20-gage steel chassis, completely assembled and wired. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N.Y.

finishers and protectors

EHW Formula: provides tough, transparent coating for all metals and plated surfaces against rust, corrosion, pitting, and tarnish; will not discolor or turn brown, can be removed with standard acetates. Temperature Equipment Corp., 4505 Euclid Ave., Cleveland, Ohio.

insulation (thermal, acoustic)

Weatherwood Twin-Tile: wood fiber insulating tile, produced in two-tile units, with plastic-coated finish, designed for quick application with automatic stapler. Edges easily fitted and aligned; may be nailed, if desired. U. S. Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

sanitary equipment, water supply, drainage

VARIJET Bullet Package Unit: compact water system for shallow well installation on lifts not over 25 ft., designed for small homes; will fit under kitchen sink or any space measuring 13 1/4" x 28 1/2" x 25" high. 1/4 h.p. pump delivers from 110 to 800 g.p.h., depending on suction lift and discharge pressure. All necessary fittings and accessories included. Flint & Walling Mfg. Co., Inc., Kendallville, Ind.

High Outlet Trap: when used in conjunction with manufacturer's new FA3-JR Disposall, trap will permit installation of appliance without major plumbing change in over 85% of existing houses having sinks with 3/2 to 4 in. drain opening. General Electric Co., Boston Ave. and Bond St., Bridgeport, Conn.

specialized equipment

Bodiform Retractor Theater Chair: cast-iron construction, upholstered in mohair; seat suspended from two "oilite" self-lubricating bearings on each side; "swinging" mechanism smooth, silent, completely shielded so that clothing cannot be caught or soiled; when vacated, seat automatically assumes 3/4 safety-fold position, to simplify passing for patrons; damaged upholstery quickly replaced—no tacks. American Seating Co., 901 Broadway, N.W., Grand Rapids, Mich.

Explosion-Proof Intercom System: safe, two-way voice, electronic system for plants where atmosphere in work areas contains highly inflammable and explosive gases or vapors. Full selectivity: stations in hazardous areas can call other stations in either hazardous or non-hazardous areas. Each system individually planned to meet specific needs of plant. Executone, Inc., 415 Lexington Ave., New York 17, N.Y.

Adjusted: plywood device, when placed under mattress, transforms regular bed into modified hospital bed with seven possible positions for upper trunk and five positions for flexing hips and knees. Notched steel brackets, hinged for quick alterations of positions; can be folded easily for storage. Mengel Co., Louisville 1, Ky.

Roof De-Icing Kit: designed to prevent water damage from snow and ice on roofs in homes and commercial buildings. Consists of 60 ft. of lead sheathed heating cable with standard plug, shingle clamps for attaching cable to roof, and installation instructions. Cable, looped around roof edge, melts channel through ice, allowing water to drain away normally. Kit rated at 460w, designed for operation from 110 to 120v. Rockbestos Products Corp., Nicoll & Canner Sts., New Haven 4, Conn.

surfacing materials

Arlon: resilient plastic asphalt tile with high resistance to oils, greases, fats, alkalis, and wear; practical for installation on or below grade, as well as on suspended wood or concrete floors. Produced in 1/8" and 3/16" gages and in 9" x 9" tile, comes in 11 shades. Armstrong Cork Co., Lancaster, Pa.

Arazzin Carpet: vinyl plastic floor covering with cellular rubber base; embossed surface simulates appearance of broadloom carpeting. For use wherever heavy foot traffic or difficult maintenance makes fabric carpets impractical; tough, long-wearing, highly resistant to oils, grease, dilute acids, and alkalis. Eleven colors, three thicknesses. Hood Rubber Co., Div. of B. F. Goodrich Co., Watertown 72, Mass.

Olympic Handsplit Siding: beveled cedar slabs, cut by hand, with handsplit face and resawn back, making it easier to lay; pre-stained in various colors. West Coast Stained Shingle Co., 1118 Leary Way, Seattle, Wash.



Manufacturers' Literature



Editors' 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

1-308. Agitair Air Diffusers, 6-p. folder on three types of square and rectangular diffusers. Procedure for selecting and sizing, available patterns, typical applications, details, charts. Air Devices, Inc.

1-309. Airkem Chlorophyll Air Freshener (PE 1), 4-p. illus. folder describing portable Osmetrol Unit (Model PE), for control of indoor odors in areas not equipped with air-conditioning systems. Operation, design details, construction drawings. W. H. Wheeler, Inc.

1-310. The Bethlehem Dynatherm, AIA 30-C-14 (Bul. D-5), 4-p. illus. bulletin describing all-welded steel heating plant employing "whirling flame" oil burning principle claimed to heat boiler water much faster than ordinary flame. Advantages, dimensions, ratings, data. Bethlehem Foundry & Machine Co.

Two catalogs, one on exhaust fans, the other on air circulators, describing uses, types, specifications, and giving performance data, methods of installations, design and construction details. Emerson Electric Mfg. Co.:

1-311. Exhaust Fans (Unit X6259)

1-312. Air Circulators (Unit X 6258)

★ **1-313. Sarcotherm Weather Control (Tech. Bul. 2)**, 12-p. bulletin dealing with centralized program control systems for hot water and radiant heating. Schematic diagrams of boiler hookups, wiring diagrams, illustrating control systems for apartment houses, office buildings, schools, institutions, etc.; specifications. Sarcotherm Controls, Inc.

1-314. Janitrol Hot Water Heating Systems (JS106-029), 12-p. illus. booklet on packaged heating unit supplying all hot water requirements as well, for installation in buildings using convector or radiant heating, or combination of both. Advantages, typical installations, specifications. Surface Combustion Corp.

1-315. Trane Hot Water Heating Specialties (Bul. J-355), 8-p. illus. booklet giving engineering data for design of one-pipe forced hot water system. Descriptions of parts and accessories, layout plans, tables, piping details, roughing-in dimensions. Trane Co.

1-316. Ammonia Booster Compressors (Bul. C-1100-B34), 8-p. illus. bulletin. Application, design features, specifications for four models, diagrams. Worthington Pump & Machinery Corp.

CONSTRUCTION

3-101. Fabricating and Finishing of Armco Zingrip—Paintgrip (P.O. 1049), 12-p. illus. booklet containing suggestions on how to weld and solder zinc-coated sheet steel, lubricants to use, application of cleaners and paints. Photos. Armco Steel Corp.

3-102. Gypsteel Plank, AIA 10 (4460), 6-p. illus. folder on precast gypsum slab, reinforced with galvanized steel wire mesh, for use as roof decking. General information, roof application instructions, specifications, details of design and installation, technical data. Certain-teed Products Corp.

3-103. Durimet 20 (Bul. 502), 8-p. illus. booklet on corrosion-resisting sheet and plate steel. Description, advantages, typical installation photos, standard gages, sizes, weights, and finishes. Duriron Co., Inc.

3-104. Cut Concrete Form Costs with GPX (P-1), 4-p. illus. booklet describing plastic plywood forms, fabrication suggestions, specifications, photos. Georgia-Pacific Plywood & Lumber Co.

3-105. Metal Lath and Accessories, AIA 20-B-1 (Cat. 250), 16-p. illus. catalog describing various types of metal lath, cold-rolled channels, solid partition and furring system, corner beads, expansion casings, screeds, and other accessories. Illustrations, sizes, dimensions, index. Inland Steel Products Co.

3-106. Glasfab, 14-p. booklet containing product sample and description of inorganic waterproofing membrane fabric made of inorganic glass fibers. Description, advantages, uses, applications, specifications. Lexington Supply Co.

3-107. Build Your New School Now, 8-p. illus. brochure on standardized, prefabricated, heavy steel-frame school buildings, flexible enough to permit wide range of adaptability. Suggested plans for traditionally-styled and modern schools. Luria Engineering Corp.

Bulletin describing glued laminated wood arches and trusses. General data, specifications, details, installations. Another bulletin giving instructions on erection of glue-welded barn rafters. Details, drawings. Rilco Laminated Products, Inc.:

3-108. Rilco Arches and Trusses, AIA 19-B-3

3-109. How to Raise Rilco Barn Rafters

3-110. Save Concrete—Assure Dry Floors, single sheet illustrating use of

reinforced, moistureproof membrane in concrete floor construction. Application photos, availability. Sisalkraft Co.

3-111. Specification Sheet No. 1, AIA 19b, first of new series of spec sheets covering application of Trip-L-Grip framing anchors at specific points in light wood construction. Sheet No. 1 illustrates application of anchors in attaching joists to headers and headers to trimmers, identifying anchor most suitable for each location. Timber Engineering Co.

3-112. Truscon (1949 Edition), 24-p. illus. catalog on steel joists, steel deck, metal lath, accessories. Construction details, dimensions and sections, properties, loading tables, specifications, installations, illustrations, packing data. Truscon Steel Co.

DOORS AND WINDOWS

4-220. Alcoa Window Sills, Thresholds, AIA 14-B (AD-137), 20-p. illus. bulletin illustrating aluminum window sills and thresholds. Shapes, typical details, specifications, installation procedure, characteristics. Aluminum Co. of America.

4-221. Daylight in Your Home (1B67), 20-p. illus. catalog showing typical installations of glass blocks in houses where ordinary windows would not be practical. Advantages, photos, step-by-step instructions, required frame openings dimensions, designs, sizes, accessory materials, typical details. American Structural Products Co.

4-222. Choose the Safety of the New Berry Aluminum One-Piece Garage Door, leaflet describing three types of simply installed garage doors. Advantages, details, photos. Aluminum Products Corp.

4-223. Golden Polished Plate Glass (GP-1), 4-p. folder on store front plate glass claimed to reduce window display losses caused by sun fading. General and technical data, suggested specifications, typical installation photos. Libbey-Owens-Ford Glass Co.

4-224. The Rusco Prime Window (RPW-110), 12-p. illus. booklet on all metal, combination screen and storm sash, using no counterweights or balances. Advantages, installation details, types and sizes, full size details. F. C. Russell Co.

4-225. Dura-Seal Combination Metal Weatherstrip and Sash Balance (Cat. 49), 16-p. illus. catalog describing metal

weatherstrip-sash balance unit and standard line of metal weatherstrips. General features, construction details, standard gages, double-hung window footage chart. Zegers, Inc.

ELECTRICAL EQUIPMENT, LIGHTING

5-221. **Lehrolite**, 24-p. illus. catalog, including price list and index leaflet, illustrating incandescent lighting fixtures of traditional design for ceiling and wall installations. Color illustrations, dimensions, wattages. Also, several examples of fluorescent fixtures. Lehrolite, Inc.

5-222. **Midwest Champion** (Cat. 10), 4-p. folder, with loose instruction sheet, on industrial incandescent lighting fixture and floodlight, each containing hermetically sealed, double-wall, silvered reflector. General data. Midwest Lighting Products Co.

5-223. **Triangle Conduit, Wire, Cable** (Cat. 49), 12-p. illus. catalog presenting basic data on wire, cable, and steel conduit raceways. Detailed specifications. Triangle Conduit & Cable Co., Inc.

5-224. **Plexiglas for Architects**, AIA 31-F-29 (No. 1), portfolio containing two loose sheets on uses and advantages of Plexiglas (thermoplastic acrylic resin) as material for lighting purposes, design drawings, bulletin on approach to room lighting, two installation photos, physical properties, colors, types, sizes, thicknesses. Rohm & Haas Co.

5-225. **Creating the Spectacular** (KV-290), 10-p. illus. bulletin illustrating variety of contemporary focal lighting fixtures for merchandise display. Brief descriptions, construction features, performance data, maximum light intensities, price list. Kurt Versen Co.

FINISHERS AND PROTECTORS

6-176. **How to Use Shellac for Best Results** (405), 18-p. manual giving information on shellac and its properties, uses, and method of application on new and old floors, walls, woodwork, furniture. Index. American Bleached Shellac Mfrs. Assn.

6-177. **Paint Selection Check Chart**, 6-p. folder containing chart for proper selection of paint, primer, and coating for any surface. Wilbur & Williams Co.

6-178. **To Keep Out Water**, 6-p. folder on transparent Silicone masonry water repellent. General data, application. Wurdack Chemical Co.

INSULATION (THERMAL, ACOUSTIC)

9-140. **Striated Homasote**, 6-p. folder describing striated insulation panels and tiles for interior or exterior finish. Color samples, sizes. Homasote Co.

9-141. **Alfol**, 4-p. illus. folder on building blanket insulation surfaced with reflective aluminum foil; provides posi-

tive vapor barrier, reflects 95% radiant heat. Advantages, method of application, description and uses of four types. Reflectal Corp.

SANITATION, WATER SUPPLY, DRAINAGE

★ 19-479. **Elgin Water Conditioning** (Bul. 610), 20-p. illus. bulletin containing data on water conditioning equipment, including zeolite water softeners, water treating chemicals, conditioning systems for boilers and processing, water filters, aerators, taste and odor removers. Advantages, uses, typical applications, operations. Elgin Softener Corp.

SPECIALIZED EQUIPMENT

19-480. **Fire Extinguishing Equipment and Smoke Detecting Systems** (C-70R2), 14-p. illus. booklet on wide line of fire extinguishers, including portable, mobile units, and complete systems; also smoke detecting systems of audible and visual types, and recharging equipment. Descriptions, photos of units and installations. C-O-Two Fire Equipment Co.

Folder describing two types of bank drive-in depositories of modern design. Specifications, drawings and dimensions, advantages, photos. Other folder outlines design, construction, and operation of typical modern bank vault. Typical plan, installation photos. Her-ring-Hall-Marvin Safe Co.:

19-481. **Drive-In Depository** (480-000)

★ 19-482. **Modern Bank Vaults** (405-001)

19-483. **Everything for the Fireplace**, 4-p. folder, with price list, illustrating wood and marble mantels, brass and-

irons, screens, grates, tile facings, other accessories. Sizes, photos, drawings. Wm. H. Jackson Co.

19-484. **Book of Hospital Casework**, AIA 35K (Cat. 49), 88-p. illus. catalog on hospital cabinet and storage cupboard units, water and electric service fixtures, typical nurses' station, standard assemblies. Typical floor plans and elevations, general information, unit dimensions, photos, drawings, specifications. Kewaunee Mfg. Co.

SURFACING MATERIALS

19-485. **Tread-Sure**, 4-p. folder on abrasive coating to provide antiskid surface on wood, concrete, or steel deck flooring. General data, application directions. A. C. Horn Co., Inc.

19-486. **Amerwood**, 4-p. leaflet on all-purpose, natural wood paneling with lacquered and waxed finish. Description, advantages, widths and lengths. Lehwod Corp.

19-487. **Loxit Chalkboard Setting System**, AIA 35-B-11, 8-p. illus. booklet describing all-metal mounting system for chalkboard and tackboard. Description, operation, supplementary information, typical installations, details. Loxit Systems, Inc.

19-488. **Stylized Floors, Walls of Rubber**, 4-p. illus. folder showing selection of colors and patterns available in rubber floor and wall coverings. Color plates, typical installation photos. R. C. A. Rubber Co.

19-489. **Superflex**, 12-p. brochure illustrating use of ribbed and smooth flexible plywood for interior paneling decoration. Drawings, material data. Superflex Plywood Corp.

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3-108	3-109	3-110	3-111	3-112	4-220	4-221	4-222
4-223	4-224	4-225	5-221	5-222	5-223	5-224	5-225
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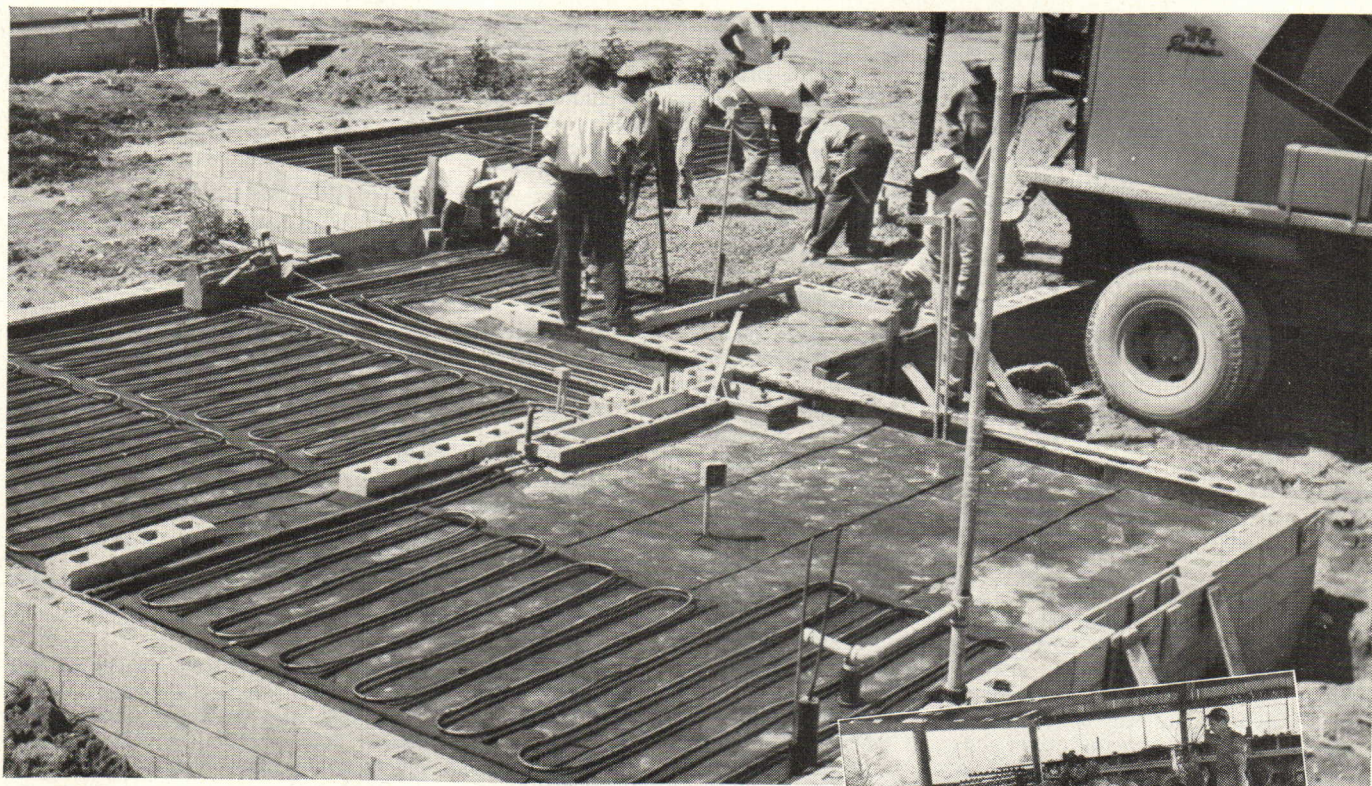
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PLEASE PRINT

☐ Home
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11/49

102½ MILES OF REVERE COPPER WATER TUBE AT OAK RIDGE, TENN.



500 Permanent Homes to be heated by RADIANT PANEL METHOD

This huge project of 500 permanent homes being built for the U. S. Atomic Energy Commission at a cost of \$6,500,000.00 by John A. Johnson & Sons, Inc., Oak Ridge, Tenn., will consume 540,900 feet of Revere Copper Tube to be used for radiant panel heating, water lines and service connections.

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Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

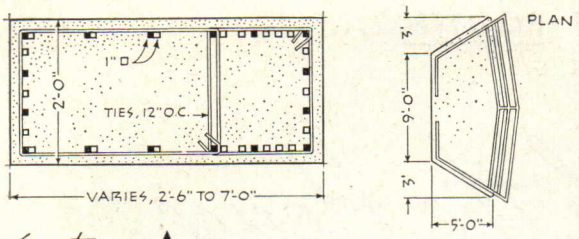
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities, Distributors Everywhere.



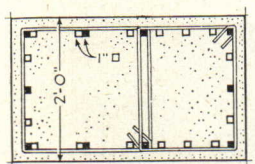
TO SAVE TIME AND MONEY IN HANDLING and installing the radiant panels for heating, the Revere Copper Water Tube was speedily bent into wooden forms by hand, then wired to temporary frames and stacked flat until needed. Tube sizes run from ¾" to 1¼".



