PROGRESSIVE ARCHITECTURE

newsletter

May 1950

monthly by REINHOLD
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ndexed in Art Index.

- Division of Housing Research, HHFA, has now announced seven research projects under Housing Act of 1949 auspices. They include studies of plumbing and sewage disposal, heating and ventilating, chimneys and flues, water vapor in wood frame walls, temperature and humidity desiderata, soil-cover in crawl spaces, rot-prevention from moisture in crawl spaces. Government agencies will conduct some studies, universities some others.

- Municipal treatment plants of one sort or another provided a number of commissions last year, figures show. 665 sewage plants were built or under construction during 1949, and almost 300 communities were building industrial waste treatment plants.

- A.I.A. Convention, headquartered at Mayflower Hotel in Washington, D.C., will draw largest group ever from May 9 to 12. Some contests for minor offices are expected but no major controversies. Younger, newer members are waiting to see what program and plans will offer in way of interest and advance. Proposal to elect vice-president as president-elect will be brought forth by Board; evaluation of Standard Documents and some other matters may be raised from floor by Chapter delegates.

- A National Citizens Conference on Planning will take place in Washington at the conclusion of the A.I.A. Convention. From May 12 to 17, with headquarters at the Statler Hotel, delegates from a number of professional societies will engage in meetings and conducted tours.

- When New York's Mayor O'Dwyer recently appointed as Chairman of City Planning Commission one Jerry Finklestein, who had no apparent qualifications for the job except the fact that he had managed the Mayor's last campaign, eyebrows were raised. However, the new Chairman has astonished everyone including Robert Moses, and pleased friends of planning, by taking a firm stand on important principles and by asking a budget for the Commission which would enable it to prepare the master plan it was supposed to have done long since. His statement arguing for effective planning for New York "in a critical stage of its development" has been applauded by many civic groups.

- A number of recent articles have severely criticized current midtown New York skyscraper design. Lewis Mumford in "The New Yorker," and then William Zeckendorf, in the daily press, spoke of buildings carelessly placed in relation to future needs, and design standards that were no advance on boom methods of 20's. Frederick Gutheim, summing up these and other comments in the "Herald-Tribune," commented that means of getting better and better planned buildings "eluded a precise formula last week."

- U.S. Plywood announces American rights to Novopan, a wood-waste three-ply wood panel, produced in Europe since 1945, now to be made in U.S. as well.

(Continued on page 2)

newsletter

- Southern Standard Building Code, now applicable in 13 states ar 250 municipalities, has reduced live-load requirements for floors in one-story dwellings from 40 to 30 pounds.

- George Cooper Rudolph, N.Y. architect, won first prize ($1000) in Chicago Tribune Better Rooms Competition, with a two-way fireplace which allows television set to be swung either way.

- M. E. Freitag, Iowa State student, won first prize in Timber Engineering Company's Wood Frame Garden Type Apartment Competition. C. E. Stade and M. J. Dolan, Chicago architect and eng neer, respectively, won second prize, and R. T. Morrisett, Springfield, Ill., architect came in third. Jury report and illustrations of winning designs can be had from Timber Engineering Co.

- Frederick L. Ackerman, 71, well-known and much-loved architect planner and housing authority, was tragically killed in New Yo late in March, when he collapsed and fell against a truck whil crossing the street.

- New house in the garden for Museum of Modern Art in New York i now under construction from design by Gregory Ain, Los Angele architect and poet. "Woman's Home Companion" is co-sponsor fo this house which is designed with a "compact but flexible pla to fit a 60' by 120' subdivision plot.

- Rome Prize Fellowships have been won for '50-'51 by Joseph Amisano, of the Ketchum, Gina & Sharp staff, in architecture, and by Dale Hawkins, Nashville, Tenn., Director of Planning i landscape architecture.

- Baseboard heating has apparently caught on. Plumbing and Heat Industries Bureau reports that 28 manufacturers are now makin such equipment, either of the radiation or convection type.

- Calaveras Cement Co. of San Francisco has again entered the white Portland cement field, joining only three other U.S. manufacturers of this product.

- P/A, at request of A.I.A.'s President Walker, has been keepir mum about an important law case in Michigan. A Circuit Court held that one Gordon Sheill, architect, was not entitled to recover fees due because his contract (standard A.I.A. form) was illegal since it contained provisions for preparation of contracts and thus constituted unlicensed practice of law. Ca has been reargued, with A.I.A. assistance, and as yet no decision has been handed down.