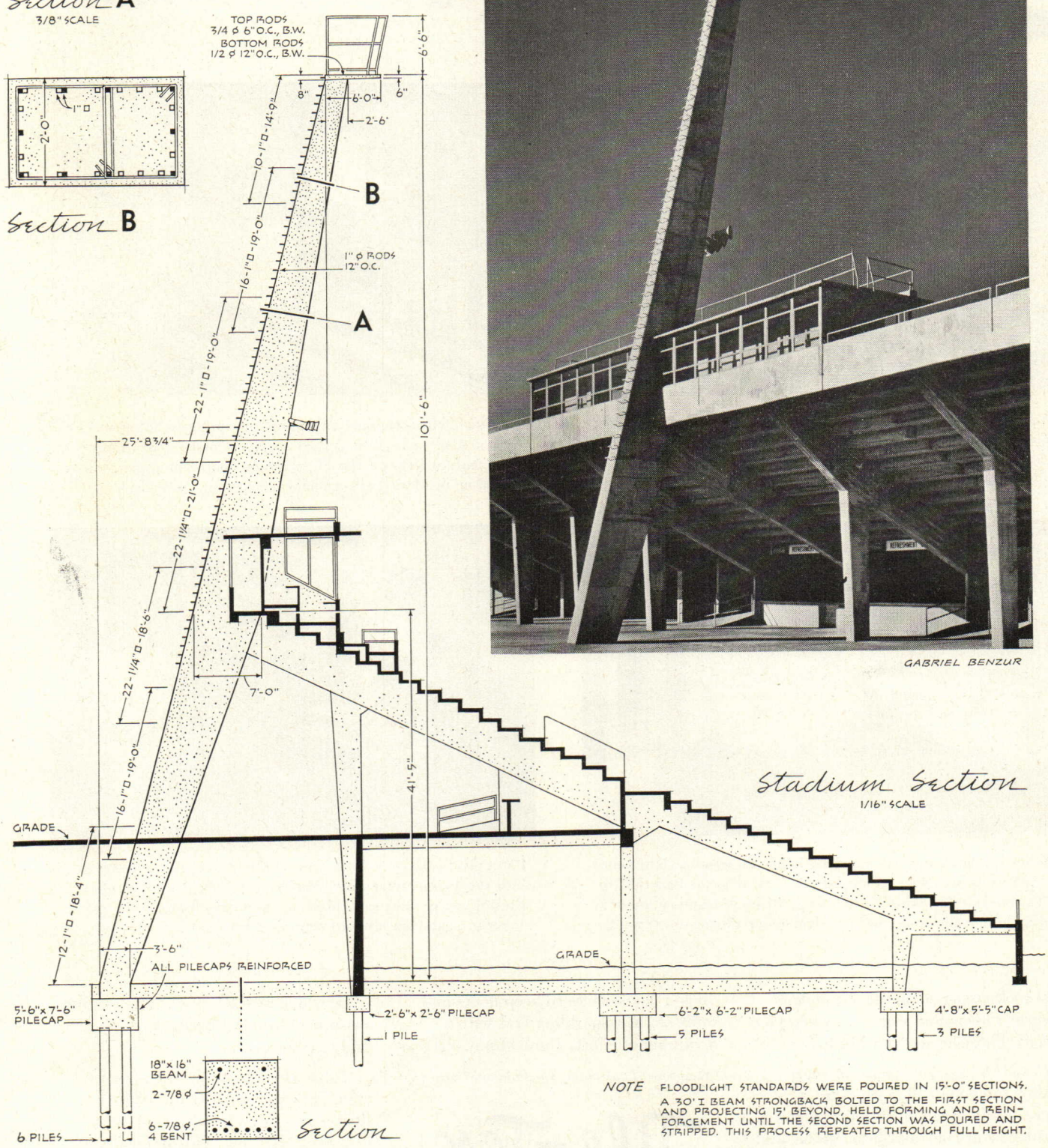
VIEW AT OAK RIDGE, TENN., of the 500 permanent homes built for the U. S. Atomic Energy Commission. Architects—Skidmore, Owings & Merrill, Chicago, Ill., Oak Ridge, Tenn. Plumbing Contractor—Brown Plumbing & Heating Co., Birmingham, Ala. Revere Tube furnished by Crane Co., Birmingham, Ala.



Section A
3/8" SCALE



Section B



GABRIEL BENZUR

Stadium Section
1/16" SCALE

NOTE FLOODLIGHT STANDARDS WERE POURED IN 15'-0" SECTIONS. A 30" I BEAM STRONGBACK BOLTED TO THE FIRST SECTION AND PROJECTING 15' BEYOND, HELD FORMING AND REINFORCEMENT UNTIL THE SECOND SECTION WAS POURED AND STRIPPED. THIS PROCESS REPEATED THROUGH FULL HEIGHT.

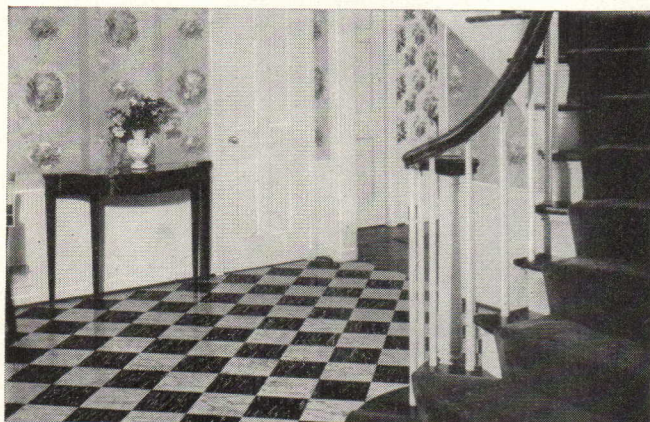
HENRY GRADY HIGH SCHOOL
Atlanta, Georgia

AECK ASSOCIATES
Architects

PUT CLIENTS ON THE RIGHT FOOTING...



All through the House!



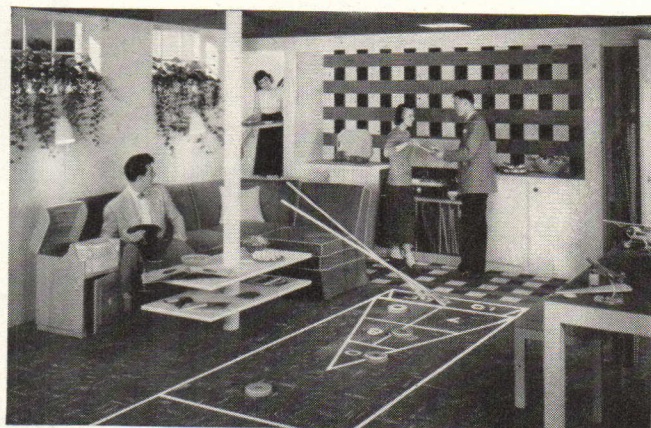
A good first impression is a foregone conclusion when you specify Flexachrome* for the foyer. Big black and white tiles in a sharp, clear checkerboard pattern make a striking entrance, as durable as it is beautiful . . . as easy to clean as it is easy to look at.



Here's a kitchen combination that will put spring in the housewife's step, a song in her heart. Bold stripes of green and white with coral feature strip on the Flexachrome floor. The same coral is picked up in Mura-Tex* companion colors for the walls.



Help your clients start the day right in this All-American bathroom of red, white and blue. Anything from "Singin' in the Bathtub" to "Yankee Doodle Dandy" is right on key here. Custom-cut inserts, as in the floor above add the individuality every home-owner wants.



Put a plaid pattern of Mura-Tex on the wall. Build a shuffleboard into the Flexachrome floor. Make a table from a lolly column. Presto! you've designed a playroom a millionaire would be proud to own . . . and one almost every client can afford.

Just look at the advantages you *build right into* floors and walls . . . when you specify Flexachrome and Mura-Tex.

Color! . . . a whole prism of sharp, clear companion colors, that are scientifically blended so that you can harmonize or contrast Flexachrome and Mura-Tex perfectly. *Design* is almost unlimited, due to tile-at-a-time installation . . . a wide variety of sizes . . . and custom-cut inserts. *Easy, economical maintenance* enables today's

"busy" housewives to keep floors and walls at their sparkling best with a minimum of effort. *Durability* . . .

**Registered Trademark, The Flintkote Company*

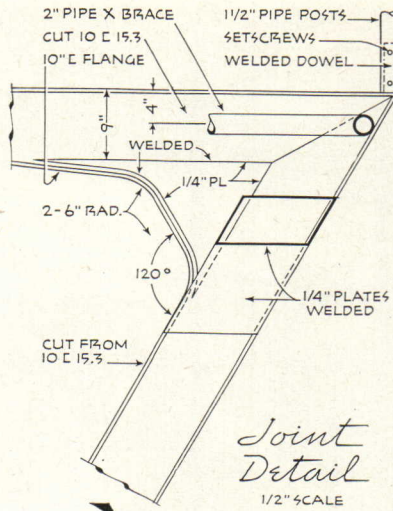
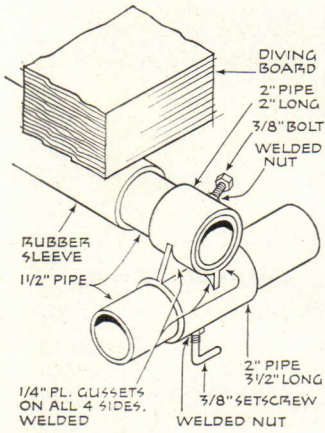
Tile-TEX
PLASTIC-ASBESTOS
FLOORS AND WALLS

everywhere in the house . . . is assured because these plastic-asbestos tiles are truly greaseproof.

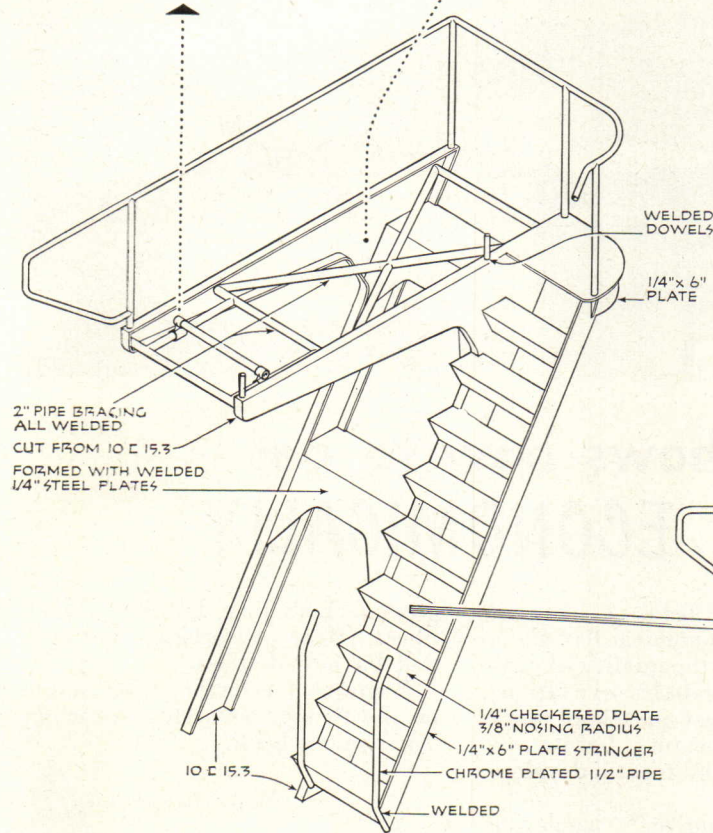
These are only a few of the outstanding qualities of these modern floor and wall materials. They're yours to use . . . right at your pencil's point. See Sweet's for full information, or write us. We'll rush complete data and specifications.

THE TILE-TEX DIVISION, The Flintkote Company, Chicago Heights, Illinois.

Fulcrum Detail
SCALE 1 1/2" = 1'-0"



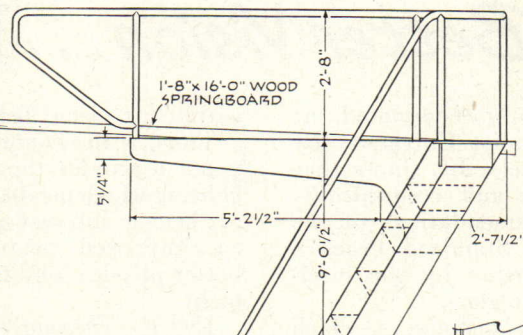
Joint Detail
1/2" = 1'-0"



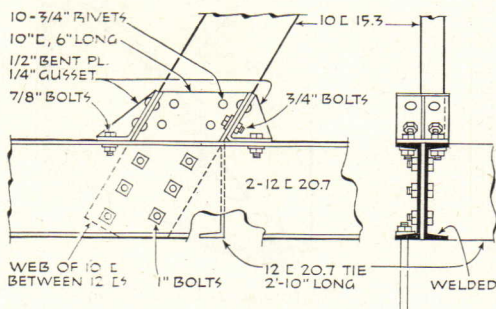
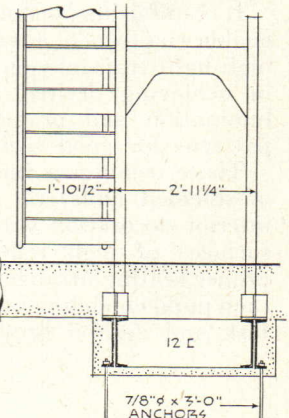
PHILIP FEIN



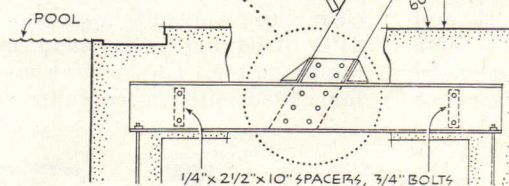
Side View
1/4" = 1'-0"



Rear View

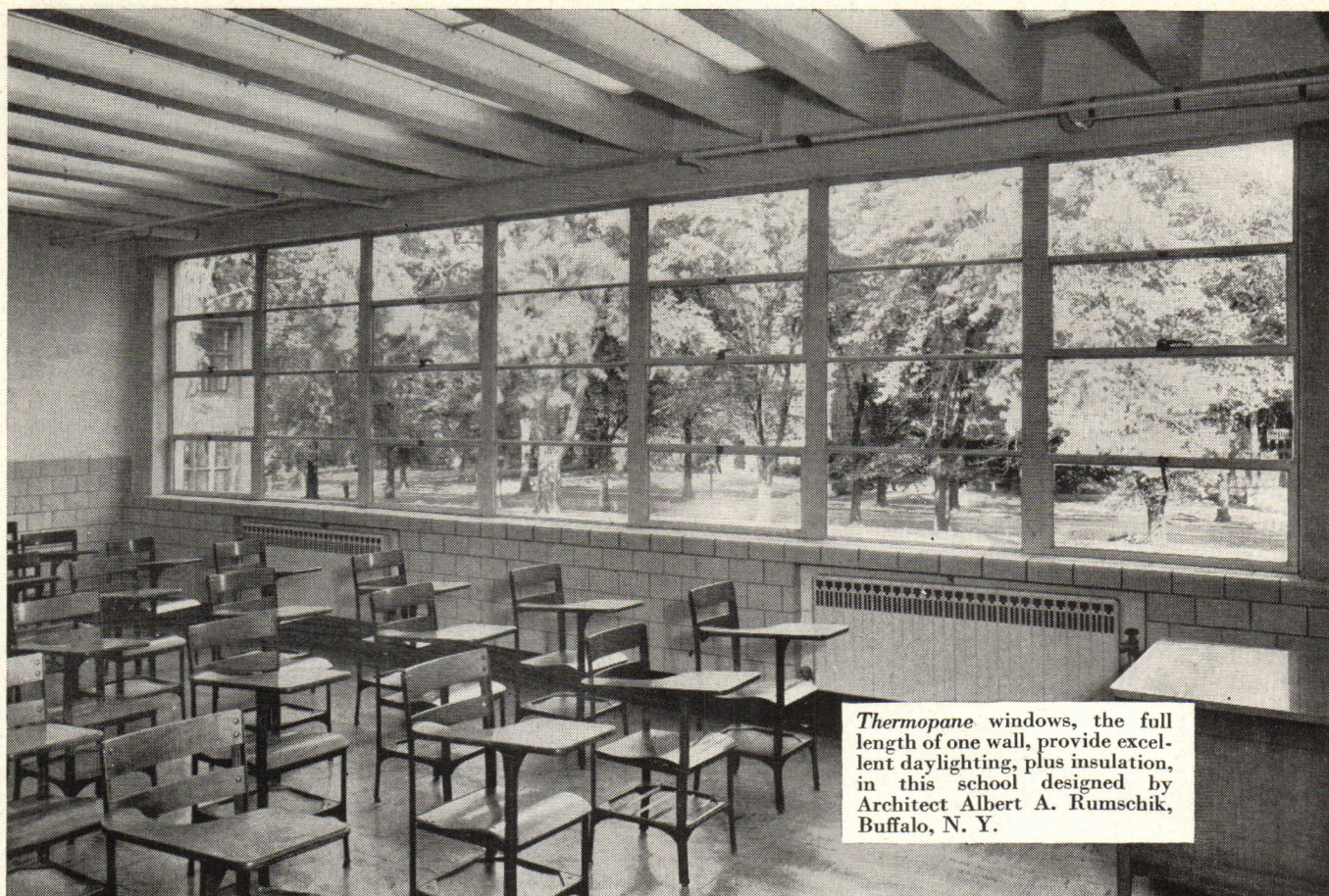


Detail at Base 1/2" = 1'-0"



BROADMOOR HOTEL
Colorado Springs, Colorado

BURNHAM HOYT
Architect



New Research shows how to get *Better Vision...* **ECONOMICALLY**

Research recently completed at Southern Methodist University by Prof. R. L. Biese, Jr., shows that you can fully, and *economically*, meet the recommendations of the 1948 American Standard Practice for School Lighting by the intelligent use of flat glass.

It establishes techniques which enable you to take advantage of the high light transmission of flat glass in achieving desired levels of illumination and proper brightness patterns for good seeing.

These techniques include the use of shielded unilateral fenestration, interior decoration with non-glossy surfaces of high reflectance, and proper seating arrangement to give each pupil enough light on his visual task and desired brightness ratios

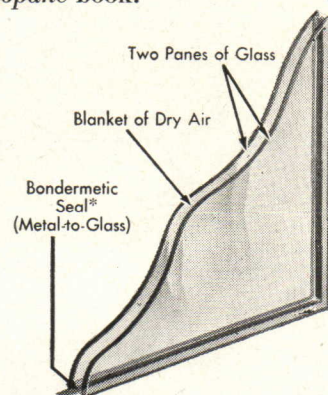
within his visual field.

Thus, with economical flat glass, you can provide the quality of daylighting which means less eye fatigue ... keener interest in school work ... improved posture habits ... better physical and mental development.

L·O·F Thermopane* insulating glass is an ideal means of obtaining these conditions when insulation of window walls is desired. A double-glazed window of clear, flat glass transmits more daylight than an equal area of any other form of double glass insulating unit. Thermopane composed of two panes of clear glass transmits approximately 81% of daylight. To meet special requirements, Thermopane may be fabricated with varied types of flat

glasses, including Polished Plate, Sheet, Heat Absorbing, Tuf-flex* and Patterned Glass.

Write us for further information on the Biese research and for our Thermopane book. *®



Cutaway view of Thermopane

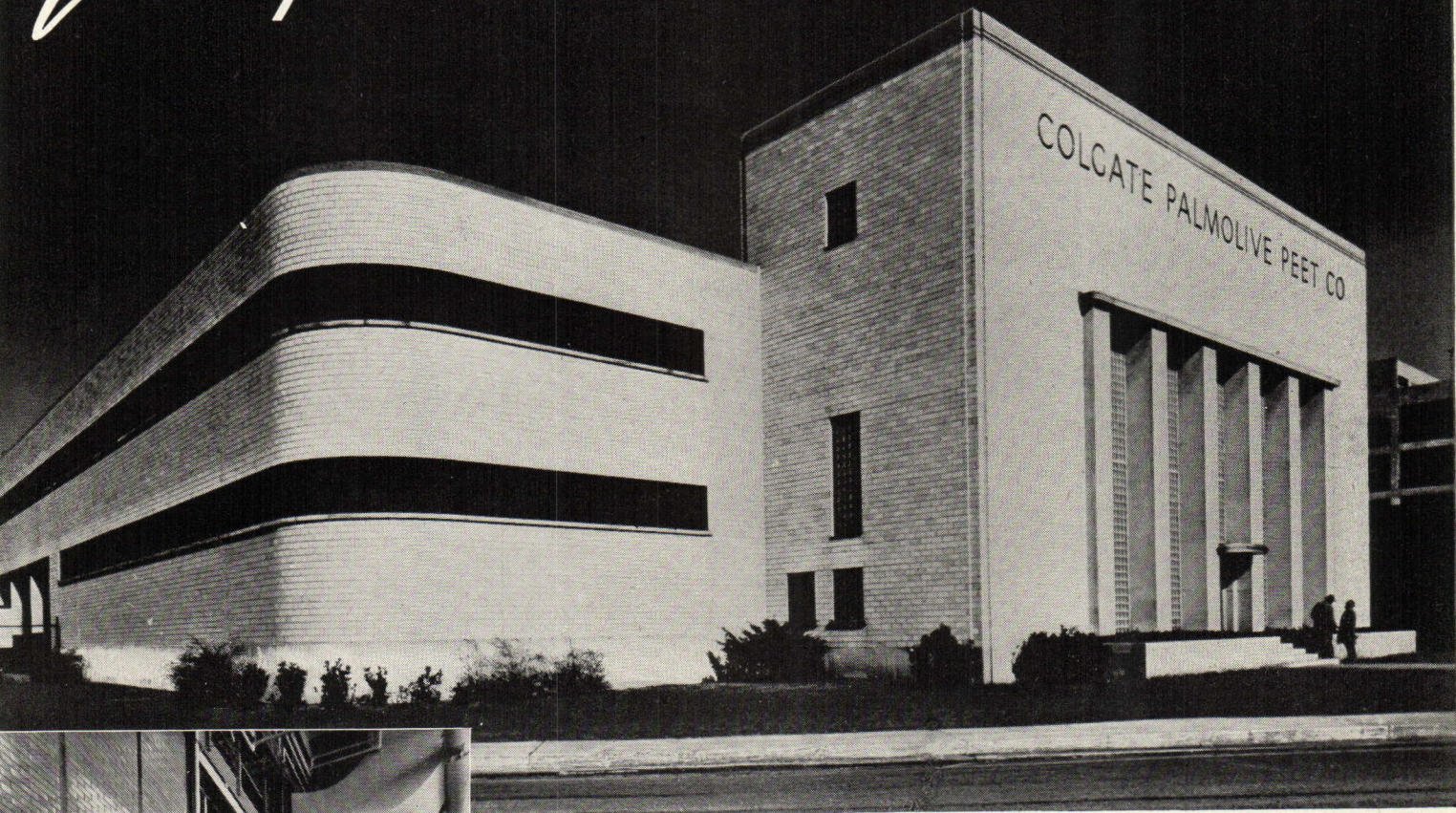
FOR BETTER VISION SPECIFY THERMOPANE
MADE WITH POLISHED PLATE GLASS



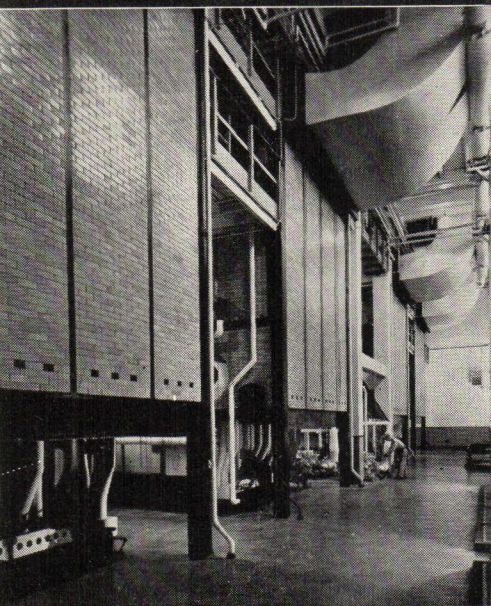
Thermopane

MADE ONLY BY LIBBEY-OWENS-FORD GLASS COMPANY
74119 Nicholas Building, Toledo 3, Ohio

Two sides to this story about *Facing tile* for industrial buildings



Unglazed Facing Tile



Glazed Facing Tile

Two sides to this story . . . and both good!

Take this inside story, for example.

The setting is a busy industrial interior built with Structural Clay Facing Tile. The walls are exposed to dirt, bacteria, steam, acids—all manner of hard wear. This goes on for years and the walls never get any more attention than an occasional soap and water cleaning! Yet the "finish" of the story is beautiful. That's because Facing Tile's surfaces are impervious, easily cleaned, *tough!* They never *need* costly maintenance!

The outside story might be set in a storm. Season after season grit-packed winds, rain, heat and cold take turns attacking a Facing Tile exterior. But the walls resist this extreme weather. They never crack, scratch or decay, never need refinishing or redecorating.

Inside or outside, Facing Tile provides a strong, fire-safe wall *and* finish that will serve a lifetime with a minimum of maintenance.

And—this is the big "plus"—Facing Tile adds *beauty* and *flexibility* to your plans! It makes imaginative design easy.

Facing Tile for interiors and exteriors is made in a variety of colors in efficient modular sizes, both glazed and unglazed.

Be sure you have the complete story on Facing Tile when planning future jobs. You can get detailed information from our Catalog 4d/5 in Sweet's, from Institute members, or from us, Dept. PA-11.

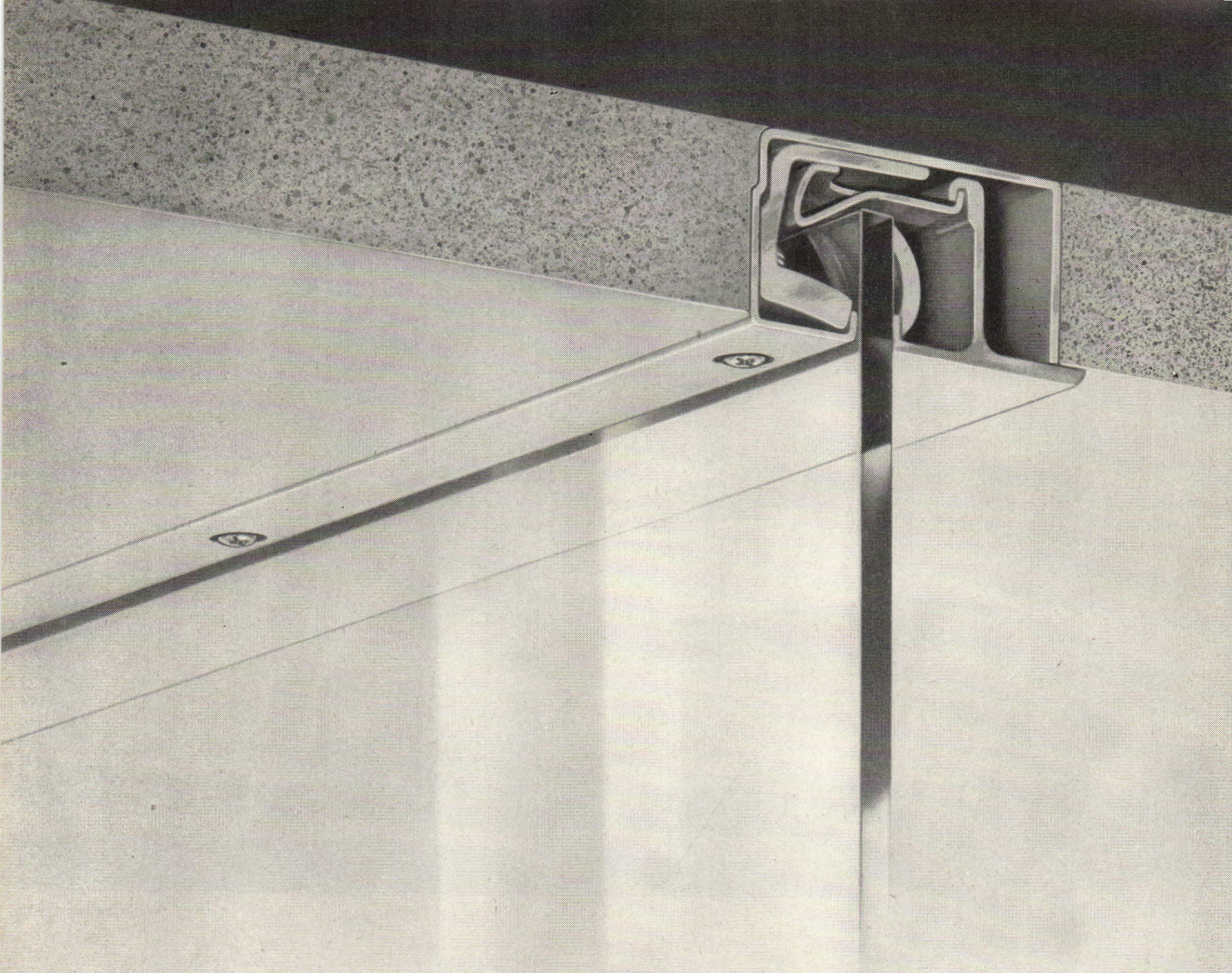
AUTHORITATIVE REFERENCE SOURCE

"Tile Engineering" is a handsomely bound, 450-page handbook of design, full of valuable information for the architect. It includes detailed data on properties, specifications, uses and construction techniques for Structural Clay Tile. Send \$2.50 with your name and address to Facing Tile Institute, Dept. PA-11.

FACING TILE INSTITUTE

18th Street, N.W., Washington 6, D. C.

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**YOU CAN MAINTAIN
HIGH ARCHITECTURAL STANDARDS
AND REDUCE BUILDING COSTS...
THROUGH THE SKILLFUL USE OF
CUSTOM-STYLED KAWNEER STOCK METALS**



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The face of this sash is flush with surrounding wall and ceiling surfaces, because all projecting members are eliminated. To the eye, the surfaces on both sides of the glass appear to be a single smooth

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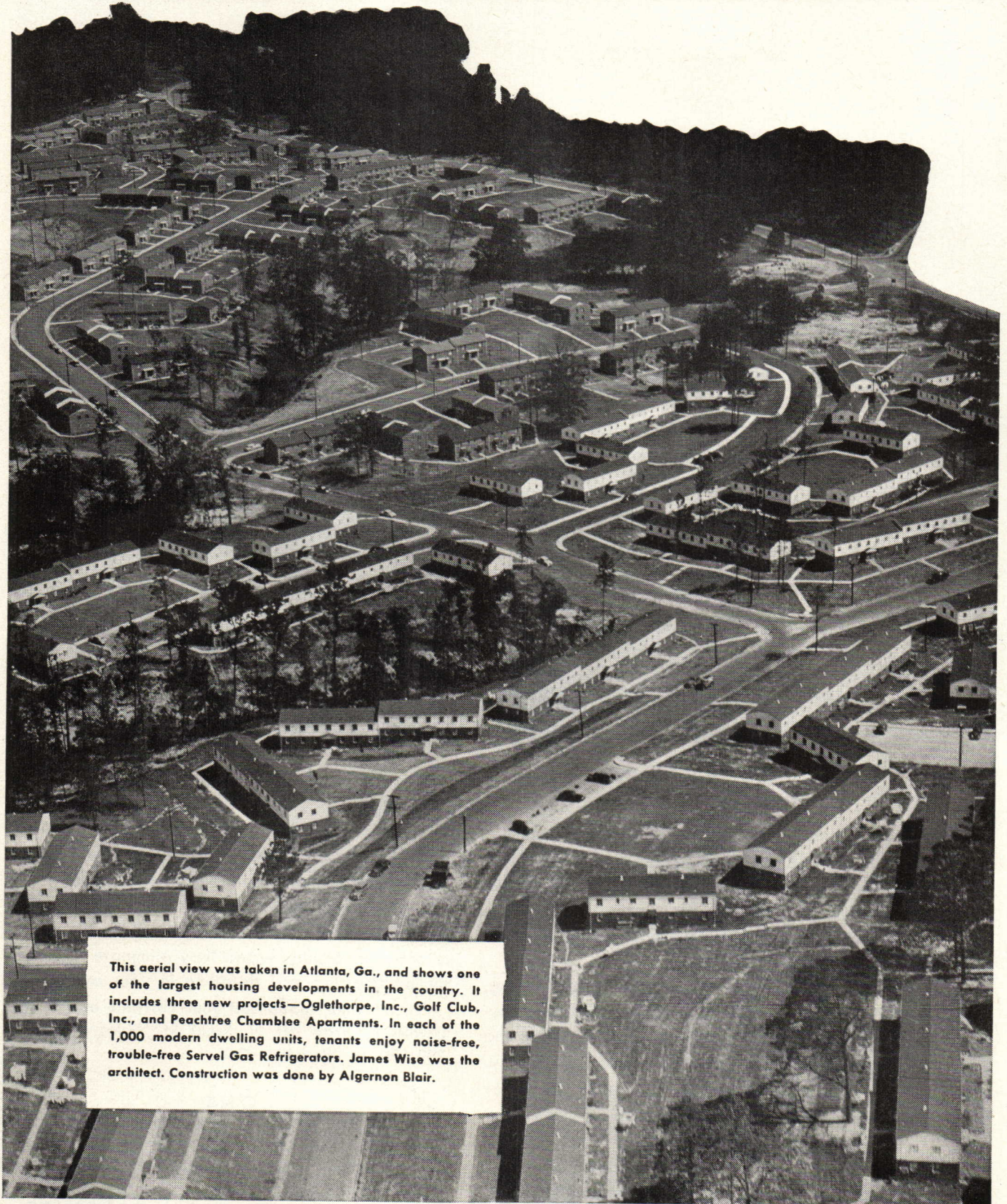
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This aerial view was taken in Atlanta, Ga., and shows one of the largest housing developments in the country. It includes three new projects—Oglethorpe, Inc., Golf Club, Inc., and Peachtree Chamblee Apartments. In each of the 1,000 modern dwelling units, tenants enjoy noise-free, trouble-free Servel Gas Refrigerators. James Wise was the architect. Construction was done by Algernon Blair.

Cost

—one of the big reasons
three multiple-housing projects in Atlanta
installed 1,000 Servels

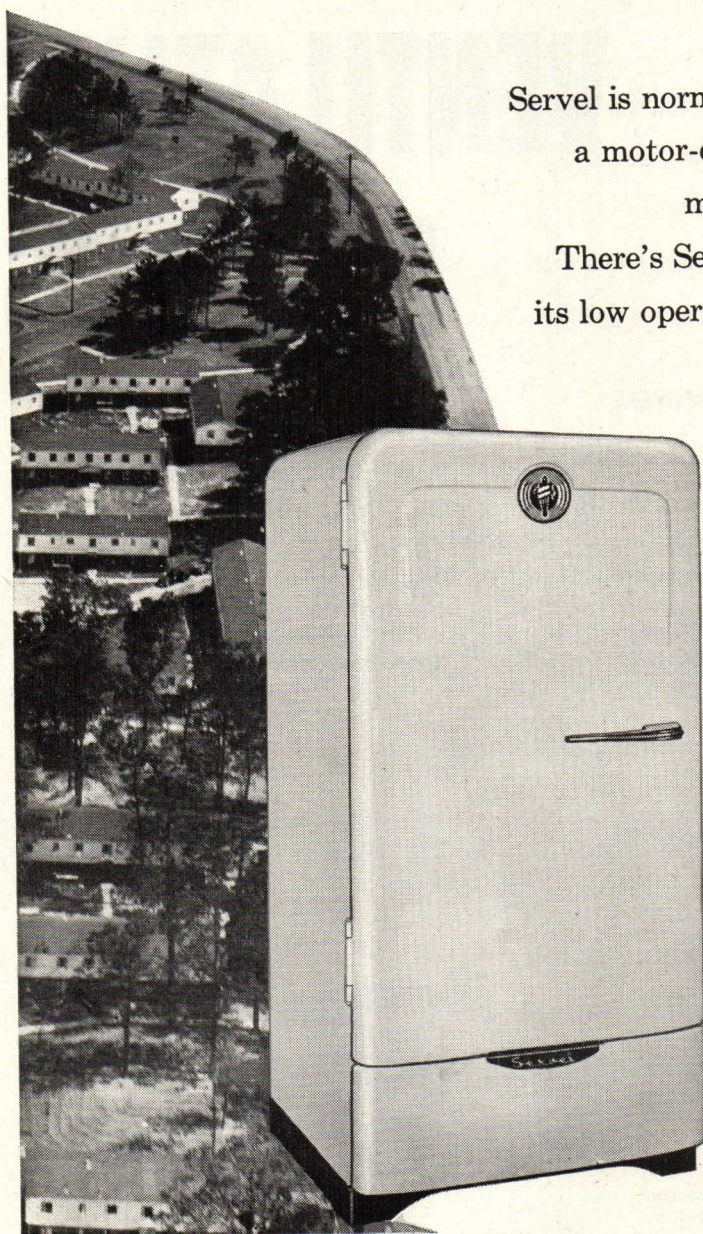
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Year in, year out—the upkeep cost of a
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a motor-driven refrigerator. And Serval offers plenty
more besides rock-bottom maintenance costs.

There's Serval's longer life—its undisturbing silence—
its low operating cost. And these are all *unique* features

... *exclusive* with Serval. Exclusive because
only Serval has a freezing system with
no moving parts. There's no motor or
machinery to wear and grow noisy.

Instead, a tiny gas flame does all the
work. And this assures *silent* refrigeration
... dependable, worry-free refrigeration
with *uniform* efficiency year after year
... and for *more* years, too.



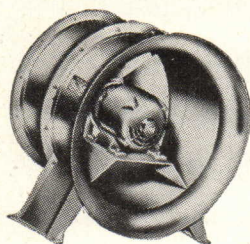
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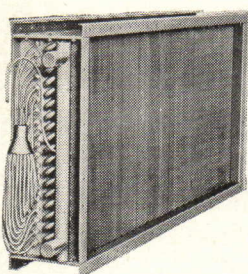
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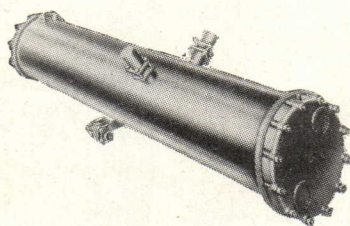
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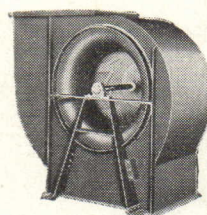
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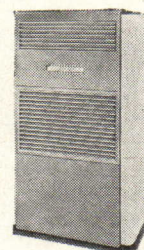
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Refrigeration
Condensers



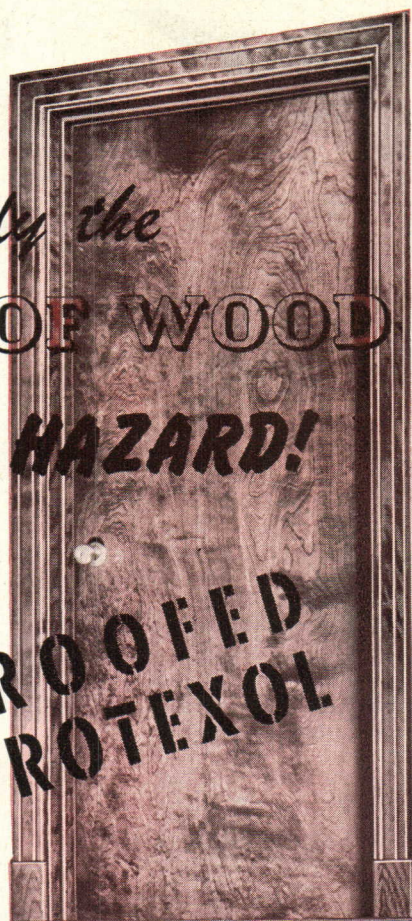
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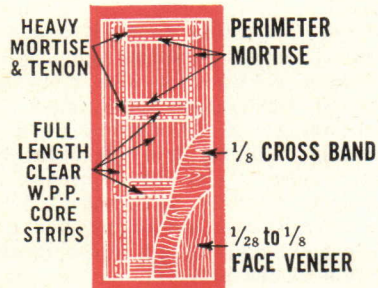
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Sectional view of the Protexol-impregnated Fox-Made Wood Fire Door, approved for 60 and 90-minute fire exposures by the New York Board of Standards and Appeals, and Factory Mutual Laboratories.

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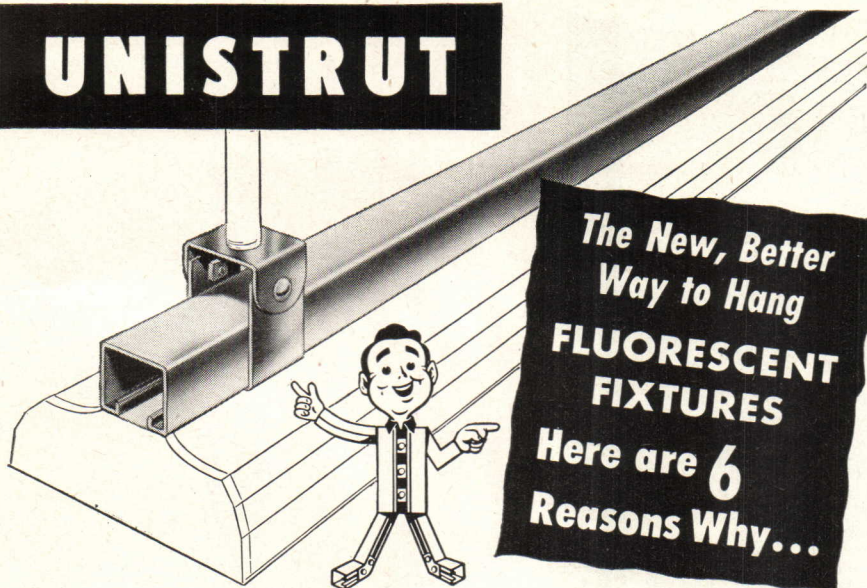
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Unistrut channel is rigid, strong and perfectly straight—gives you true alignment of fixtures. Cleaning, re-lamping or other servicing cannot disturb this alignment.

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Stems or rods can be installed at *any* point along Unistrut channel to overcome possible ceiling irregularities or obstructions. Ideal for continuous runs or intermittent spacing of fixtures.

4 Faster, Easier Installation

Unistrut channel and fittings are attached to fixtures quickly and easily at normal working height or at suspension level. No drilling, no welding, 100% adjustable.

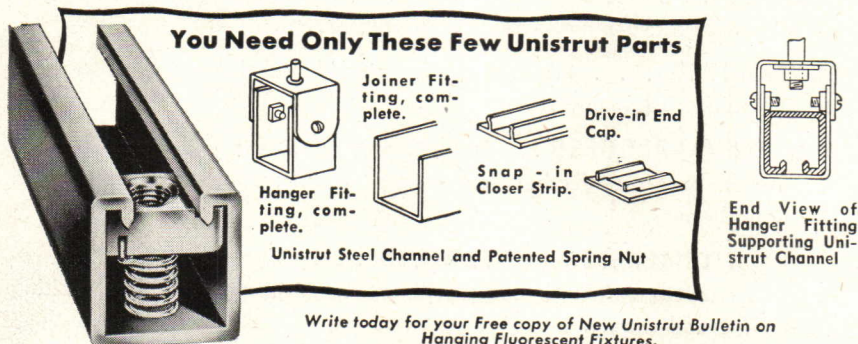
5 Added Safety

Unistrut assures the utmost safety of installation because an entire row of fixtures becomes a single integrated unit—added safety obtained by no other method.

6 Saves Time and Money

Reduces number of canopy and stem sets used, lowers wiring and rewiring costs, eliminates drilling and welding costs, saves planning and installation time.

**Fully Tested and Proved by Contractors — on Thousands of Installations
Demanding the Finest in Lighting!**

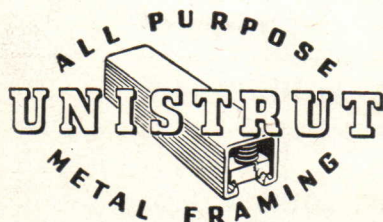


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technical press

(Continued from page 100)

There certainly is a trend toward more standardized and more prefabricated materials, and more complete mechanization of site work, all making for great productivity. But it's a slow process and the trades and the industry will adjust gradually as it keeps happening. The only thing capable of seriously hurting the construction industry is a general business recession for construction is very closely tied to general business conditions. New ways of building, so dear to us architects, don't have much immediate effect on the overall picture. After all, the great majority of building work (90 per cent?, 95 per cent?, more?) is executed without benefit of architects. Even prefabrication of small houses has scarcely made a dent in the housing market. If it were encouraged where it is now opposed, prefabrication could become only a very small fraction of the whole building industry.