- Since two other national magazines (including A.I.A. Journal have broken understanding not to discuss this case until decision was reached, P/A no longer feels obligated to silen Bernard Tomson is gathering data and will discuss it fully i It's The Law column when some conclusions can be drawn.

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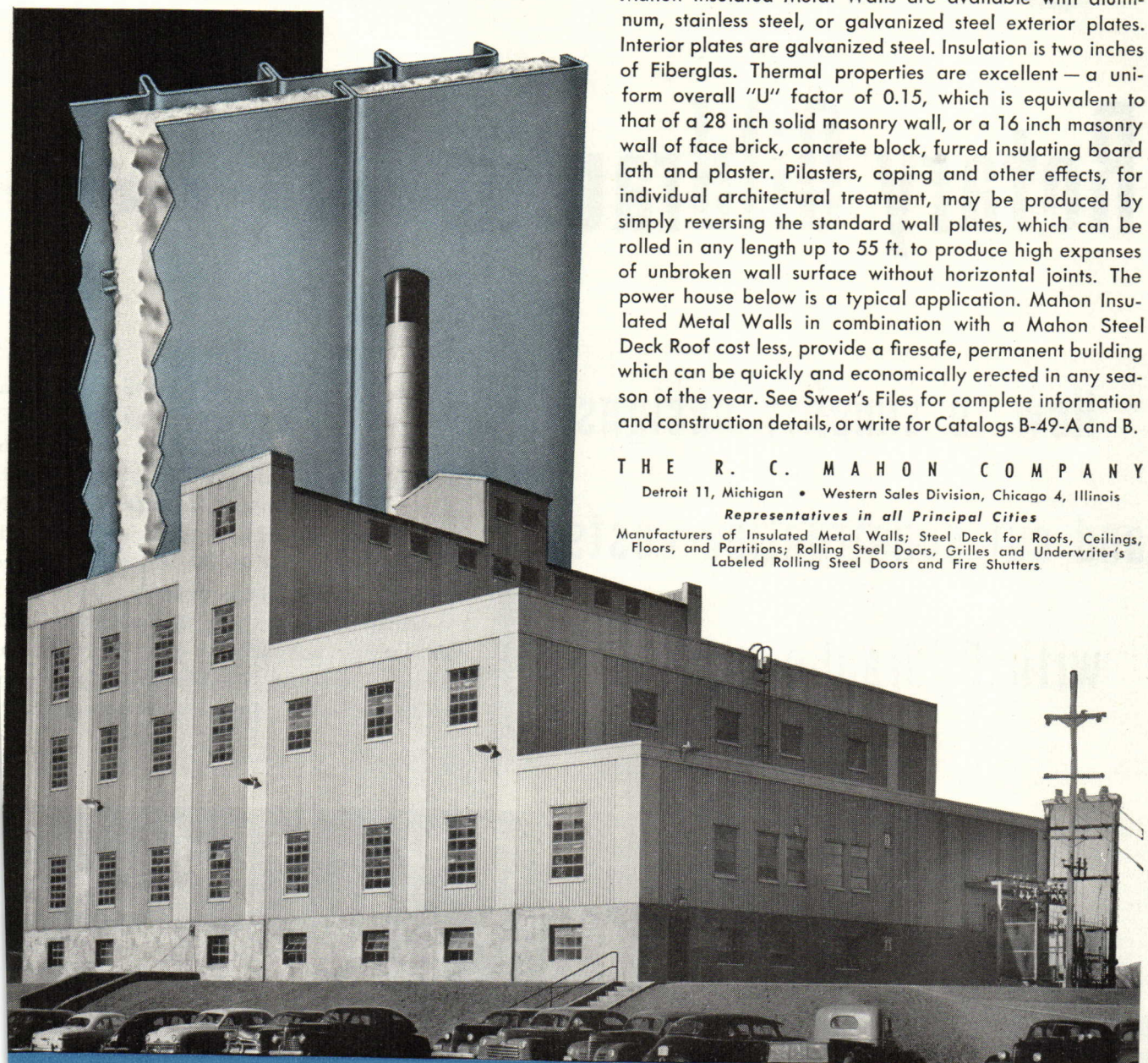

Bison Power Plant, built at Minot, N.D., for Northern States Power Co. Mahon Insulated Metal Walls with Stainless Steel Exterior Plates and Stainless Steel Flashing used throughout. Pioneer Service & Engineering, Chicago, Architects & Engineers.

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Contractors: Jackson Bros.
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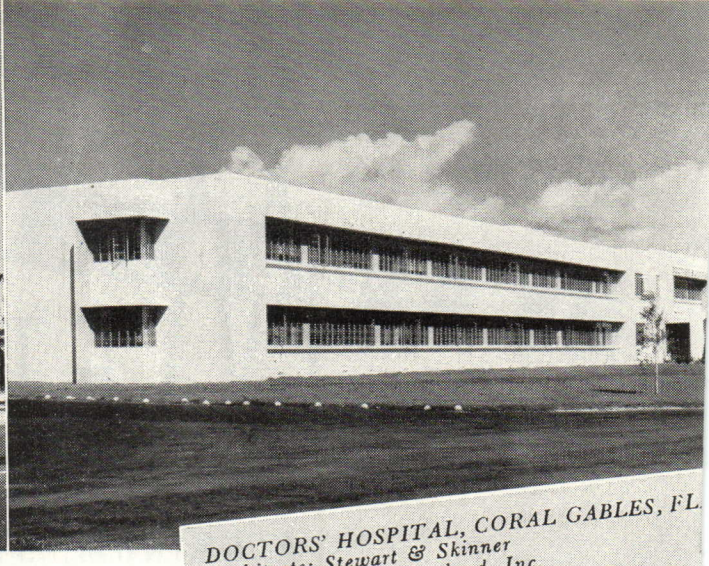

DOCTORS' HOSPITAL, CORAL GABLES, FL.
Architects: Stewart & Skinner
Contractors: Fred Howland, Inc.
Installed by Miami Elevator Co.

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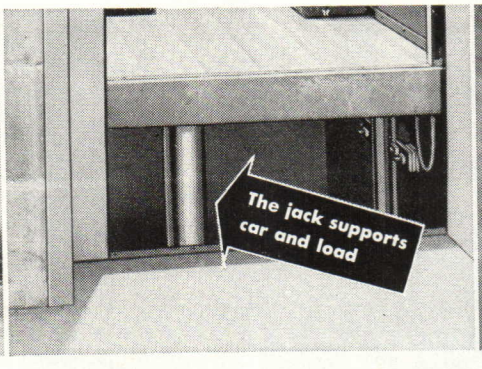

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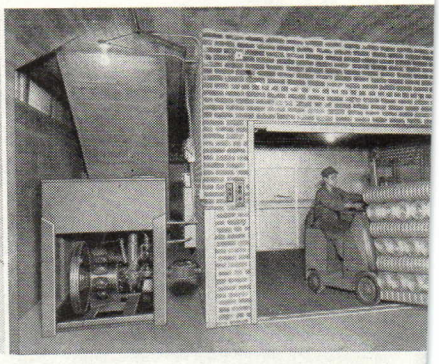

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LAFLIN APARTMENTS, CHICAGO, ILL.
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Contractors: Rush Construction Co.
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for Architect's Data File—See Section $\frac{33a}{10}$ *in Sweet's Architectural File*

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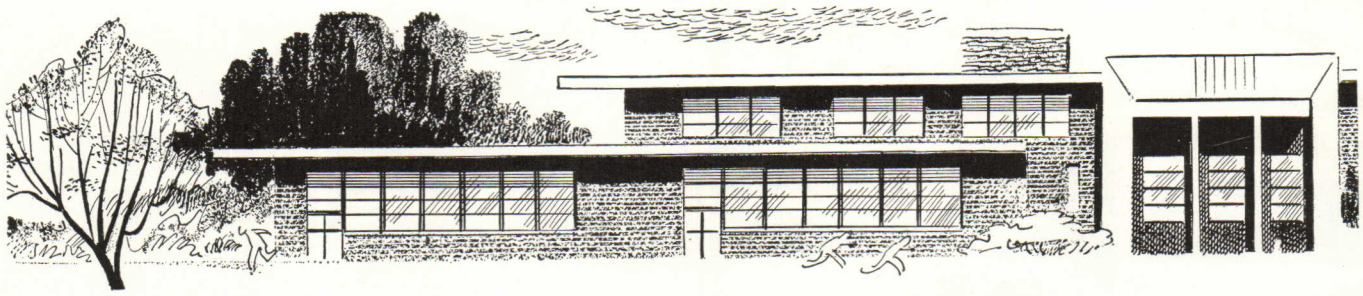