So the work goes on regardless, and the trained mechanic does a job of it, whether the structure is temporary housing or the most be-gad-ged commercial building. We probably overlook the vital fact that the mechanic is at least as important to the final structure (and to its design) as the materials that go into it. Incidentally, the training of the mechanic has a lot in common with the schooling of the architect—it's a training in the principles and theories and materials of his field; also, but secondary, the skill in using his tools. The architect's field is broader but it's a question whether he gets as solid a basis in facts and practices that he can use.

It is interesting that ex-carpenters and bricklayers comprise the majority of small contractors. The most generalized work, apparently, gives the best background for handling the whole job. The building field offers the best opportunity of any for a mechanic to get into business for himself. There are a tremendous number of such small businesses, making up a considerable portion of the industry.

Let's face it: the mechanic is vital to building; the architect is not. The architect must *use* building to fulfill his function and he should thoroughly understand the place of the trades in the construction. Some of the more alert architectural schools insist on their students getting training on construction jobs. It would greatly benefit both trade and professional schools if there were more exchange of ideas and

(Continued on page 104)

SHERARDUCT— THE *fortified* RIGID

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Reviews

teachers and books between them. (Some of the very best construction texts originate in the trade schools—they could be used to advantage in professional schools.) Maybe a number of the students in architectural schools would better take up trades and maybe become contractors.

Anyhow, the bulletin "Employment Outlook in the Building Trades" is highly recommended as giving a pretty coherent picture of our most incoherent industry.

construction and construction materials

The Department of Commerce publishes a monthly bulletin with the above title, which gives the latest statistics on construction activity and the various materials—stocks, production, etc., in graph and table form. Feature articles discuss the latest construction trends or a particular material. Very rocky ground, but very productive if you want to scratch for it.

CLIENT RELATIONS

How to Live With Your Architect. Victor Gruen. *Store Modernization Institute*, 40 E. 49th St., New York 17, N.Y., 1949. 32 pp., illus. \$1.50

Victor Gruen, Los Angeles architect, presented a "slide talk" at the Store Modernization Show a year ago which explained in elementary but accurate terms just what an architect is, how he operates, where his fee goes, what plans and elevations are, what the difference is between preliminary plans and working drawings and detail drawings, etc. This book reproduces the amusing drawings that were used in the talk (there are about a hundred) and along with them a minimum of very pointed text. The booklet should be a most useful tool to explain, in terms that can be easily understood, exactly what a client can expect from an architect—and why.

T.H.C.

BIGGER AND BIGGER

Airports and Air Traffic. John Walter Wood. Coward-McCann, Inc., 2 W. 45th St., New York, N. Y., 1949. 159 pp.

Architects and planners who wonder what to do with the fastest and the biggest planes, as well as private craft and helicopters, will find the answers in this book. A sequel to the master-planning *Airports*, this book explains the necessity for regional thinking to achieve well-controlled air traffic. It discusses types of aircraft and their needs which ultimately determine the size, shape and location of airports in a regional setup. Packing his book with aviation statistics, the author indicates the nature of air traffic, sets up size standards for six airports, and provides an address to write to for the latest data.

HELEN MERCNER

DRAFTING MANUAL

Architectural Drafting. William J. Hornung, Director of Training, National Technical Institute. 154 pp., 8½" x 11". Prentice-Hall, Inc., 70 Fifth Ave., New York, N.Y. 1949. \$4.50

This excellent text starts out rather deceptively as just exercises in drafting, but before long it gets into perspective and then launches forth into computations of heat loss, various heating systems, plumbing, electrical specifications, with a page of quiz (titled *Architectural Drafting Examination*) under each subject. It seems to be a sort of study course for apprentices. Not for the professional but darn good for the office boy.

J. R.

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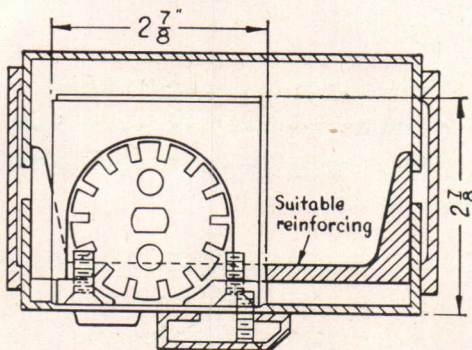
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SERVING THE HEATING, VENTILATING, DRYING AND AIR CONDITIONING INDUSTRIES

out of school

By Carl Feiss



There was something that former Governor Robert F. Bradford of Massachusetts said, at the Smith College Commencement this June, which is so important to us that I must quote the

speech in part, and at once:

"Unless you are ready for it, at this point the whole shining edifice of your education will seem to tumble about your ears. When facts triumphantly

marshalled to pass examination after examination slip unceremoniously away from you; when all the training for living in the atmosphere of purposeful thought seem to be unwanted; when all the hope and enthusiasm and promise that have gone into that training find no ready takers; when all the humdrum details of a decidedly routine daily existence in a dull and prosy world rise up to engulf you; then is the very time you will need your education, all of it. For you will be facing an ordeal more exacting than any medieval ordeal by water or by fire. It is ordeal by disillusion."

Ordeal by disillusion. How well we know this ordeal in architecture and architectural education! How little have we attempted to mitigate it!

What exactly is this ordeal? What are the discrepancies that exist between schooling and the actual practice of architecture? It is in the difference between school and the world outside that one of the major problems of architecture arises. There will be many who feel that this difference is inevitable and proper; that the necessary adjustment of the student to practice forms a vitalizing experience which toughens the fibre and matures the youngster. We oldsters have all been through it and look at us, we are fine. Anyone who can't stand the gaff couldn't make a good architect anyway.

Since earliest history, all cultures have required of the adolescent some form of toughening initiation. The most primitive tribes in Central Africa, the islanders of the South Pacific, the American Indian, the Spartan Greek. (The old "survival of the fittest" stuff!) However, there are two real differences between the method of a primitive culture's initiating for adult life and our primitive method.

In primitive cultures, the child and adolescent are fully aware of the strict ordeals through which they must pass; while with us, the parents and schools seem to wish to avoid mentioning the facts of life. Second, in the so-called "savage" initiation periods, trials, and ceremonies, the acolyte is carefully watched and advised by the elders. The "coming of age" period does not mean that the youngster is given instruction and then pushed out blindly into the night. The process is a continuing one in which the responsibilities of adulthood are involved in apprenticeship training, and training for tribal and

**a new concept
in
window construction**

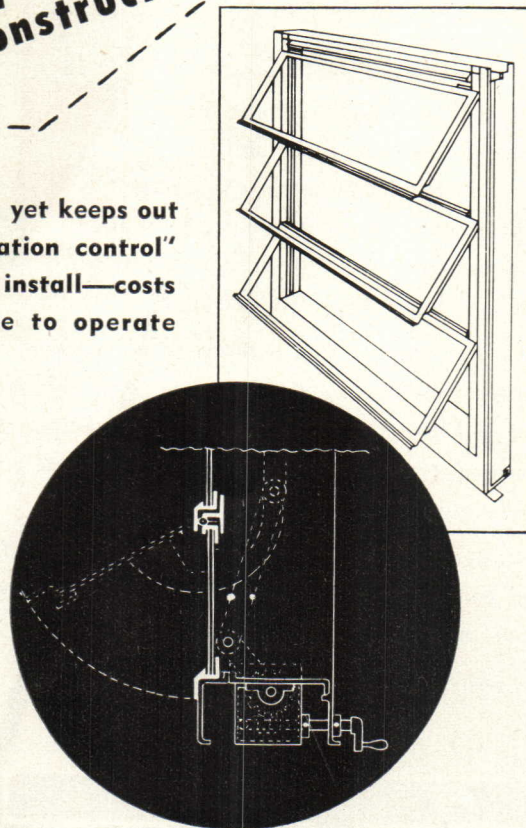
Allows windows to be open yet keeps out wind and rain for "ventilation control" at all times. Costs less to install—costs less to maintain—simple to operate

AERO-VENT windows combine architectural eye-appeal with functional design and need no special building construction for they come complete from factory to fit any standard openings.

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Constructed of finest metals, engineered and inspected for perfect workmanship. Furnished with 18 mesh rustproof aluminum screen to match framework. Easily removed for cleaning.

Available in 2, 3, 4 or 5 unit styles to fit 24", 36" or 48" frame widths. Vent sizes 16" high or 20" high. A style for every need.



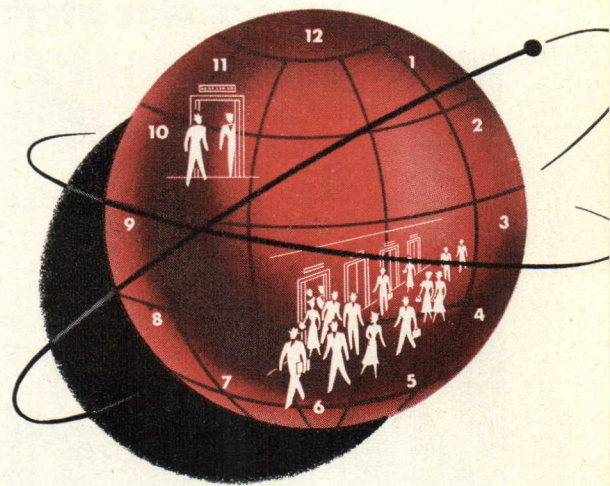
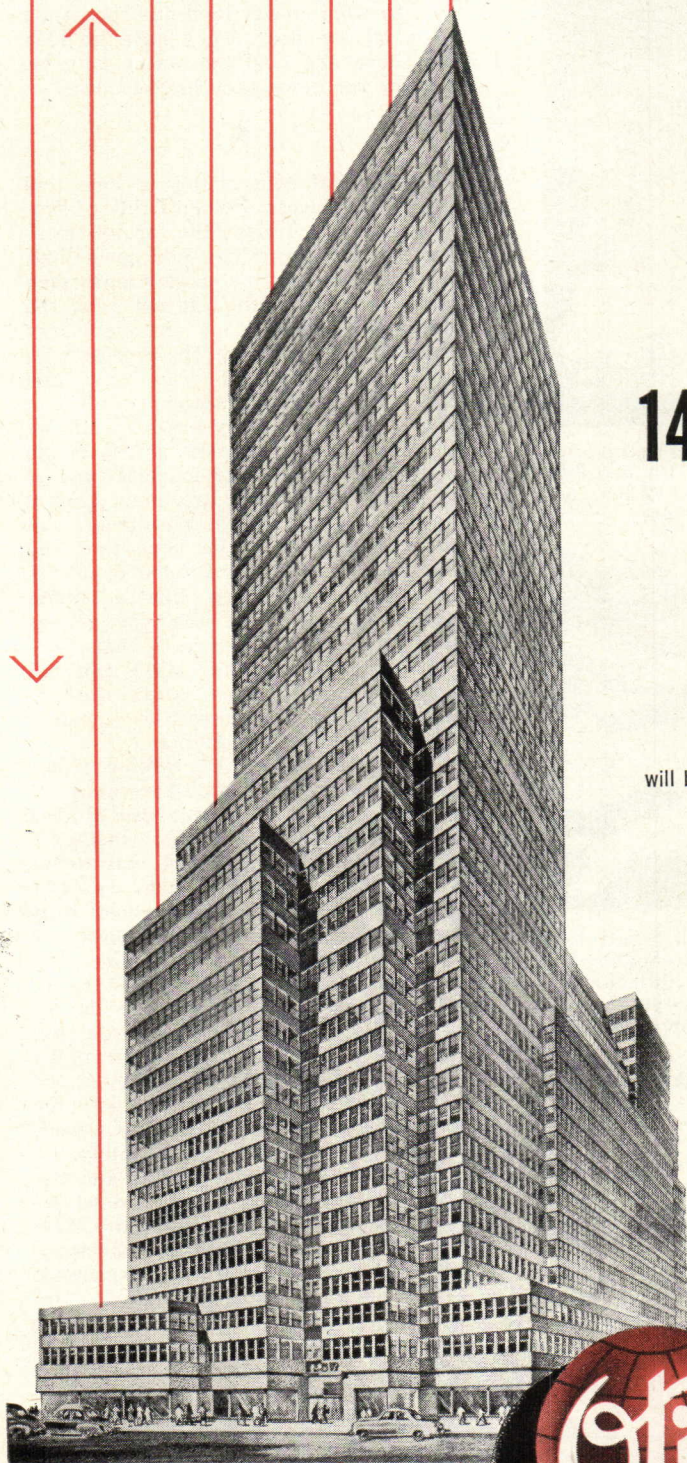
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- Mass produced to bring savings to consumer
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- Windows open out simultaneously
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(Continued on page 108)



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1407 Broadway is to be the "Prestige Headquarters" of the textile and allied industries. Everything's advance-styled. Vertical transportation will be an entirely new concept of elevating. For Otis AUTOTRONIC Traffic-Timed ELEVATORING is the only system that is timed to the 6 traffic patterns of the entire business day. It excels at reducing passenger waiting time — not only during peak-traffic hours but also during the equally important between-peak periods.

It keeps cars evenly spaced throughout the building automatically. They can't bunch at terminals or landings. All floors, all tenants receive prompt, continuous service — with an expense-saving minimum number of cars.

In addition, Otis AUTOTRONIC Traffic-Timed ELEVATORING is dramatic! A passenger merely "touches", not pushes, an electronic directional arrow in the landing fixture. The arrow glows, the call registers, and a car arrives — as if by magic.

Otis Booklet B-721-P explains how AUTOTRONIC ELEVATORING will keep NEW or MODERNIZED buildings on preferred renting lists for years, years, years. Otis Elevator Company, 260 11th Ave., New York 1, N. Y.



AUTOTRONIC traffic-timed ELEVATORING

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William Zeckendorf, Chairman of the Board;
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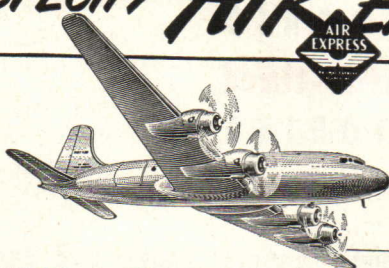
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out of school

(Continued from page 106)

family living; at all times under the watchful eye of tribal custom and the elders with these fixed responsibilities. In our American tribe, we teach our men to swim on dry land and then push them off the dock. They have no idea how deep and cold the water may be, or how far down they have to dive.

Architectural education is a long and expensive process. (When I talk of "education" here, I mean the formal training in our universities and specialized schools.) During this process many men drop out. They either do not have the continued interests or the necessary aptitudes. In any case, the process does a pretty good job of winnowing; and the men ready to graduate at the end of four, five, or six years of intensive charrette are, in theory at least, the pick of the crop. The masters look at them with benevolent eye, hand them a fine plastic sheepskin, and toss them out the port with the hope that the sheepskin, plus a roll of thesis drawings or *projets* will open like a silken parachute and waft the poor dears gently to a field of clover. Without further ado, the port is closed and the academic plane moves on. In the appointed time the process is repeated, without a backward glance.

Sure, I know what I'm talking about. I graduated from a well-known architectural foundry and never once did the school follow up to see: (1) whether I was alive; (2) whether I was doing what I had been trained to do; (3) whether what I had been trained to do was being useful to me; (4) whether I was being useful to the men who were employing me, if I was employed; (5) whether the school could profit by my experience; (6) whether the profession wanted men of my kind of training; (7) how long it took me to find a job with an architect; (8) what kind of jobs I had for 1, 5 or 10 years. Oh well, I could extend the list indefinitely.

The schools are understaffed and the administrators, who were trained as architects and not administrators, find the routines often tedious and certainly different from their own background. The follow-up problem outside the school becomes just one more tough chore. The follow-through goes by default.

At the receiving end, the practicing architect has another point of view. Sure, he's been through the mill and he expects the boys to follow him through the same grindstones. As Dean Turpin Bannister of the School of Architecture of the University of Illinois states in his interesting letter to Henry Tide-man in the August issue of the A.I.A. Journal, "There is a growing unwillingness of practitioners to continue to share the burden of training raw recruits..." There is also a growing unwillingness

(Continued on page 110)

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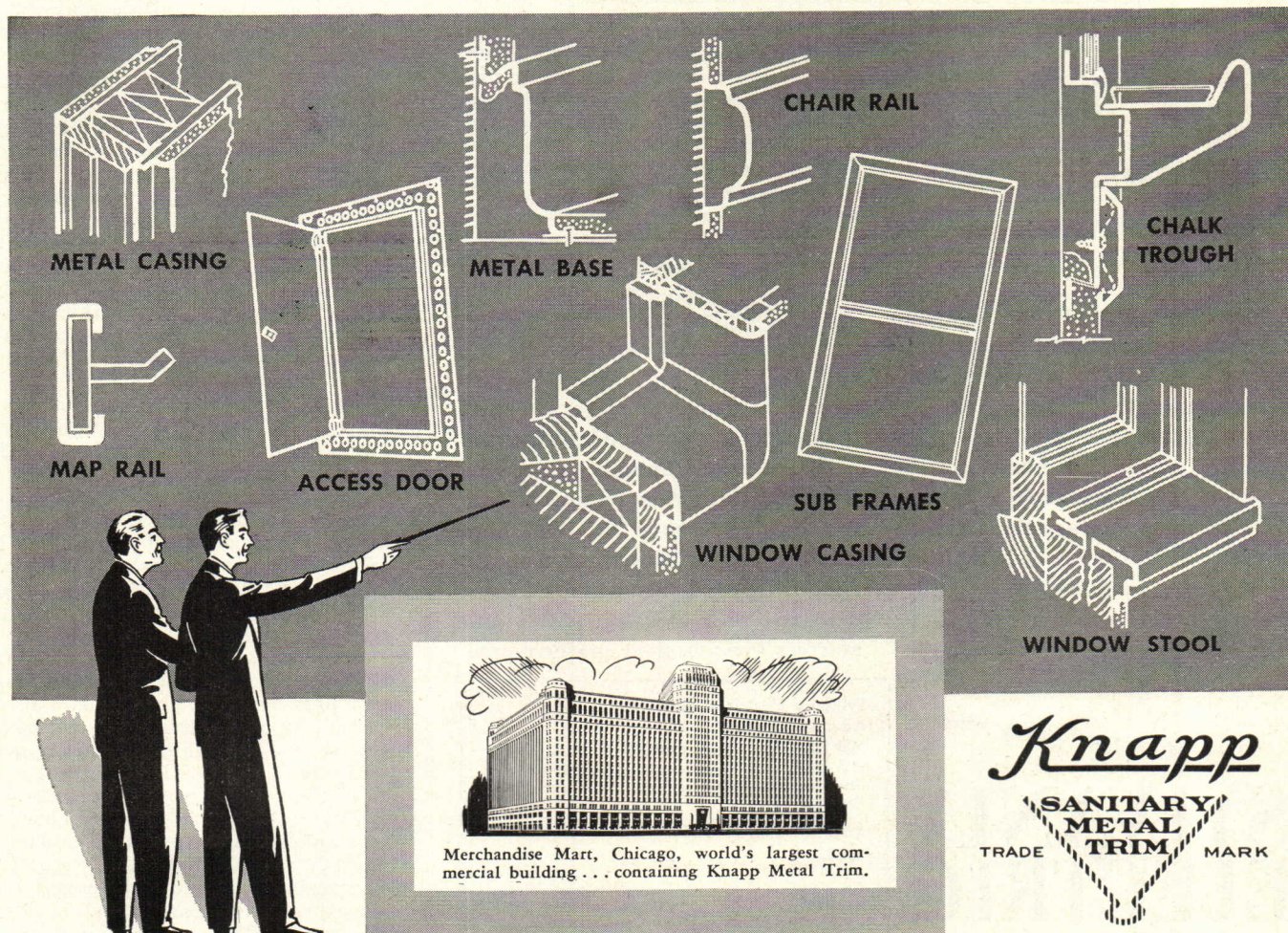
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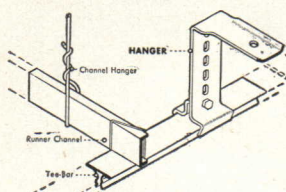
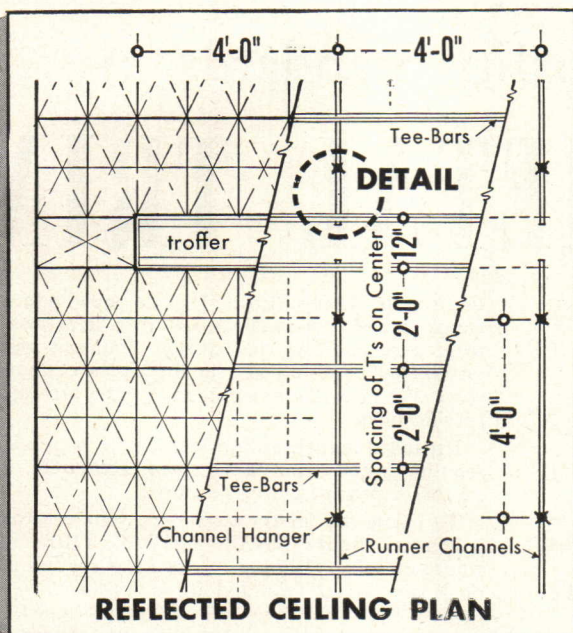
SANITARY
METAL
TRIM

TRADE MARK

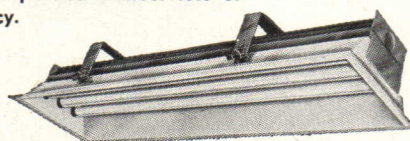
Merchandise Mart, Chicago, world's largest commercial building... containing Knapp Metal Trim.