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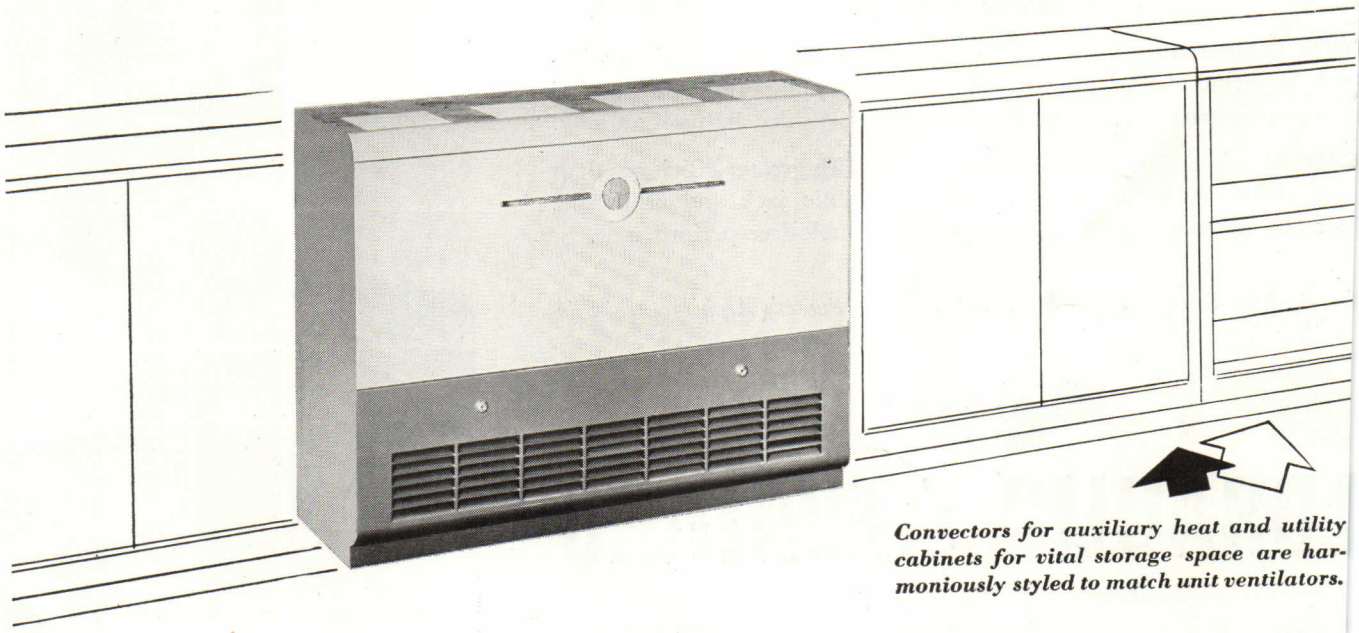
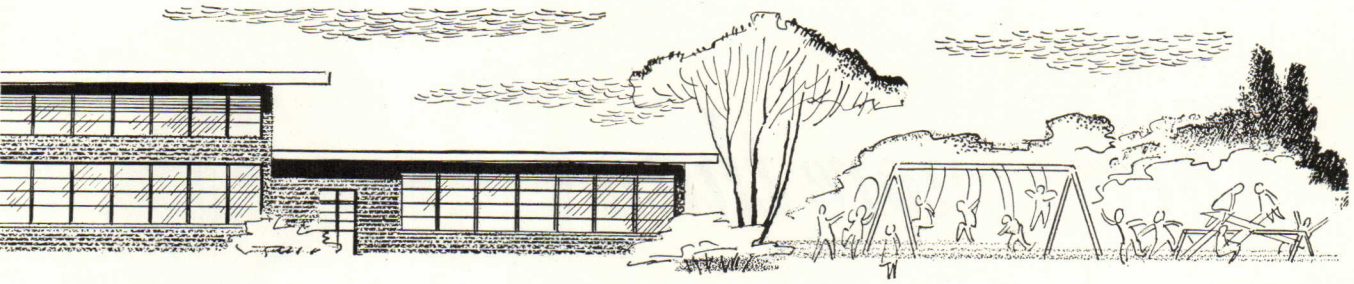


Convectors for auxiliary heat and utility cabinets for vital storage space are harmoniously styled to match unit ventilators.



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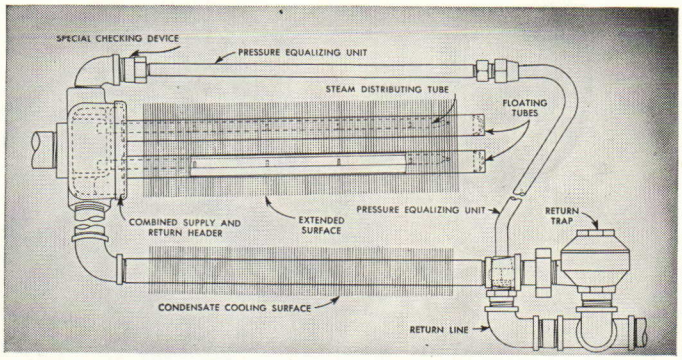
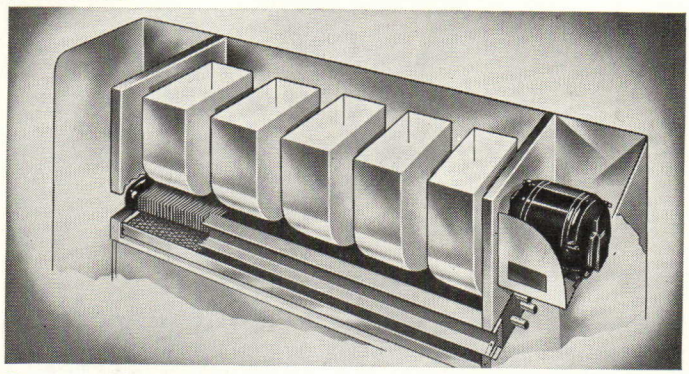
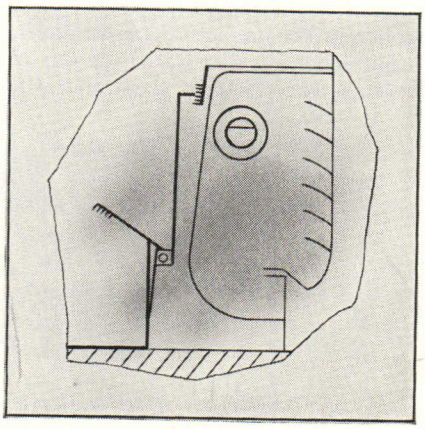


Heating element shown above permits gradual throttling of steam supply insuring uniform temperature control. Pressure equalizing unit and condensate cooling surface, two exclusive features, guarantee elimination of condensate permitting uniform distribution of steam. This is the only way of preventing drafts and water hammer.



Placement of the slow speed motor in the end compartment as pictured above permits utilization of entire suction chamber for larger fans. Fans located at top in Herman Nelson's "draw through" system assure constant volume of air delivered at proper velocity for uniform diffusion.



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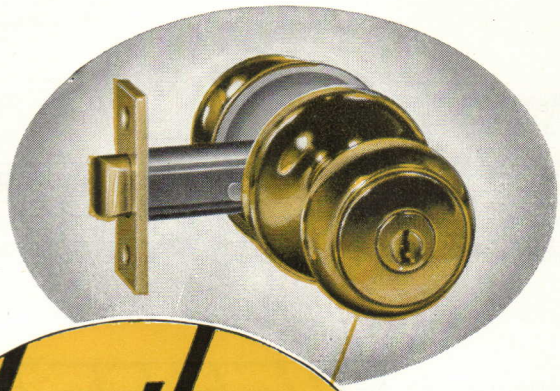

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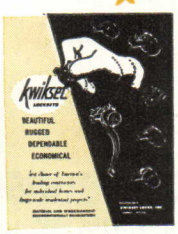

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BEST PRESENTATION

Dear Editor: I have just looked over a very fine article on our South District Filtration Plant which appears in your March Issue.

As Western Editor of Engineering News-Record in Chicago for 30-odd years prior to coming with the City of Chicago in 1941, I want to say that this article pleases me very much. The layout, the text, and the cuts show up in excellent style, on the fine paper you use.

Altogether, I congratulate you on putting out a decidedly desirable presentation. We have had many articles in the technical papers, but none of them, in my opinion, has come up to the excellence of this one.

W. W. DEBERARD
City Engineer
Chicago, Ill.

TOWARD THE CUBE

Dear Editor: With the Secretariat building of the U.N. nearly completed and the model, now on view at the Museum of Modern Art, of Mies van der Rohe's new apartment house to be put up in Chicago, we are well launched on what would appear to be the last phrase of artistic negation in architecture.