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Tee-bars engage either the ends or sides of the 12" x 24" metal acoustic tiles, which are center scored to simulate separate 12" x 12" elements. Noise reduction coefficient is 0.85, sound absorption at 512 cycles is 0.97, and the light reflection factor with white factory finish is 0.76. Tiles are fireproof, snapped in place during erection and easily removable for access to service lines, can be washed with soap and water, can be repainted without loss of acoustic efficiency.



THE true economy of Sylvania Troffer lighting will be convincingly shown by any considered analysis of the costs of fixtures, installation, maintenance, and seeing efficiency. Troffers and metal acoustic tile work together to provide modern flush ceilings that are the ultimate in control of noise, flexible lighting, simplicity of installation, versatility in design pattern. The same basic 4-ft. troffer units may be supplied

with one, two, or three 40-watt fluorescent lamps, each lamp having a flux of approximately 60 lumens per watt. Units may be unshielded, louver ("egg-crate") shielded, or Albalite glass shielded. Fixtures are supplied completely wired and are delivered with Sylvania lamps and starters for matched performance.

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I would like to receive the complete series of Don Graf details on Troffers, as they are issued, for my files.

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☐ Architect ☐ Engineer

☐ Draftsman ☐

out of school

(Continued from page 108)

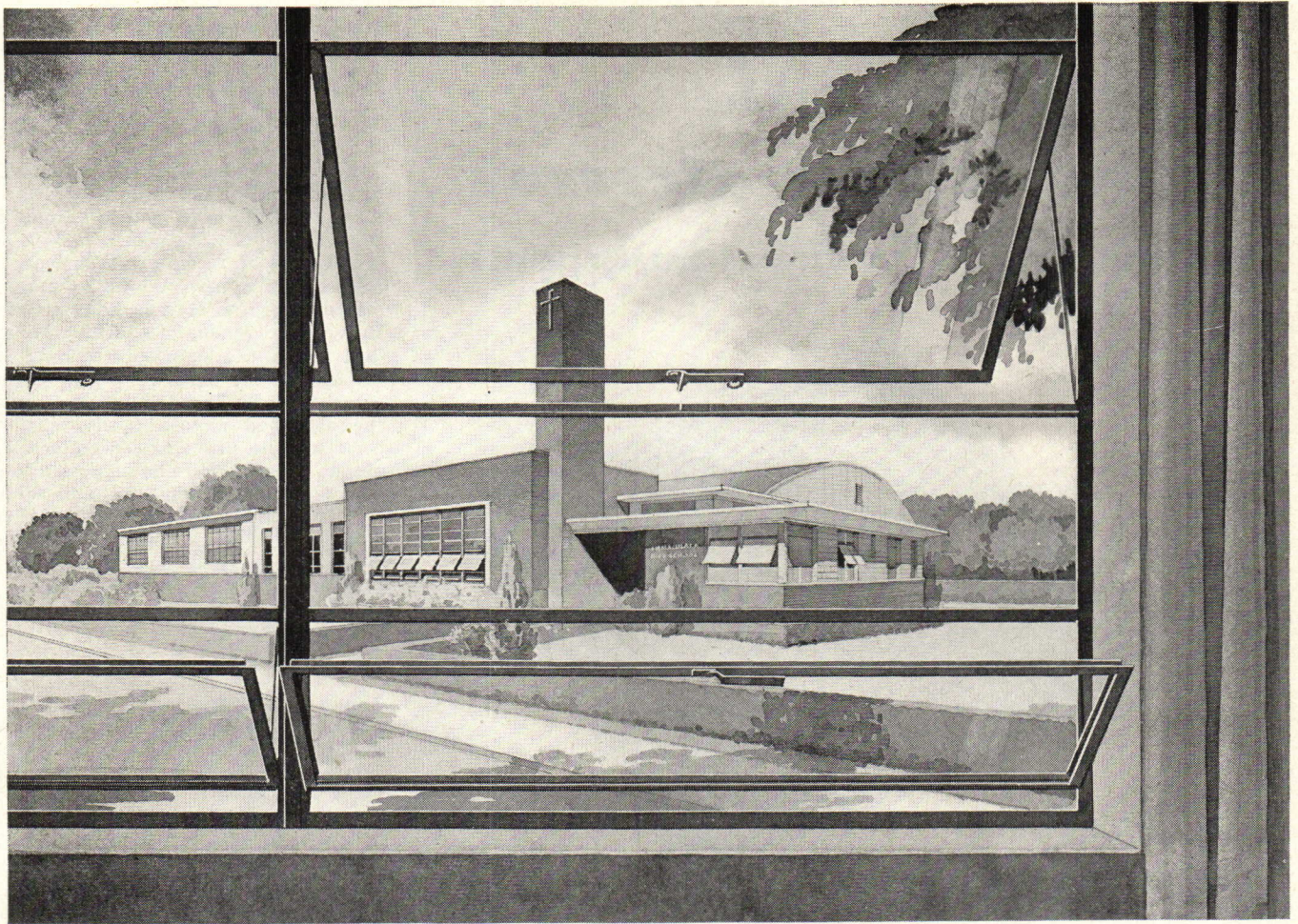
on the part of the practitioners to train the man just out of school. He says he just can't afford the desk space, overhead, and, anyway, why should he have to bother? What are the schools for anyway? The architect is thoroughly justified in expecting his money's worth out of any employee. Much depends, my guess is, on whether the employee knows what is expected of him.

Let us take for a case study, young Corbu Wright, who has always wanted to be an architect. He excelled in math and mechanical drawing in high school and made imaginative and slightly sexy drawings in his art classes. He is admitted to the architectural school at Sullivan State College just as the war breaks out. He has a fine record in active duty, marries, and returns to college eager to pick up, after four years' delay, the threads of his training. Zealously, Corbu charrettes with the other eager beavers in the crowded drafting room. His little lady of the Quonset waits each dawn with a candle in the door, while the brat frets in the suspended cradle for daddy to come home. Corbu goes up the long ladder. He fights through calculus and University Prints and design of a Bathing Pavilion for a Visiting Princess on the Island of Capri. He fights his way through Strength of Materials, Concrete and Steel, and the Design of an Incubating Plant for Aluminum Robots. Young C. Wright receives several prizes for excellence in Design. At the school, a number of great men visit the "design laboratory" and "inspire" the boys. He next takes the money saved by his dear little wife, who has taken in washing and several crew men, and travels widely studying modern architecture and city planning in Sweden and Mexico. He is further "inspired" by what he sees and those he talks to. His return for his fifth year (the G.I. Bill only pays for four) means further sacrifice for him and the little woman. He wins third consolation prize in the Retrogressive Architectural Competition for an Oil-Burning Juke Box and has his face and drawing published—indistinctly, but nevertheless published—on the 14th page of the ads, along with the other prizewinners.

Corbu wins a graduate fellowship to Craniesin to work under the Old Maestro. This has been his dream. For one ecstatic year, he sits at the feet of the Grand Old Man while the family stays with Mother. He redesigns the city of his birth, rings it with Greenbelts, and makes fine models of towering civic centers and hanging gardens. The damned stuff is really beautiful! Young C.W. can really draw and make superb models. He's a craftsman. And he knows his construction too. The influence of

(Continued on page 112)

FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES, SIGN TUBING; LIGHT BULBS; PHOTOLAMPS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES



Immaculata High School, Birmingham, Ala. Director: Rev. E. J. Lawler. Architect: Wilmot C. Douglas, Birmingham, Ala. Contractor: Daniel Construction Co., Greenville, S. C.

Proper daylighting and adequate natural ventilation are vital requirements in modern school planning. Studies have proved conclusively that metal windows provide the best source of daylight plus controlled ventilation. With Lupton Metal Windows, rooms have a maximum amount of daylighting, even on overcast days. Better vision for students is stimulated through Lupton Metal Window design because of the greater glass area and slender frames and muntins. Drafts and breezes can be controlled for room comfort with ventilators that open to any desired degree despite inclement weather. Lupton Metal Windows are weathertight. Will not rot, warp, swell or rattle. There is a Lupton Metal Window for every type of building—industrial, residential, commercial. Write for our Catalog or see it in Sweet's.

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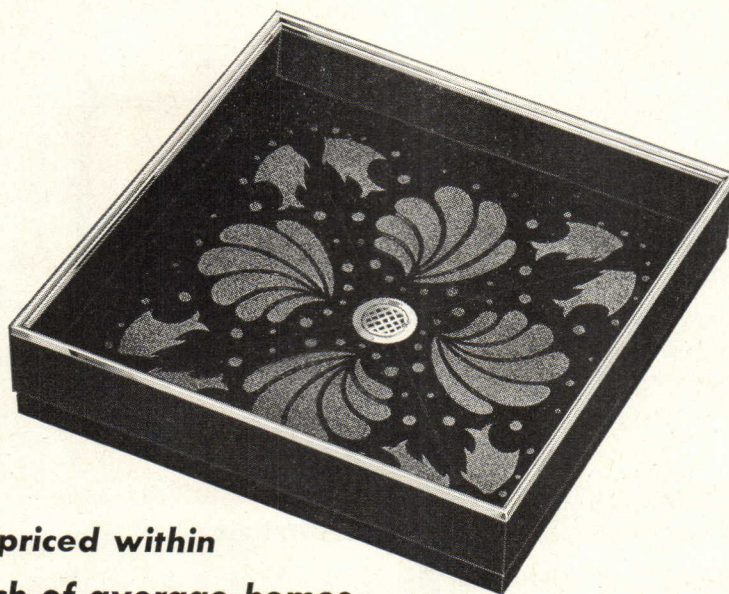
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LUPTON METAL WINDOWS

THE ONE

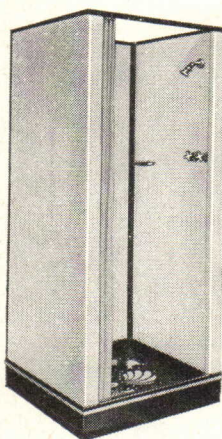
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that belongs in the finest bathrooms



**Yet it's priced within
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Vitreous porcelain is the material you associate with standard bathroom fixtures. Weisway's stainless vitreous porcelain receptor, with exclusive Foot-grip, No-slip floor, is one of the features which have established Weisway as the *quality* Cabinet Shower, suited to the finest surroundings.



*Weisway Standard Model
High quality at moderate price.*

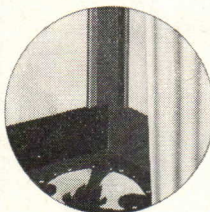
Formed in one piece of heavy enameling iron, with a vitreous porcelain surface that is steel-strong and glass-hard, the Weisway receptor is guaranteed leakproof, assures a lifetime of satisfactory service. No seams or joints to crack — nothing to crumble away. Non-absorbent, easy to keep clean and thoroughly sanitary.

No metal underpans or wall flashing — no messy mastic — or other "waterproofing" methods are required with the Weisway receptor. One man handles it easily and installs it quickly.

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Here's added protection against leakage at the most vital spot in cabinet shower construction. A full 4 inches from textured floor to top! Contrast this with the shallow pan or slab-type base. *Weisway's extra depth and quality protect your reputation—assure client satisfaction. Write for details.*



HENRY WEIS MFG. CO., INC., 1121 Weisway Building, Elkhart, Indiana

out of school

(Continued from page 110)

Van der Gropius is evident in all detail.

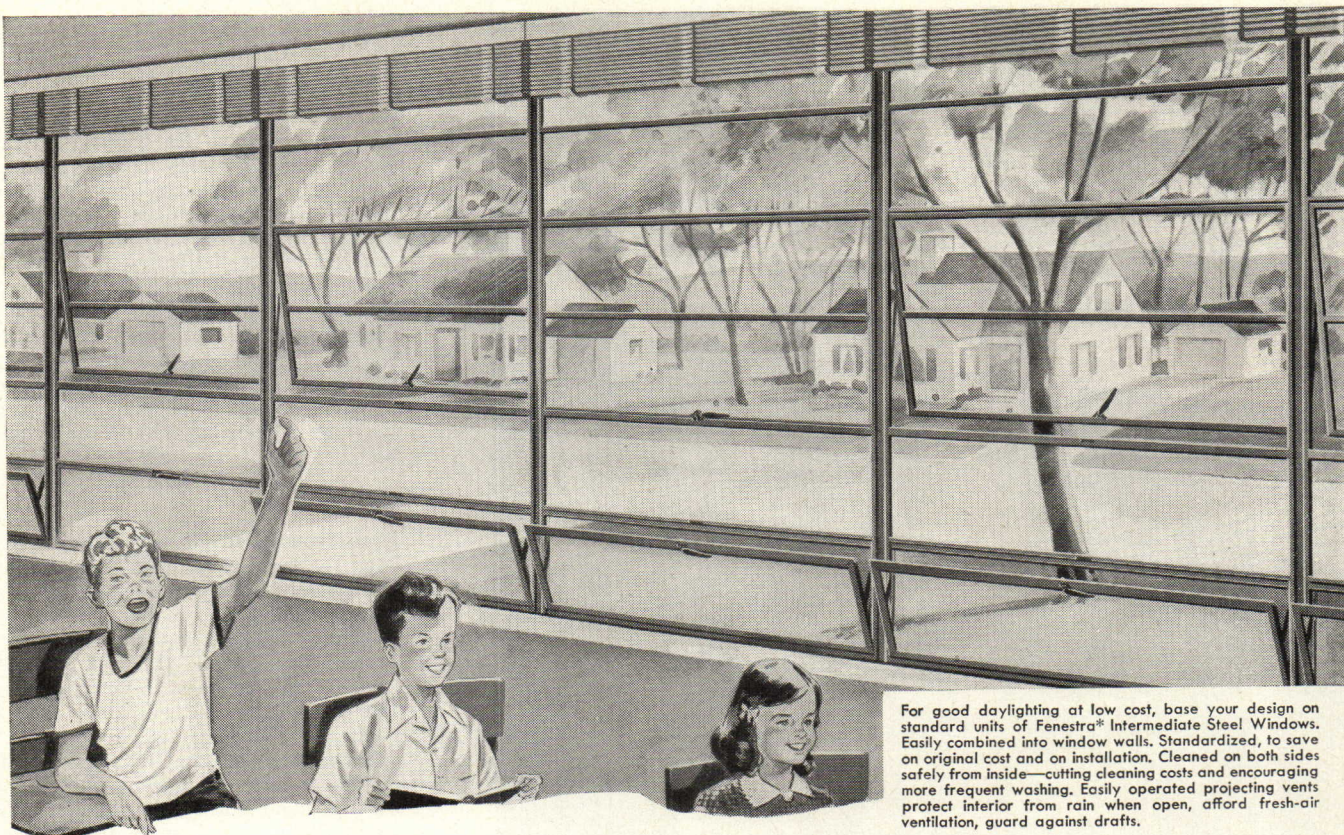
Finally, Corbu Wright's education is finished. All he needs is three years in an architect's office, before he qualifies to go before the State Board. With several letters of recommendation, a portfolio of drawings, and high hopes, he sets out for the leading office in town. Here, dear reader, we draw the curtain. Even a toughened educator like me dreads the sight of Corbu Wright after two weeks of hunting through the classified pages of the telephone book for the practicing architect with all the "inspiration" he has come to expect, and the design lab., and all the rest. Two months later, at 90¢ an hour doing urinal details for bus terminals, Corbu has reached the all-time low. He is undergoing the necessary ordeal by disillusion.

Maybe it is necessary? I don't know and am asking you. Maybe our hero will build his dream cities in the end. Maybe, and most likely he won't. Here begins the second period of winnowing out. As Governor Bradford implied, this is the time when our hero needs his education—all of it—just to endure.

There are two sides to the canvas, as I have indicated. The practitioner himself often enough finds the young hopeful arrogant and uncooperative. Years of hard work in an unreceptive community, fights with economic cycles, problems with clients, labor, and lending institutions, and the multitude of experiences which have continued the practitioner's education out of school are unknown to the youngster. All he sees is what is on the boards at the time he applies for a job. His attitude towards his employer and his fellow employees is prejudiced by the excitement and colorful activity which prevail in most schools today. The architect's office seems drab in comparison and it often is. (I wonder why so many architect's offices look like Hell. Most drafting rooms, let alone the reception room or client trap, look as though design had not yet been invented and technology was a thing of the past. But that is another problem. We will deal with Cinderella in another chapter.) In the meantime two mistrustful men are eying each other, one saying to himself, "There, but for the grace of God, I'll be in a few years"; and the other, taking in a crew haircut and tweed jacket, saying, "O.K., you young bastard, I need a draftsman and here's where I'm going to get some work out of you, if you can take it." All too seldom do the two men know what to expect of each other, and much unhappiness grows out of this lack of initial rapport.

This whole situation seems most curious in the light of our experience. Many

(Continued on page 114)



For good daylighting at low cost, base your design on standard units of Fenestra® Intermediate Steel Windows. Easily combined into window walls. Standardized, to save on original cost and on installation. Cleaned on both sides safely from inside—cutting cleaning costs and encouraging more frequent washing. Easily operated projecting vents protect interior from rain when open, afford fresh-air ventilation, guard against drafts.

NOW...research gives you a low cost way to *Better Daylighting*

Now your school design can make classrooms easier to work in—to see in, to teach in. Now you can incorporate in your original plans better quantities . . . better distribution . . . and better quality of eye-easy daylight. And get those results economically.

Detroit Steel Products Company, long a leader in daylighting research, will send you the results of extensive new studies made under actual classroom daylighting conditions.

Solutions of such problems as these:

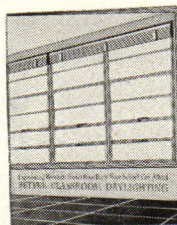
How to admit enough daylight to make studying more easy, more pleasant.

How to reflect daylight into the farthest corners to bring light to every child . . . to minimize brightness contrasts.

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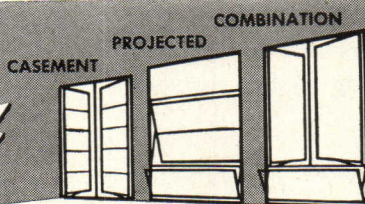


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Here is a fact-full guide for better daylighting design . . . a way to get excellent results with economical, easy-to-obtain, standard materials. For your free copy, simply mail the coupon.

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out of school

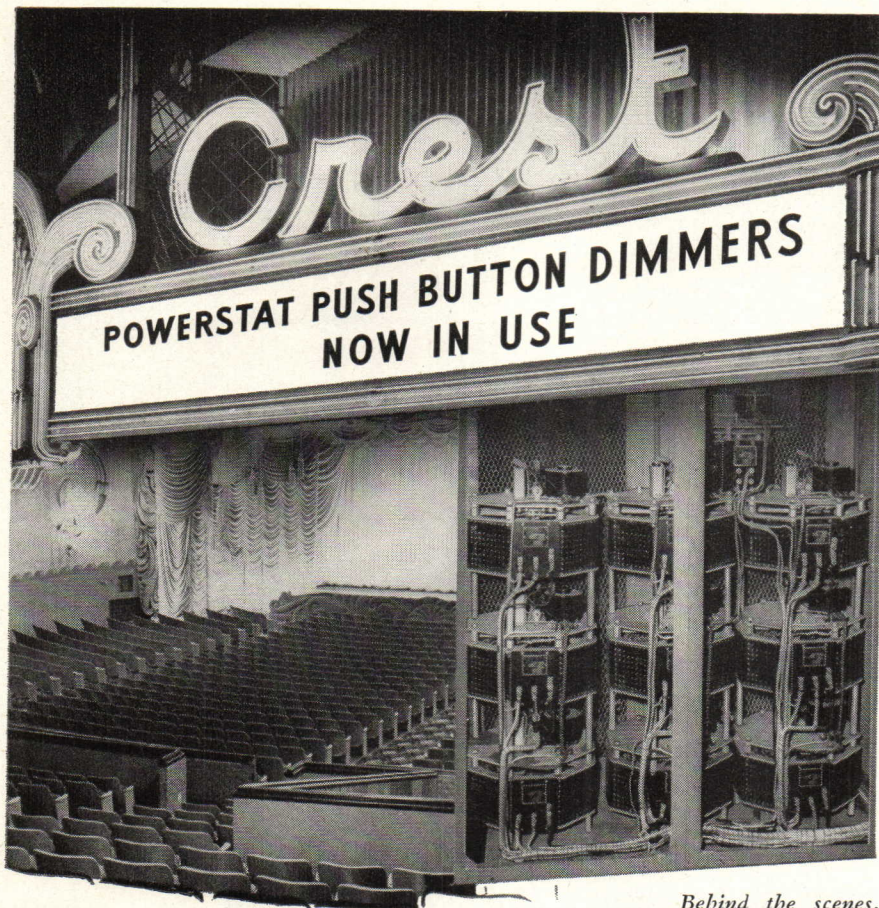
(Continued from page 112)

employers have been to the same kind of school as have the young graduates. Their memories may be short or they may wish to forget their own gay young dreams. All too often the architect himself has been so altered by his own long ordeal by disillusion that the memory of his hopes and ambitions is not pleasant to look upon, or maybe he has just forgotten. Architectural practice in the United States today, for nine-tenths of the practitioners and the men in their offices, is not the glamour job we wish it were or that it really might be.

I am convinced of two things. First, that the transition from formal schooling to office must be a studied plan; and second, that the ordeal by disillusion is not an acceptable method. This is going to call for a real effort of schoolmen and the practitioner to get together to find out what each believes in. We are back to a fundamental inquiry.