In 1876, Fechner made experiments to discover the most pleasing point at which to bisect a line. He found preference for the point where the short length had the same ratio to the long as the long had to the whole, or about 5:8:13. This is known as the Golden Section. Fechner's problem was an experiment to determine one of the principles of art, not a work of art. Architecture of the type here under consideration has become limited essentially to the selection of two elements. Given one, the height, the architect may choose only width and depth. Aline B. Loucheim wrote in *The New York Times*: "New Yorkers who can see the stately beauty of the Secretariat building in actuality and the glass apartment in model can take heart and can realize that the cliché wedding-cake office buildings which are mushrooming up in their city are finally architecture at all."

The simplicity of this architecture is misleading. Cheap art as well as cheap art must have an esthetic complex. Reduce the complex of any art enough and the cheapness tends to disappear. So does the art. This is artistic destruction. The cheapest popular song is stripped of its melodic outline, leaving only the harmonic progression, will be far less cheap. The ambition of Mies van der Rohe for "the play of reflections" possible in glass is but a sensuous element in the art, which by itself can only go so far. Art consists of an esthetic complex which makes possible beauty or ugliness. You can create neither by a straight line or by the perfect proportions of a rectangular prism.

Modern architects with their first concern for function and new materials sought a new esthetic complex. Modern architecture to date has not evolved an esthetic complex which architects believe they can develop stylistically. On the contrary they seem to have abandoned any effort to attain an esthetic complex along the lines on which they have been working. Maybe when they have succeeded in reducing architecture to the cube which needs no determination by the architect, the art will be in a state of a *tabula rasa*, upon which the subconscious esthetic emotion of an architect can take hold. When we have universally accepted the architecture of the "cube" we will be psychologically able to begin once again the esthetic complex.

ROGER PRYOR DODGE
New York, N.Y.

LAMENT FOR AWARDS

Dear Editor: With deep regret I have read the announcement of the discontinuance of the PROGRESSIVE ARCHITECTURE Annual Awards. The aims—realized—were of the utmost benefit. The needs of the program were beyond that which most of us realize and I am afraid I must sorrowfully say, are no less needed still. Department of Education and Research, etc., not withstanding.

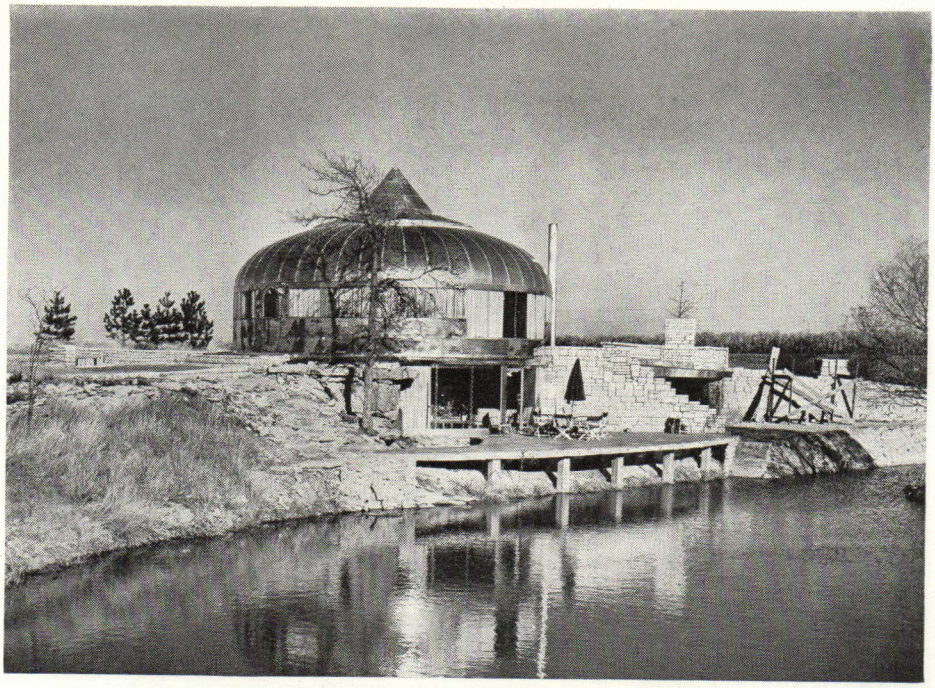
This isn't an indication of our not wanting to co-operate with the Institute . . . I guess it is a lament of the passing of an "institution" that was of inestimable help to our moral and confidence in what we have been trying to get done.

RICHARD L. AECK
Aeck Associates
Atlanta, Ga.

HOME HANGOVER

Dear Editor: For years and still today it is very annoying to me, month after

(Continued on page 10)



Inventor R. Buckminster Fuller's famous "Dymaxion Dwelling Machine" of alloy steel, aluminum, and plastic—suspended from a "center organic mass"—was gathering dust in a warehouse when William Graham, a builder of Wichita, Kansas, decided it looked like an ideal unit for a summer home. He bought the experimental house, which had cost $54,000 to develop, and moved it to the country where it became the second floor of his round dwelling. The Graham family likes the house so much that they now live in it the year-round. This conclusion to one of the most publicized experiments in the low-cost house field was recently reported by *Parade* (Sunday picture magazine with a circulation of 2,000,000) which from time to time turns its spotlight on architectural matters. In its April 2 issue, the picture magazine featured a picture and brief biography of Frank Lloyd Wright as "most original architect of our century in the U.S.—perhaps the world." *Photo: Parade*

(Continued from page 9)

month, to see published in P/A and other leading architectural magazines, houses that are literally built around a fireplace. This I would expect from builders' magazines. But, from outstanding designers whose works are published in architectural magazines, I cannot understand such emphasis being placed on such an insignificant, useless, hole in the wall as a fireplace.

I have a great deal of respect and admiration for Frank Lloyd Wright but when I see a house designed by him in which such importance is given a monumental fireplace I am somewhat disappointed.

Do these people, in this day of modern conveniences actually use these primitive devices for heating? It certainly isn't necessary with our present scientific controls, sensitive thermostats, outside anticipators, electronic devices, etc. and I can certainly find better means for preparing a meal. It seems to me that the inclusion of a fireplace in every home today is purely an unconscious sentimental hangover.

I know of one house in particular where the owner had to have two fireplaces. The chimneys were huge, with good size openings and ample flues. The openings were trimmed with imported marble mantels, the total cost of which was well over $2000. Then they had electric outlets installed inside the hearths, so they could plug in an electric cord and simulate a log fire.

In another case I recall trying to discourage the use of a fireplace—without success. The house was completed and decorated by one of the leading houses in town. The fireplace was the accent the focal point. Furniture was boldly grouped around same. Then the payoff —they installed a T.V. set in the living room. It gives me a great deal of satisfaction to see how they suffer over the T.V. show. They're all in each other's way, backs to the set with heads turned sitting on the floor and have to move when someone passes. It's misery but they have a fireplace and incidentally it's never been used.

I am curious to know why so many good designers include a fireplace in every house they design. Can you find the answer for me?

F. James Sw
Massapequa, L. I., N.

I have spent too many pleasant evenings around a fireplace in good modern houses to feel that it has become an anachronism in residential design. I don't think it is a matter of providing heat or personal comfort as much as it is a stimulant to pleasant companionship and good talk. As far as TV is concerned, if I know that someone has a set, I automatically refuse an invitation for the evening. You see I'm just an old-fashioned guy. T.F

"GUIDING STAR"

Dear Editor: A pat on the back for the grand job you are doing with your magazine. My high school students, future architects, consider it the "guiding star". The January issue is a masterpiece.

Anthony J. Cocc
(Head of Fine Arts De
Wappingers Central Sc
Wappingers Falls, N

TERRA COTTA EXAMPLE

Dear Editor: In your article "U.S. Architecture 1900-1950" we happened to note on page 54 the cut showing the Flatiron Building with the note "Da

(Continued on pag

No. 4 of 5 SOUND Reasons Why Simpson Acoustical Tile is PREFERRED

SIMPSON ACOUSTICAL TILE is factory-finished an attractive white, giving a pleasing overall appearance to the finished job . . . a finish with high light reflection without glare. BUT . . . Simpson does not stop there! *Bevels*, too, are painted with this same attractive color. Painted bevels add a special finished effect to a Simpson acoustical installation. This is one of the five big reasons so many architects are specifying Simpson Acoustical Tile.