Since one of the reasons for this column is to find out what we do believe in, and my beliefs may not agree with yours, let us concentrate for a moment on the problem of getting together. This is a difficult and sometimes embarrassing part of the job. The schools have been not altogether too eager to open their doors to objective inspection from the practitioner. I have encountered some schools that have avoided actual contact with them. Other schools are so isolated in location that continuing contact with a variety of practitioners is almost impossible. In many cases, of course, the faculty are experienced practitioners themselves. Being limited in their ability to employ more than a few of their ablest students, they too have recourse to our sloppy system. Few schools have a placement service, which is regrettable because much could be learned from one. Few local A.I.A. chapters have such service either. So what we know about the effectiveness of our teaching and the immediate usefulness of our graduates seems largely to rely on the word-of-mouth accounts of graduate and practicing architect. There is enough in them to give us pause.

In drawing this essay to a close it should be made clear that I believe without qualifications that the school must continue to try to turn out men of the highest possible ambitions in design and technology. Without intrepid and inspired men architecture dies. Genius, though born and not bred in men, must be found and fostered. This all schools must strive to do, and there can be here no compromise with the practice of any art or science. And, since true architecture is at all times a wedding of this combination with the business of building, as a schoolman I urge the practitioners to join us in raising the level of the ambitions of practice.



POWERSTAT Dimmers were the choice of management when plans were made for Long Beach, California's beautiful new Crest Theatre. The prototype of the theatre-of-the-future is a prefabricated unit designed for small towns and the export market. Only the most modern equipment was incorporated.

Behind the scenes, POWERSTAT Dimmers respond to pushbutton control from station in projection room.

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Fox West Coast Theatres
ELECTRICAL ENGINEER: C. R. Prouse

In this theatre-of-the-future the dimming apparatus had to be remotely located, yet controlled from a panel in the projection room. Motor-driven **POWERSTAT** Dimmers were installed with pushbutton control to meet this requirement. Thus, the projectionist, in his booth, has convenient and dependable fingertip lighting control. The push of a button brings lighting up to full intensity or lowers it to complete blackout. Intermediate degrees of brilliance are achieved by stopping the Motor-driven **POWERSTAT** Dimmers at any point between the two extremes.

Planning a new theatre? Renovating an old one? It will pay you to investigate **POWERSTAT** Dimmers for houselight control. Send for complete information today — then consult your illuminating engineer.

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POWERSTAT VARIABLE TRANSFORMERS • VOLTBOX A-C POWER SUPPLIES • STABILINE VOLTAGE REGULATORS

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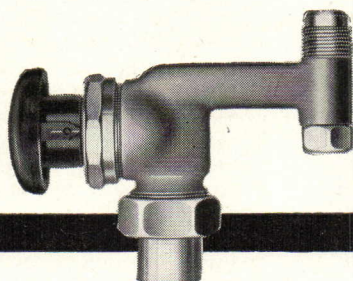
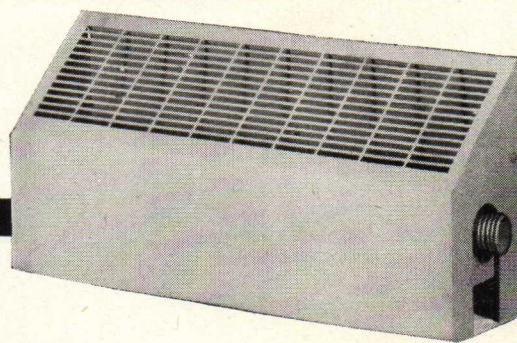
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HEATING MEANS BETTER HEATING

AND JOBBERS IN ALL PRINCIPAL CITIES

it's the law

By BERNARD TOMSON



Contracts for public works need not necessarily be awarded to the lowest bidder. To award the contract to anyone else is, however, an open invitation to litigation by disappointed contractors. Therefore, great care should be exercised before the lowest bid is re-

jected. The contractor to whom the contract is awarded, where he is not the lowest bidder, should review the situation carefully, particularly where there is a threat of a law suit. It has been held, under some circumstances, that the contractor himself may not be able

to recover for the work done if the courts determine that his contract was illegally awarded.

Statutes and ordinances which control the award of public contracts generally call for competitive bidding. The language used is to the effect that the contract is to be awarded to the "lowest bidder," the "lowest responsible bidder," the "lowest and best bidder," or something similar. The lowest bidder in terms of dollars and cents may not be the "lowest responsible bidder," or the "lowest and best bidder," and thus much discretion is left in the hands of public officials selecting the bidder to whom the contract will be awarded. The term "responsible," as used in the term "lowest responsible bidder," does not refer merely to financial responsibility alone but also, among other qualifications, to skill, business judgment, honesty, and fidelity to purpose. The reputation of the contractor, his performance under prior contracts and the quality of his past work may be considered in determining responsibility. If the public authorities in exercising their discretion have not acted arbitrarily, the courts will not ordinarily interfere with their selection of a competing contractor, even though such competitor did not submit the lowest bid.



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Daniel Perry, Arch. Aldrick Larsen, General Cont.

SOLVED! THE PROBLEM OF YEAR-ROUND DRAFT-FREE VENTILATION!

For the school faced with the problem of obtaining satisfactory ventilation over a wide range of temperatures and climatic conditions, Gate City Awning Windows offer a most economical solution.

The new school at Centereach, L. I., is a good illustration. In an exposed location, it requires maximum summer ventilation and closely controlled ventilation in winter.

By including clerestory windows, increased circulation was achieved. The desired illumination was obtained by flanking the adjustable Gate City Awning Windows with fixed side lights. In cold weather, there will be no unhealthy drafts,

because the sash deflect incoming air above the heads of pupils and teacher. Since Gate City Awning Windows are made of wood (toxic treated for durability and resistance to rot) they are not subject to condensation, and are easily maintained.

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When planning a school, hospital or other institution, investigate Gate City Awning Windows.

For further information, write Gate City Sash & Door Co., Dept. P-II, Fort Lauderdale, Fla., or see Sweet's.



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Gate City

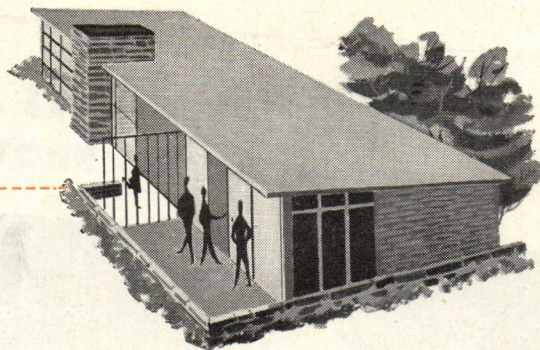
In evaluating bids the public officials who are in charge of awarding the contract generally consider the adaptability of materials or workmanship to the purpose contemplated. For example, Arlington County, Virginia, recently accepted competitive bids on a municipal incinerator. Specifications provided for two types of plants. One set of specifications was drawn for hand-stoked incinerators and a second set of specifications was drawn for mechanically-stoked incinerators. The provisions under which the contract was to be awarded provided that the county board could accept that proposal which in its judgment best served the interests of the county. The county board decided to award the contract to a bidder who proposed to construct the hand-stoked incinerator. One of the contractors who had based his bid on the mechanically-stoked incinerator brought legal action to compel the county board to reverse its decision. His contention was that the bids had not been properly evaluated and that the contract had been arbitrarily and improperly awarded.

The evidence revealed that the mechanical unit which was to be used for

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(Continued on page 118)

MODERN HOMES



call for **COPPER** soil, waste and vent lines

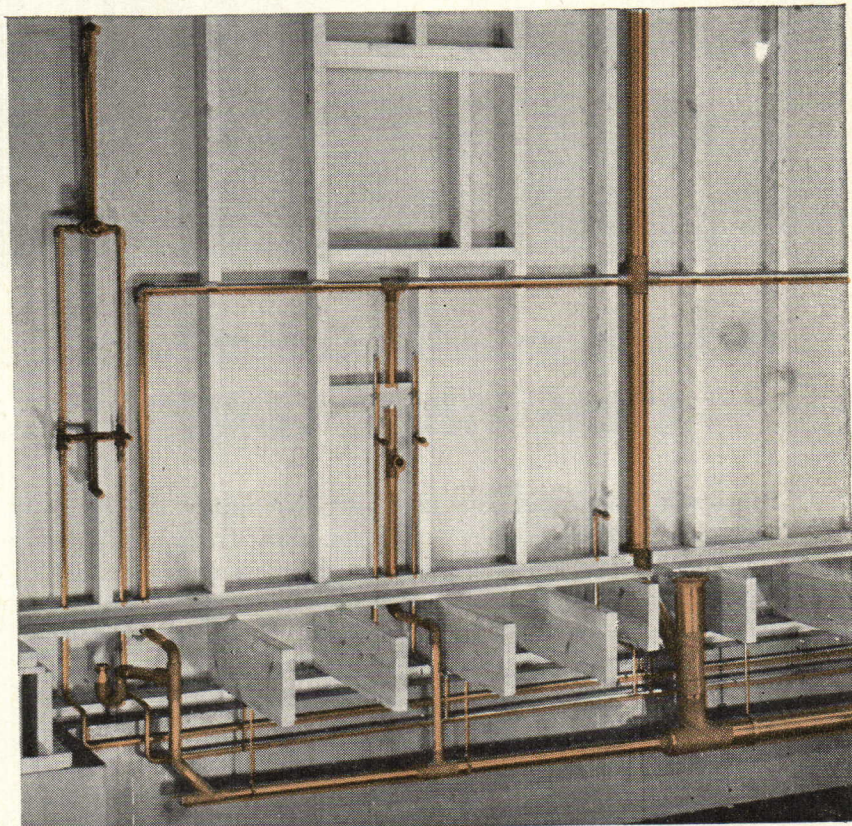
Increasingly—and for the same reasons it's being used so widely for water and heating lines—architects and owners are acknowledging that copper is the ideal pipe for soil lines, waste lines and vents. The evidence? More and more local building codes are being revised to include the use of copper tube and solder-type fittings for this purpose.

Here are the reasons in a nutshell:

An installation of copper tubes using ANACONDA Type M, which are manufactured for this purpose only, costs no more than other materials. The heavier gages, Type K and L Copper Tubes, can be installed for but little more.

Copper tubes are light, take less space—20-foot lengths simplify design, eliminate many joints.

Copper tubes give greater owner satisfaction, better performance because smooth bore drains faster, reduces possibility of stoppages.



Demonstration house-section illustrates an all-copper plumbing installation. Water supply lines are Type K. Closeup shows economical space requirements and the simplicity of using solder-type fittings.

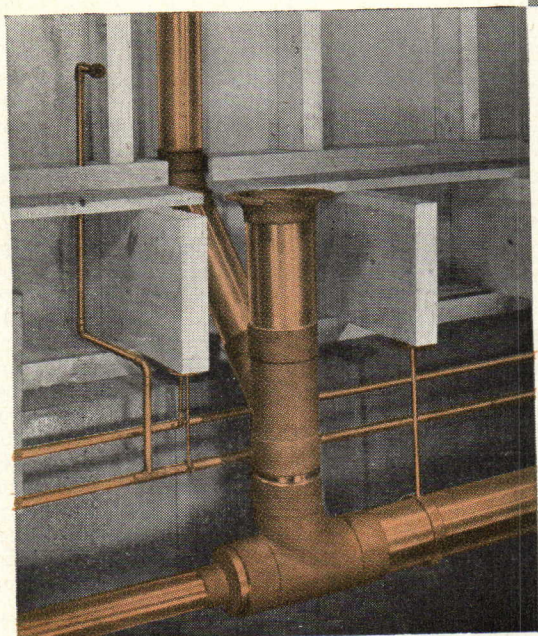
If you would like specific information or particular details, we will gladly supply them. Just write to The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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There's a happy marriage of beauty and utility in factory-prepared portland cement paint, made with Atlas White Cement. There's bright, refreshing whiteness or color. And, when applied to concrete, concrete masonry, stone, brick or hollow tile this handsome finish penetrates the pores, forming a protective coating that resists moisture, dirt and dust.

Besides its decorative utility in portland cement paint, Atlas White Cement, when used as a matrix, also brings out clearly and permanently the rich values of color pigments and aggregates used in Terrazzo, Stucco and Architectural Concrete Slabs. An infinite variety of color tones and shadings is possible.

Atlas White Cement complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Concrete made with Atlas White Cement cleans easily. Maintenance costs are low.

For further information on the uses of Atlas White Cement, see *SWEET'S Catalog, Section 4B/3 and 13C/5*, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

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FOR TERRAZZO, PAINT, SLABS, STUCCO

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it's the law

(Continued from page 116)

the mechanically-stoked plant had been in operation for only three months. The court held that the county board had not been arbitrary in determining that the mechanical unit was in an experimental stage and that it, therefore, was in the best interests of the county to approve the bid for a hand-stoked incinerator, even though this bid was not the lowest dollar bid. The court, therefore, refused to interfere in the exercise of discretion by the local county board.

On the other hand, in a recent decision in New York State, where a town board had granted the contract to the highest bidder, a court set aside the award on the ground that such award was arbitrary in nature. The Town Law of New York provides that the local town board "shall determine the lowest responsible bidder. . . ." In the case at issue three contractors were approved by the town board in identical language as being "responsible bidders," but the board did not award the contract to the lowest bidder of the three. The court stated:

"The court recognizes that the Board has proper discretion in determining the qualifications of bidders, but after fully qualifying all bidders, it cannot arbitrarily ignore its obligations imposed by law to award the contract to the lowest responsible bidder."

The court further held that the chosen contractor could not recover for the work which he had performed. The court stated that:

". . . Under such circumstances the relator's contract was illegal and void, and that he cannot recover for his work is settled beyond controversy by the authorities . . . (Brady v. Mayor, &c., 20 N.Y., 312; McDonald v. Mayor, &c., 68 id., 23; Dickinson v. City of Poughkeepsie, 75 id., 65)."

Relative to the various statutes and ordinances which require competitive bidding in public contracts, a serious problem arises when the municipality wishes to use materials or processes which have been patented. Specifications which call for a patented article or process often eliminate free competition in the bidding. Therefore, a conflict arises between the desire of the government body to receive the benefits of the patented article and the prescription of law which requires competitive bidding. For example, the code of Iowa City provides that public work shall be let to the lowest responsible bidder. The same code further provides that the city council in authorizing street improvements shall state the kind of material to be used. The city council in its advertisement for bids specified certain patented pavement. The con-

(Continued on page 120)



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(Continued from page 118)

tention was made that this specification was illegal in that it restricted free competition in the award of the public contract. The Supreme Court of Iowa in determining that the advertised specifications were not unlawful held that the requirement of competitive bidding meant that "there must be competition where competition is possible." The weight of authority is in agreement with the Iowa Court to the effect that municipal authorities are entitled to specify or designate a patented material without violating the law of competitive bidding on public contracts if it is not the purpose of such designation to restrict competitive bidding.

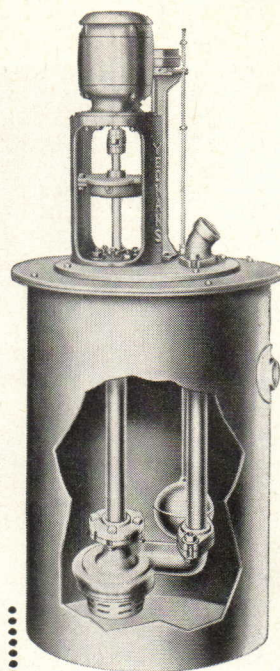
A Court of Connecticut, in also rejecting the contention that it was not lawful for municipal authorities to specify a patented article in advertising bids on a public contract, stated that any other rule would prevent the municipality from availing itself of new inventions.

"This is offensive to the fundamental principles of a sound public policy, and would require the city to 'travel in the same paths in which the predecessors trod,' without benefit from any new discoveries of science, or any new advances in matters of work applicable to public use."

There are legal decisions in some jurisdictions which have held that the specification of patented or monopolized materials by public officials in advertising bids for public contracts is unlawful as a violation of the statute which calls for competitive bidding. In an effort to obtain the advantages resulting from the use of patented articles, and at the same time to maintain the advantages which result from competitive bidding, some municipalities obtain agreements from the owner of a patented article or process to permit its use on equal terms by all bidders. A few jurisdictions as a prerequisite to bidding require that all competing contractors be permitted to use the patented article or process by the owner of the same, so that there may be a fair and reasonable opportunity for competition.

In summary, it may be stated with respect to contracts for public works:

1. The lowest bidder is not necessarily the successful bidder.
2. Before the lowest bid is rejected, however, care should be exercised that the rejection of the bid is not arbitrary.
3. Most courts hold that public officials may provide specifications calling for a patented article or process.
4. Under such circumstances, however, in most cases it is best to stipulate that the contractor owning such patent should agree to permit its use on equal terms by all bidders.



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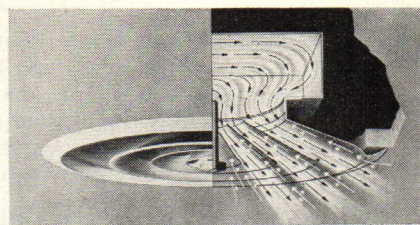
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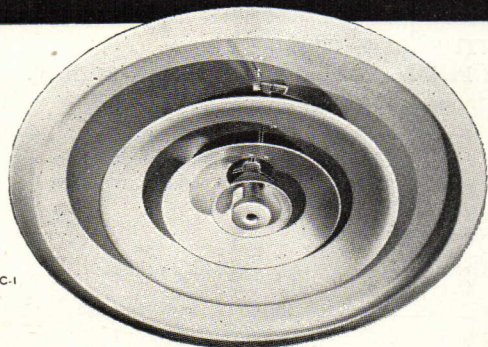
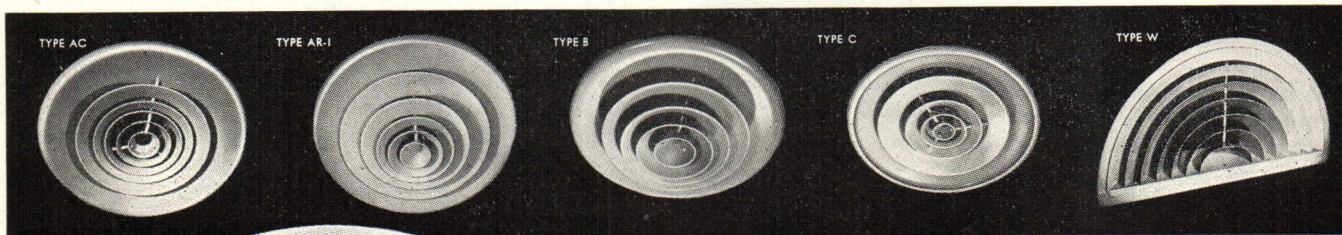
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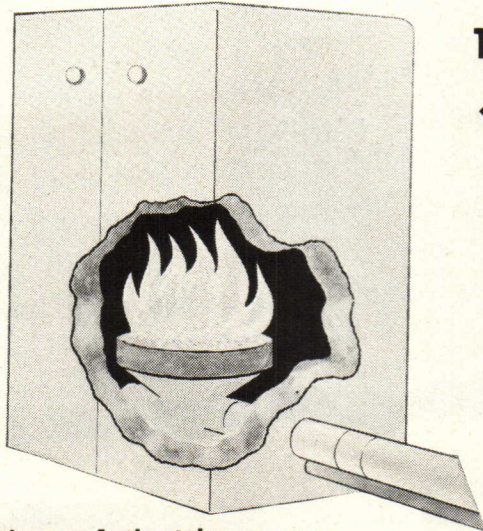
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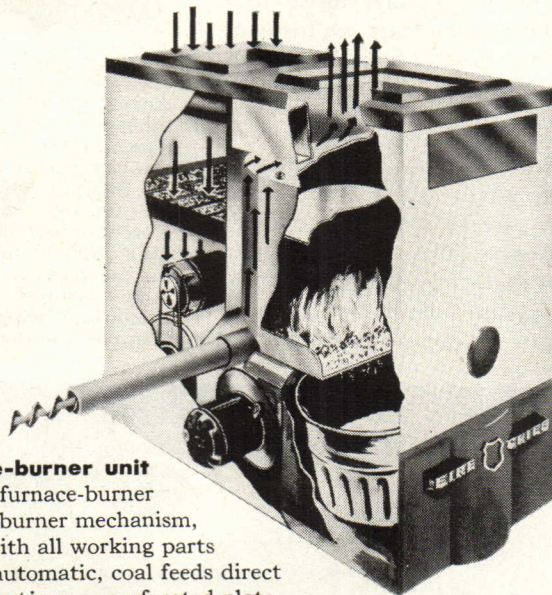
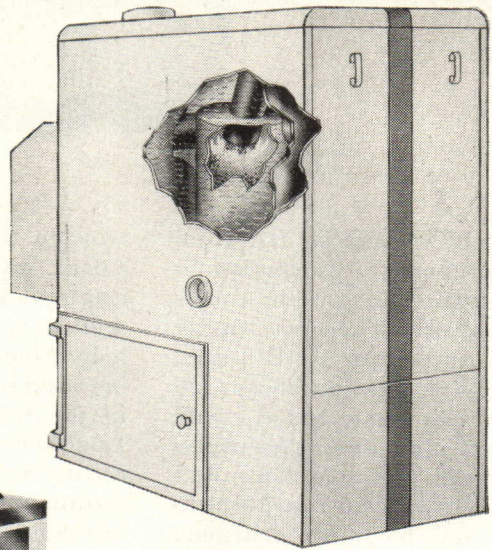
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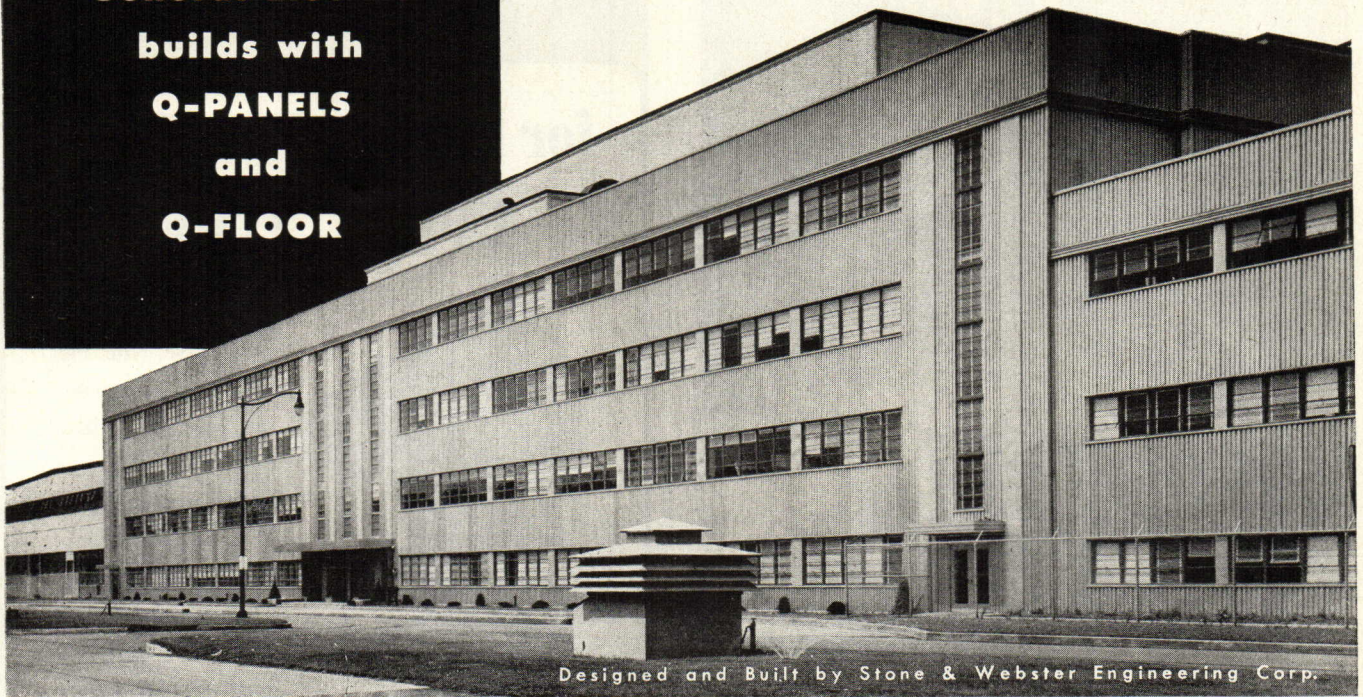
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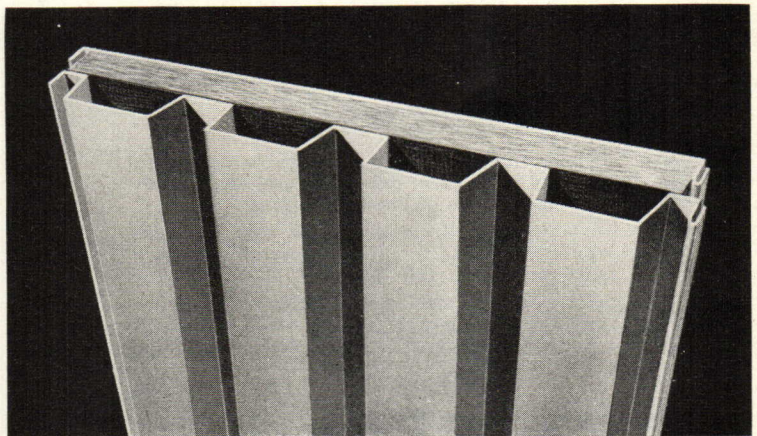
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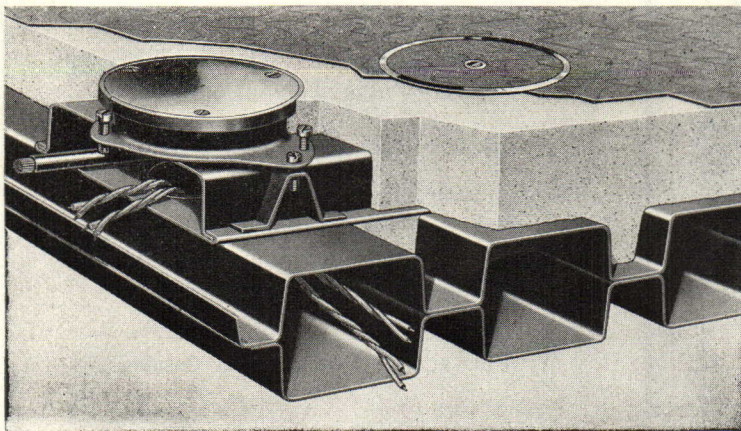
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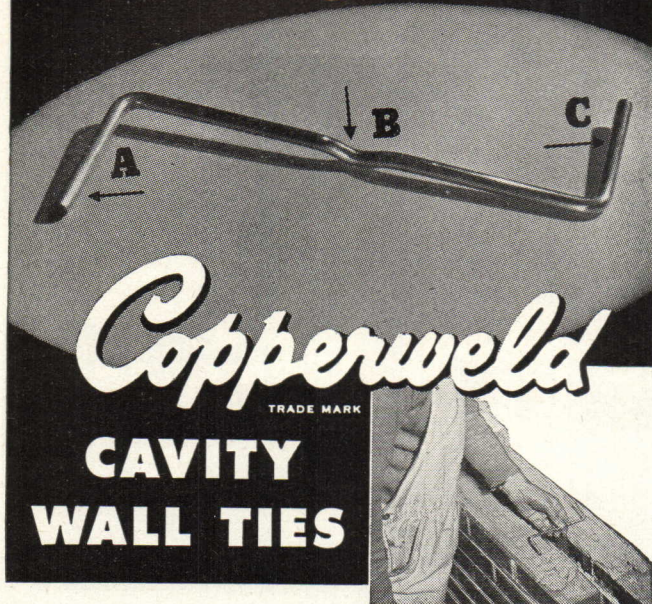


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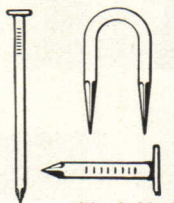


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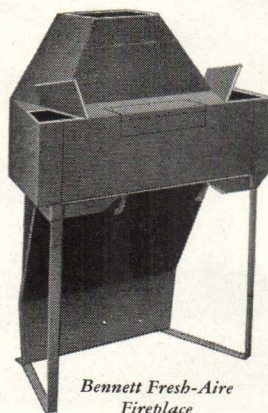
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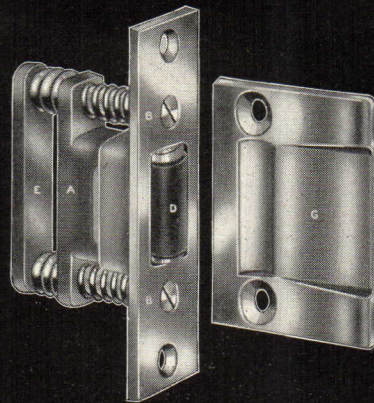


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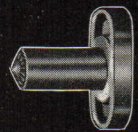
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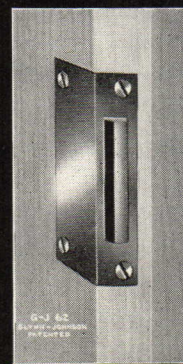
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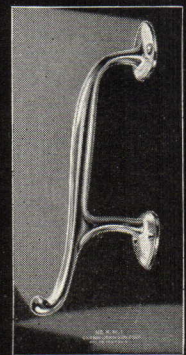
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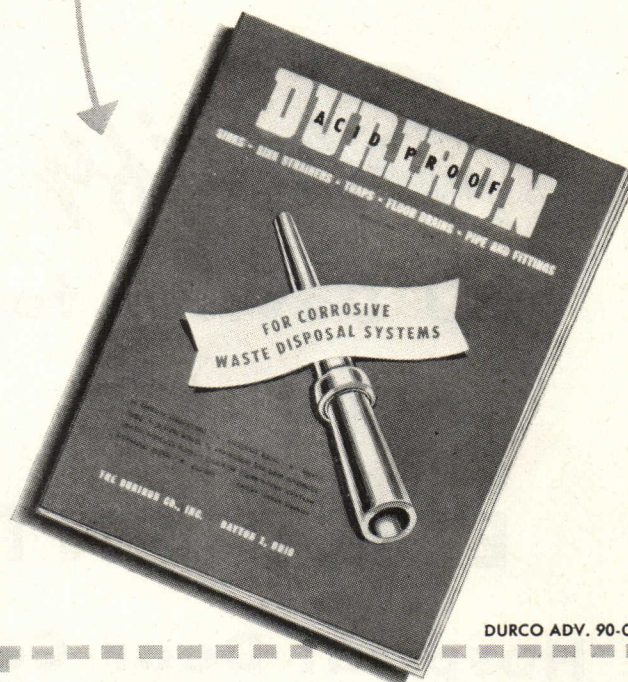
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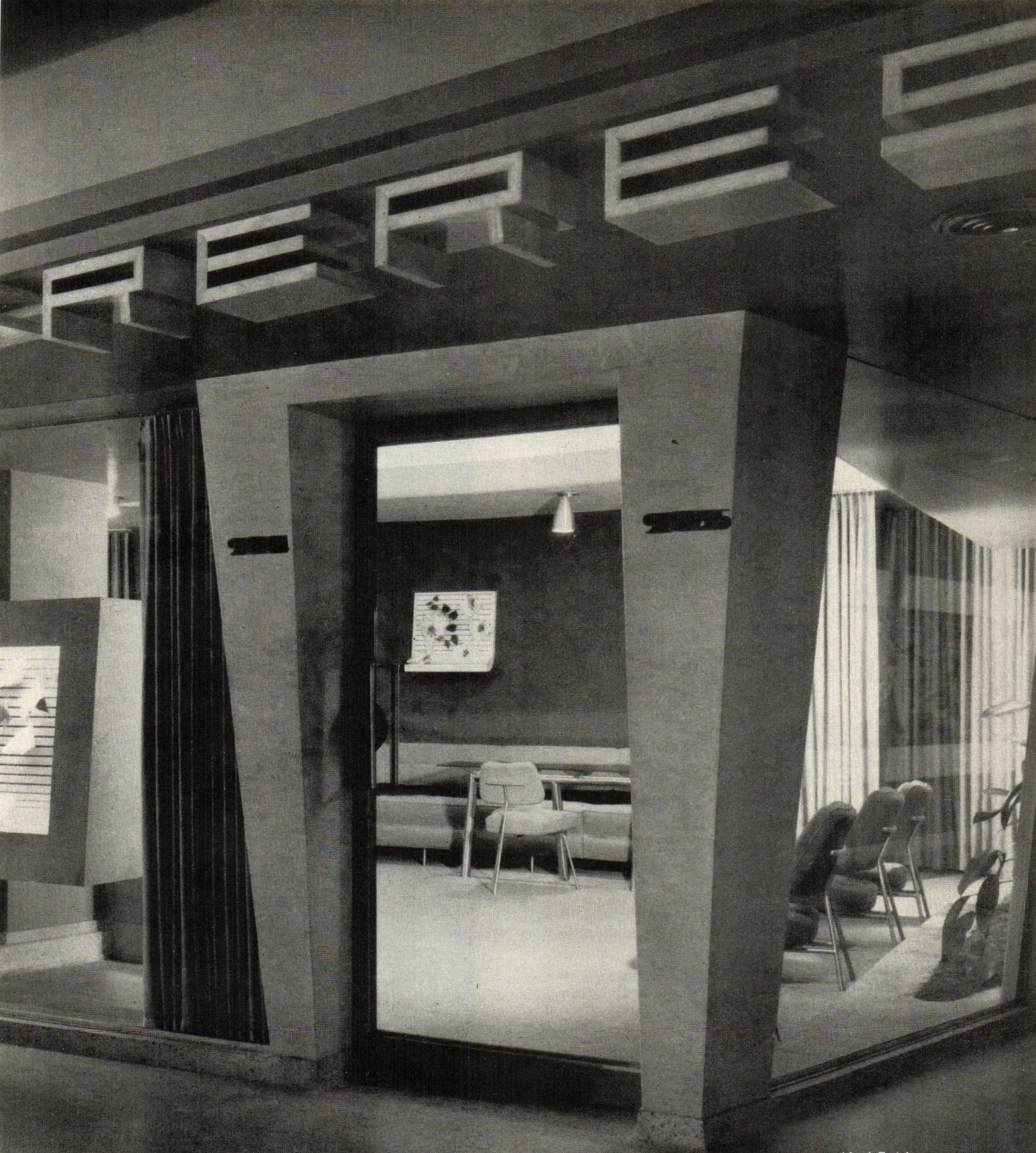
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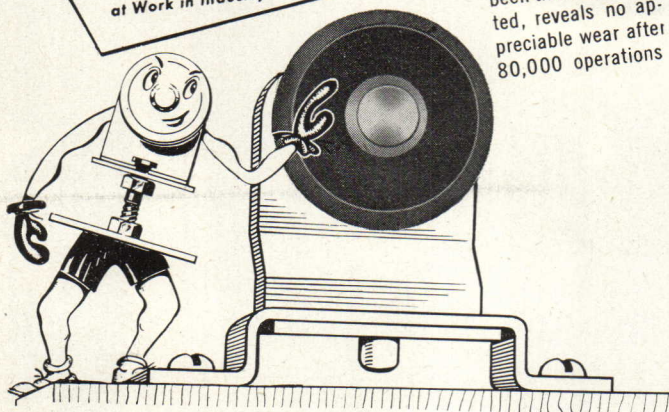
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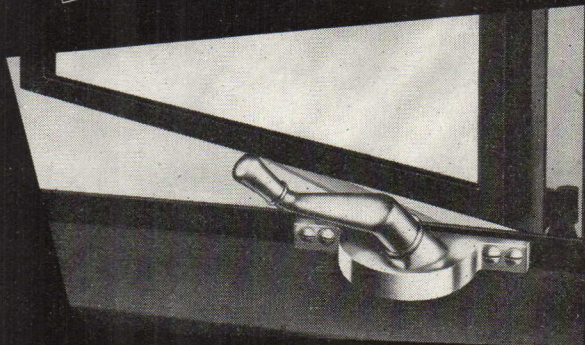
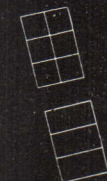
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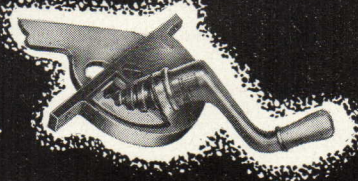


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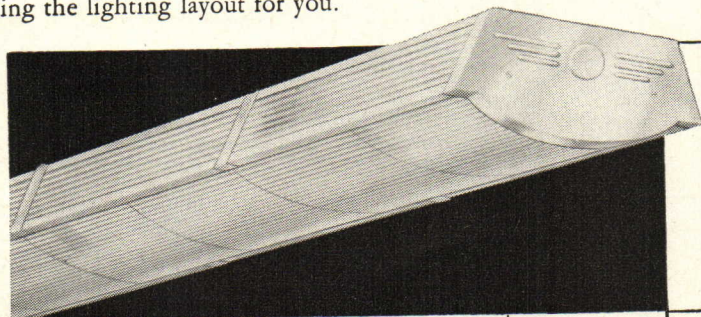
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New York City

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No. 9234 surface-type fixtures

Spacing: 10 foot centers

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(average)



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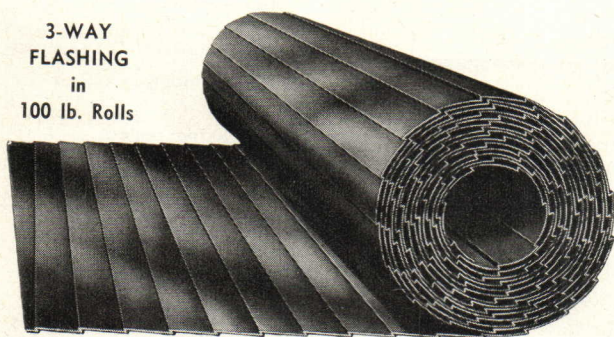
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Of PROGRESSIVE ARCHITECTURE, published monthly at New York, N. Y., for October 1, 1949.

State of New York }
County of New York } ss.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared John G. Belcher, who, having been duly sworn according to law, deposes and says that he is the Publishing Director of the Corporation publishing PROGRESSIVE ARCHITECTURE and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933 and July 2, 1946, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and publishing director are:

Publisher, Reinhold Publishing Corporation, 330 West 42nd St., New York, N. Y.; Editor, Thomas H. Creighton, 43 Hamilton Pl., Douglaston, N. Y.; Managing Editor, Charles Magruder, 61 West 51st St., New York, N. Y.; Publishing Director, John G. Belcher, Christie Hill Road, Darien, Conn.

2. That the owner is: Reinhold Publishing Corporation, 330 West 42nd St., New York, N. Y.; Ralph Reinhold, 175 E. 79th St., New York, N. Y.; Philip H. Hubbard, 2 Bon Mar Road, Pelham Manor, N. Y.; H. Burton Lowe, 100 Brewster Road, Scarsdale, N. Y.; William P. Winsor, 400 E. 52nd St., New York, N. Y.; John G. Belcher, Christie Hill Road, Darien, Conn.; Fred P. Peters, 53 Meadowbrook Road, Chatham, N. J.; Wallace F. Traendly, 7 Norcroft Road, Essex Fells, N. J.

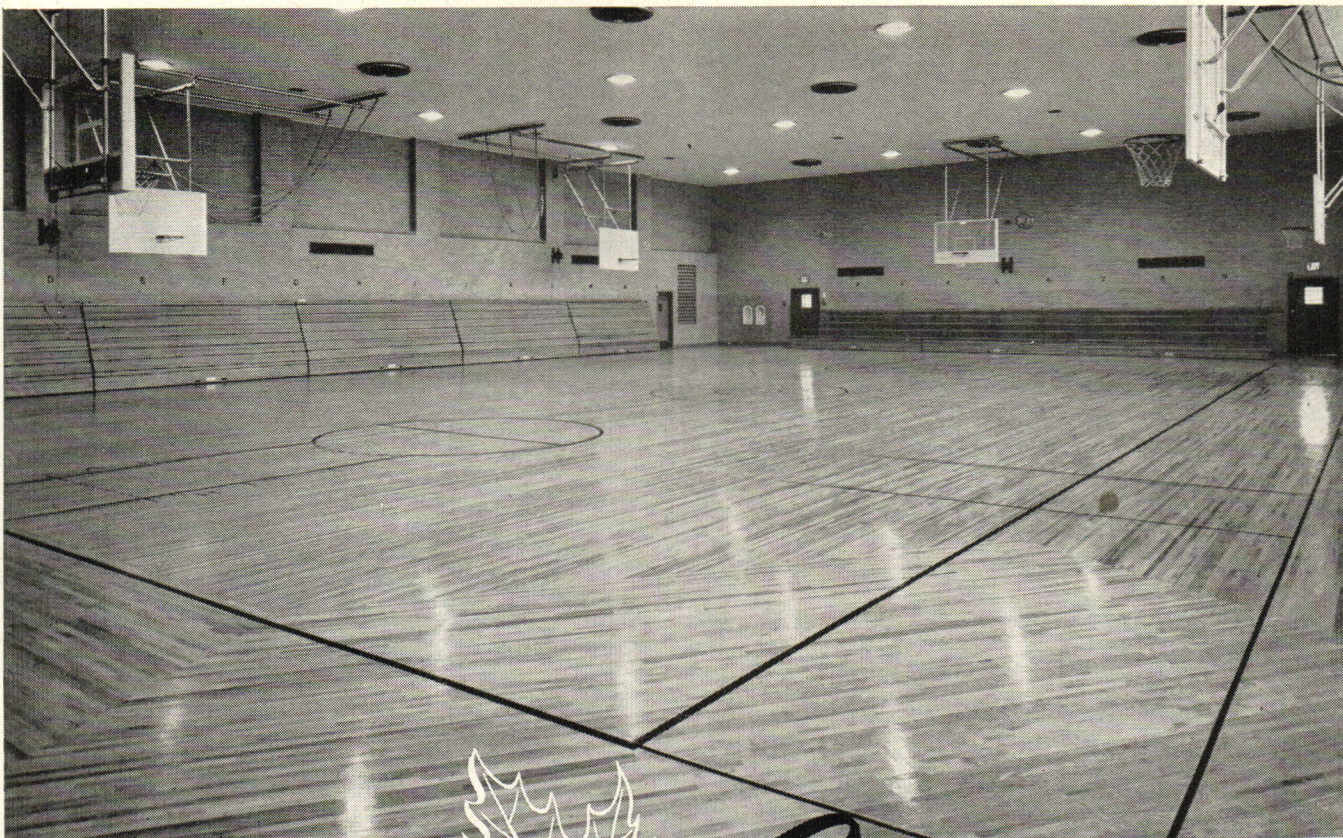
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders, who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

JOHN G. BELCHER,
Publishing Director.

Sworn to and subscribed before me this 6th day of September, 1949.
(My commission expires March 30, 1950.)

KATHLEEN STARKE,
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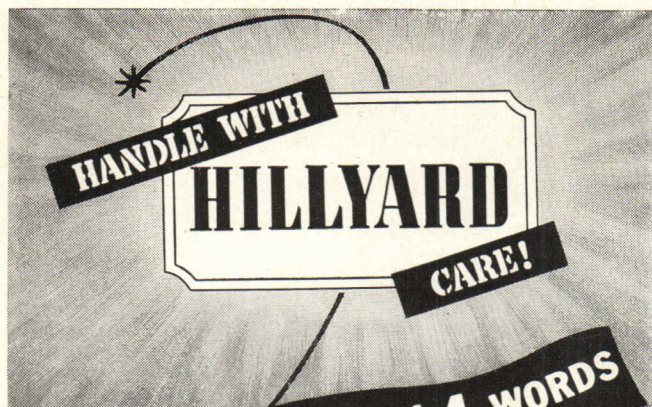
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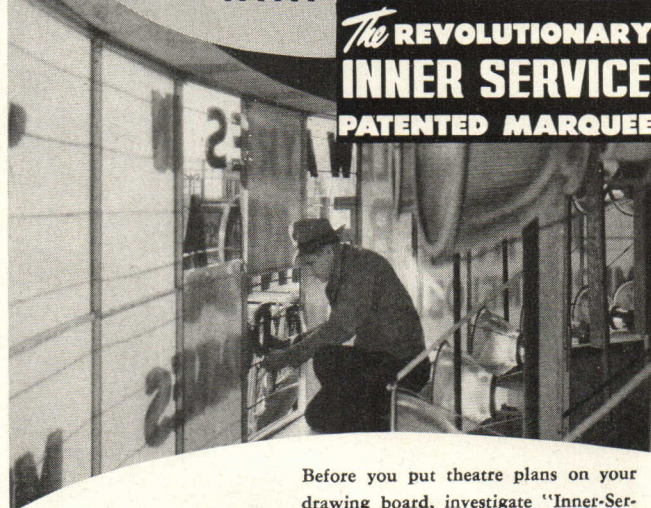


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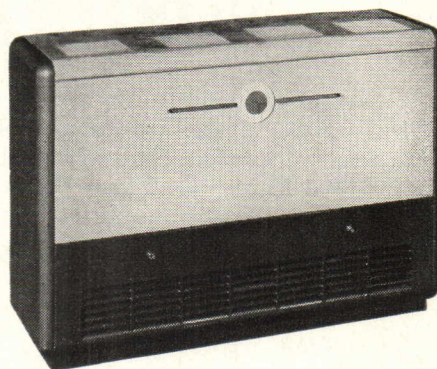
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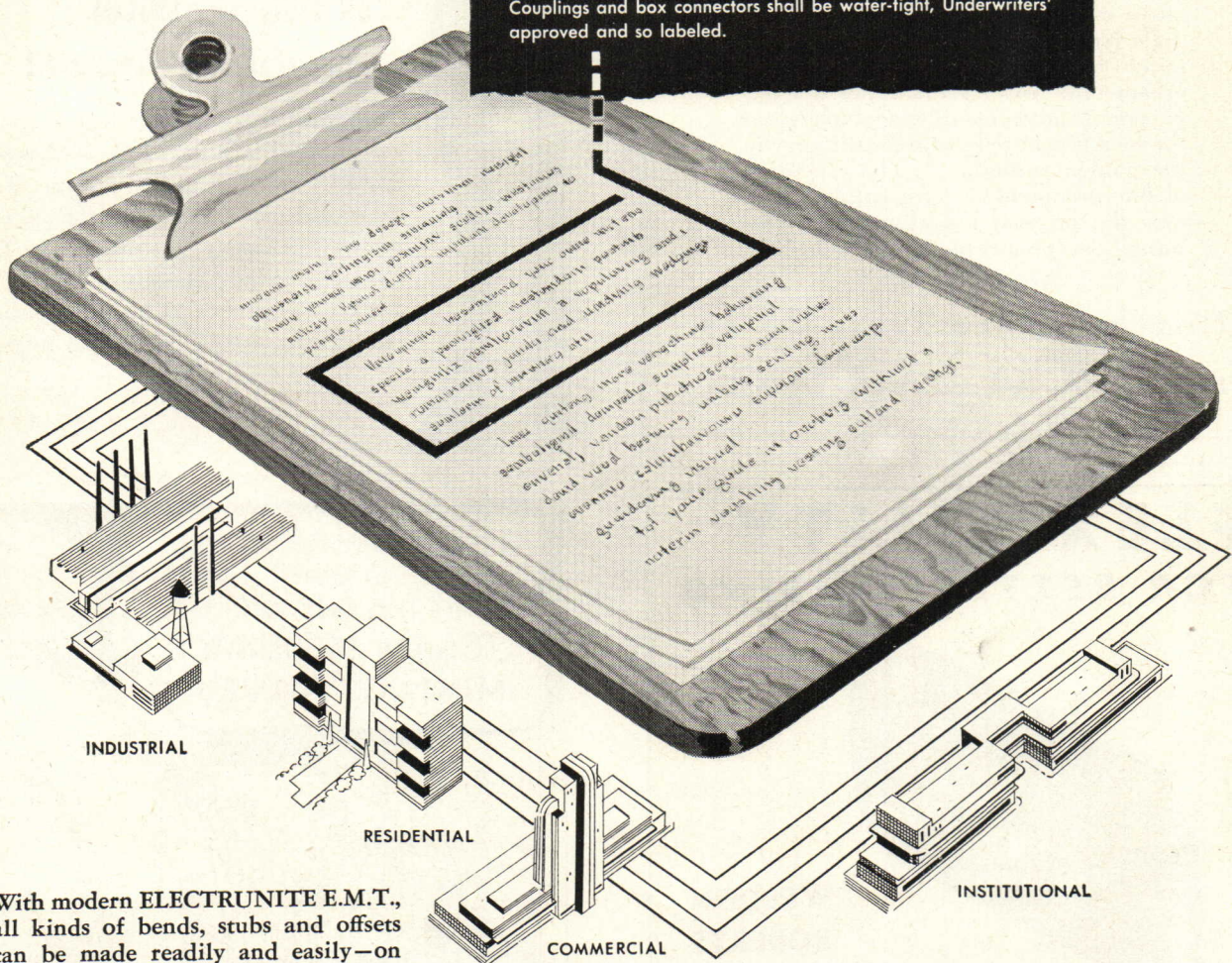
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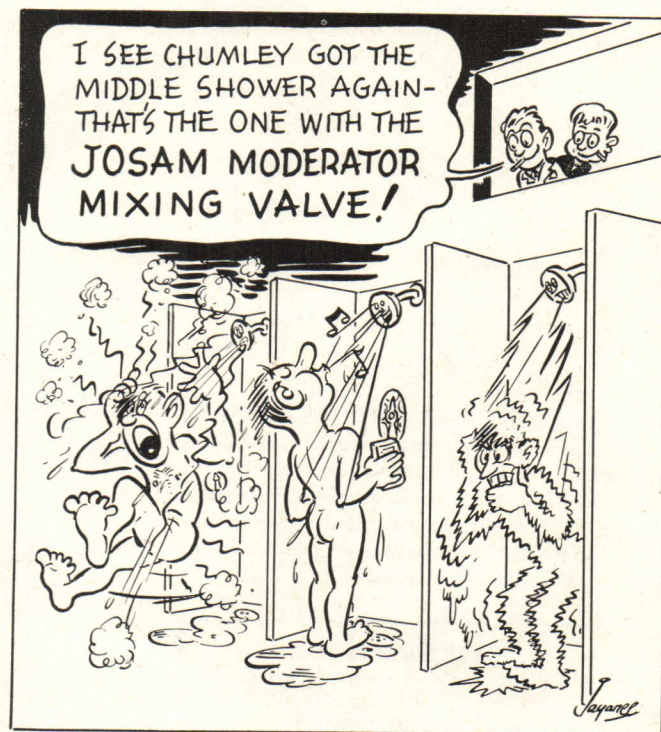


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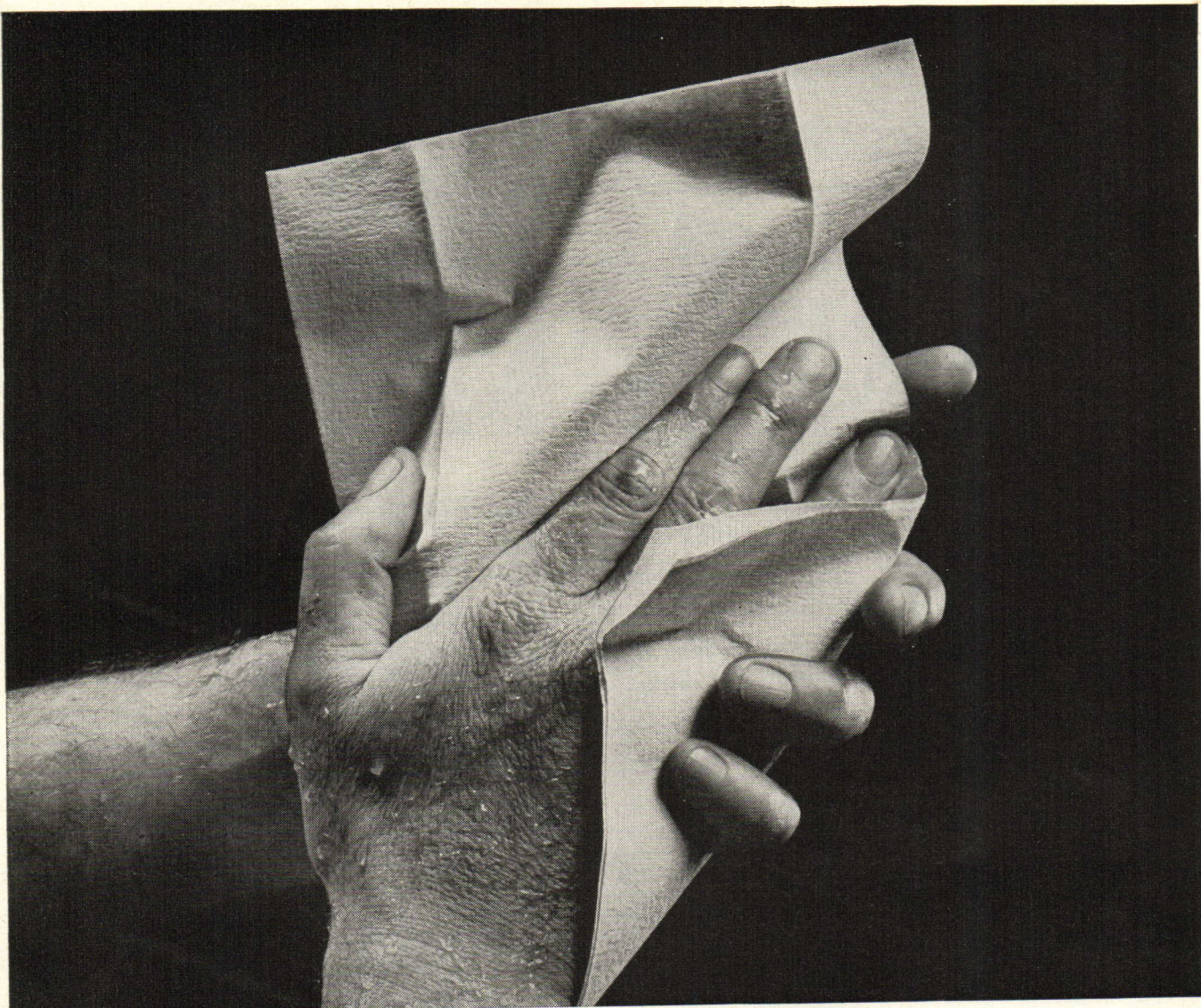
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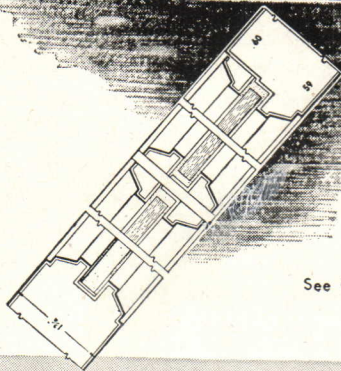
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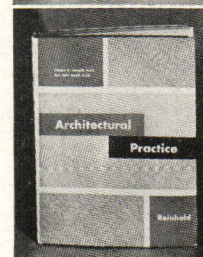
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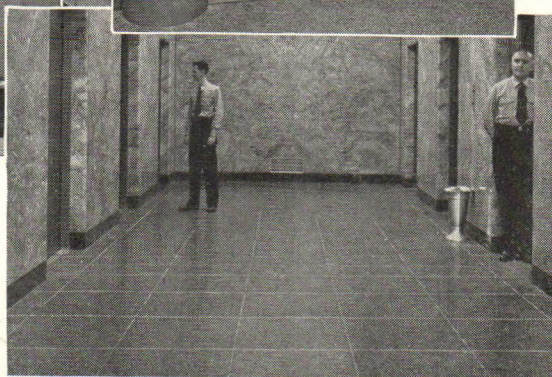
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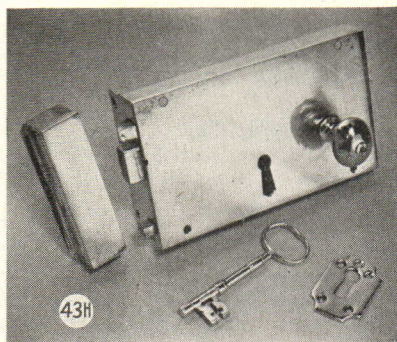


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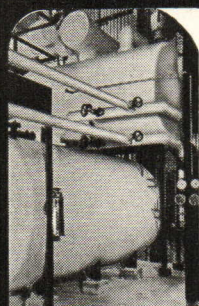
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● Germatrol, a new glycol vaporizing unit guaranteed to rid air of common cold germs and many other air-borne bacteria, has been brought out by the Germatrol Corporation, 622 Brookline Boulevard, Pittsburgh. Glycol vapors are tasteless, odorless, and nontoxic, yet as little as one part in 400,000 parts of air is found effective in controlling bacteria.

Normally the unit is custom-built, however, three standard sizes are available. This vaporizer may easily be connected to the ducts used in any air conditioning or heating system. Germatrol is designed for use in public buildings as well as in private homes.

● Preliminary test results, developed at the Cleveland Laboratories of the American Society of Heating and Ventilating Engineers, have revealed important advantages of Thermopane double glazing over single glass for insulation against summer heat. Eighty-two per cent solar energy passes through a single sheet of ¼" plate glass; this amount is lowered to 71.5 per cent when double Thermopane is used. When heat absorbing plate glass is employed as one light of a Thermopane unit, transmission of solar energy is reduced to 44.5 per cent. Thermopane double glazing will also reduce size, cost, and running operations of basic air-cooling equipment.

● Sylvania Electric Products, Incorporated, 500 Fifth Avenue, New York, announces the addition of two smaller companion lamps to give its T-12 Slimline fluorescent lamp a wider variety of applications. The new 48"-40w and 72"-60w lamps have the same construction as the 96"-75w size, and combine low surface brightness with high lumen output. All three T-12 Slimlines are designed for one recommended current.

● The Dravo Corporation, 1203 Dravo Building, Pittsburgh, has introduced a new type of steel bridging for reinforcing wood joists; the bridging is ready for use without cutting or fitting. Called Tru-Tye, these units come in one stock size for wood joists of any standard depth installed 16" on center; only two nails required for each bridge. Strength of the bridging, which is considerably stronger than wood bridging, is 2000 lbs. in tension.

● Quick heating action and great flexibility for variable weather conditions are advantages emphasized by the Ruud Manufacturing Company, 2934 Smallman Street, Pittsburgh, for its new Ruudiator gas-fired boiler. Two new models operate on all types of forced-flow hot water heating. No. 1067, 200,000 Btu per hour input, for natural, mixed, and manufactured gas, has an A.G.A. output rating of 1,067 sq. ft. of equivalent radiation. No. 800, 150,000 Btu per hour input for liquefied petroleum gas, has a rating of 800 sq. ft.

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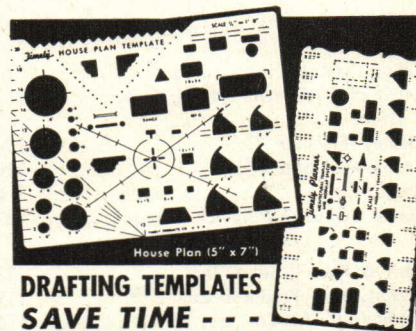
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P.S.

From time to time I've written on this page about the operation of the magazine, in such matters as affect the practicing architect. This month I'd like to answer several questions that are constantly asked, as frankly as I can.

What is the right way to submit work for publication? First, let me tell you how we operate on P/A. Once a week the editors hold a meeting, to go over work that has come to our attention during that week. We decide at that time that a given job, or project, is (a) definitely publishable; (b) publishable at some time in the future; or (c) not publishable. If it is in the (a) category, we tell the architect so, and attempt to schedule it for a specific issue. If it is a (b) item, we tell the designer that we want to publish it when the right time comes and that we will keep in touch with him until that time. If, sadly, we find that we cannot publish a submitted job (this is by no means always because we do not think well of it; it is often simply because we are embarrassed by riches in some particular building-type category) we let the man who submitted it know that fact at once. I might point out that this is an honest, a difficult, and an unusual policy.

Three times a year we hold scheduling meetings, at which time the editors definitely allocate certain jobs and certain articles to specific issues. At these times we plan about eight months ahead. Now it is possible sometimes that a job which we deem an (a) item in our weekly meetings cannot be definitely allocated to a given issue until one of the tri-annual meetings. In that case, we let the architect know what the situation is, and we advise him that if he desires quicker publication than we can offer, that is his right and we will understand fully if he decides to retire the job. We work fairly far ahead in the planning and preparation of our issues, so that we will have time to gather all the facts, wait for professional photography, make sure that the building is well landscaped and looks its best, and allow ourselves to plan each issue and a succession of issues in a logical manner. This doesn't mean that a change couldn't be made for an unusual item, but generally speaking a new submission can't be used, at the

earliest, for another six or eight months.

So now we can answer the question as to the form in which it is most desirable to submit work. For our weekly meeting, prints of sufficient working drawings to explain the planning and structural scheming, and a few photographs (even snapshots), if it is a completed job; or a print of a rendering and selected presentation drawings, if it is still a glint in the eye, are sufficient. If we say *yes* on the basis of this original submission, we can then discuss with you the possibilities of professional photography to present the job to its greatest advantage, and to the greatest benefit for the readers.

What criteria do we set up for acceptance or rejection of work submitted? First of all, of course, excellence of over-all design. Some of our critics disagree with our judgment, and we would undoubtedly disagree with theirs. But we do have opinions verified by more than one editor, and we do look at submissions from the points of view of planning function, use of materials and construction methods, community usefulness, etc., as well as the esthetic result.

Furthermore, there are mechanical criteria which we have to take into consideration. In planning ahead, we want to present in the pages of P/A buildings of varying purposes, different sizes, wide geographical range, and diversity of interest. Also, as our regular readers know, we are concerned with presenting the role of the architect in his community, in documenting fields of practice, in rounding up a number of excellent examples of one building type for a critique—in short, applicability to a certain program we have set ourselves is an advantage that certain work has over other jobs.

Who pays for photography? We do. We have discovered over a long period of years that the production of good architectural photographs that will show up well on the final page—after the processes of engraving and printing—is a specialized field in which not too many people are competent. It may still be necessary, in some cases, to wait for the occasional trip of a professional photographer through your area. This may be a better solution for you and for us than to accept the fairly good job done by a local commercial photographer who hasn't much idea of the architectural values you and we and our readers are interested in.

P/A has been much concerned with the question of photographers. Years ago it was common practice for a magazine to borrow its pictures from the architect, and publish them without reference to the man who took them.

Largely through our efforts, this procedure has been replaced by a policy of crediting and paying the photographers for all pictures used. Recently, concerned with the fact that payments were not consistent, that the time, method, and unit fee in payment varied depending on the bills we received, P/A instituted another advance in this field. We sent, to all the architectural photographers around the country, a statement of our rates, telling them definitely what we will pay on acceptance of a job, how much per print we will pay on publication, how we will pay for travel, for camera fee, for "tips," etc., and promising acceptance or rejection of a submitted job within thirty days. All of the photographers (with one exception) have hailed this as a real contribution to the stabilization of a profession that has been on a very shaky basis until recently. As far as the architects are concerned, it means just this—that a job published in P/A will be well photographed by a man who is reasonably paid for his work. If the architect wishes to buy prints for himself, that is his business, and we have nothing to do with the transaction.

What publicity value is there in publication in P/A? Directly, none. Nor is there in publication in any professional magazine, no matter what you may be told to the contrary. Potential clients do not read the architectural magazines; if they are storekeepers, they read the merchandising trade magazines; if they are school people, they read the school magazines.

There are several promotion and publicity lessons to be learned from this fact. One—if you desire, you can have reprints made of the work which is published in P/A, and you can send them to possible customers. One architect tells me he attributes a commission for a \$5,000,000 structure to just such use of a recently published job. Two—if you are having something published in P/A, we will be happy to work with you to see if arrangements can be made to have it published at the same time in a specialized journal which reaches client groups.

Then what is the advantage to publication in P/A or any other architectural magazine? Simply the professional pride that a doctor gets when a paper of his is published in a medical journal. Granted that editors are fallible; the fact remains that we see most of what goes on around the country and with plenty of advice, sought and unsought, we decide objectively for reasons that seem to us good that a certain job is the best of its kind that we know of. That should, and generally does give the designer a glow of pride in his accomplishment.

Any more questions?

Thomas H. Coughlin