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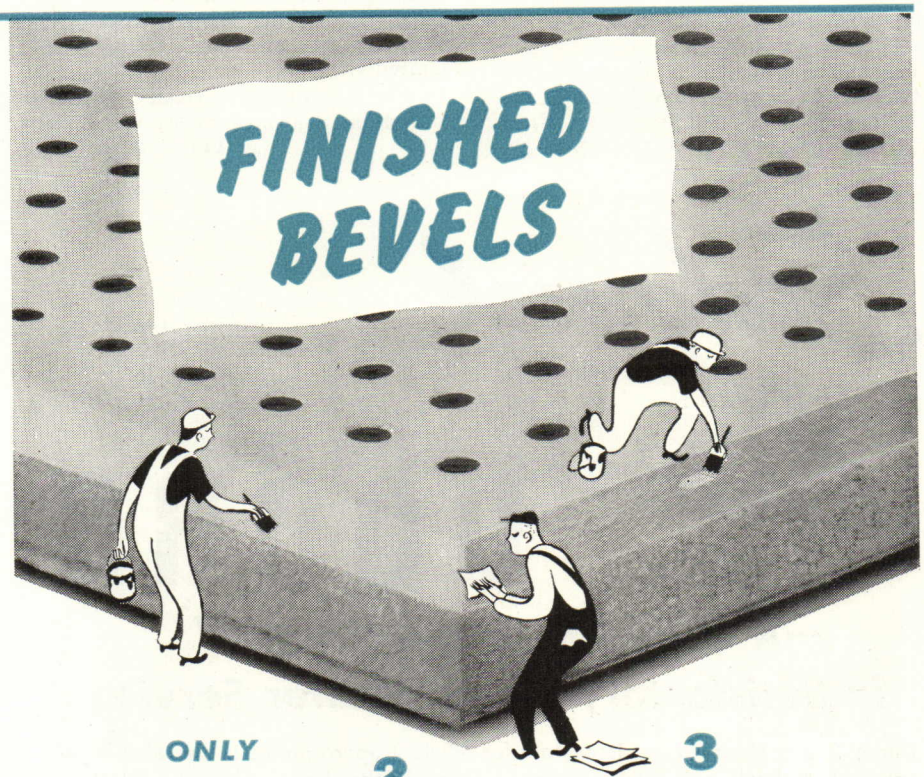

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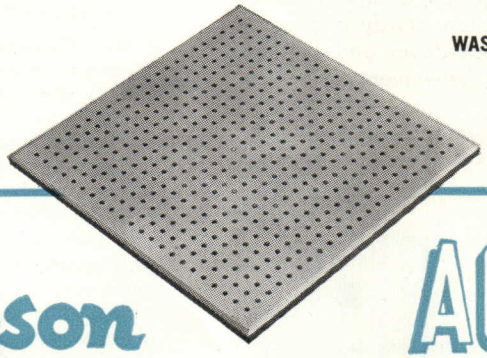

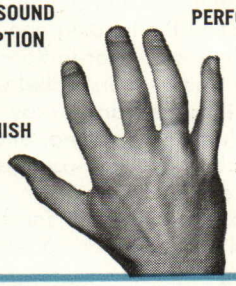

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Building Service, Inc., Milwaukee

p/a

VIEWS

(Continued from page 10)

H. Burnham covered the Flatiron Building with granite."

This is entirely incorrect. The pier base at the sidewalk is granite. Limestone facing is used from the top of the pier base to the fourth floor lintel. From the fourth floor lintel to the top of the building is entirely architectural terra cotta—one of the largest installations of architectural terra cotta in the United States.

PETER C. OLSEN, President
Federal Seaboard Terra Cotta Corp.
Perth Amboy, N. J.

MORE ABOUT CHURCH

Dear Editor: I had already seen the three pages of the February issue of PROGRESSIVE ARCHITECTURE devoted to the little church at Stowe, Vermont, but it was only this afternoon that I discovered your P.S. on page 146.

It may be that Whittier was not entirely pleased with the painted decoration but I have never heard from him in this connection although I did see him at the site while the work was being done and also called to see him in his Burlington office. At that time he did not express himself as you have noted in your text.

However, in all fairness to the artist, André Girard, I must say that he did not come to the job to apply "his" own concepts of decoration, etc., since I directed the job from the very outset and could have stopped it at any time. So, if anyone's responsibility is involved it is mine.

While I appreciate the architect's point of view I, too, viewed this job from the point of view of an architect with over 15 years' experience in the offices of Catholic architects. The exterior painted panels may seem unusual but only because this type of work has seldom been done in this country. As for the interior I cannot, for the life of me, see how the decoration does not actually enhance the structure.

At any rate, many thanks for your article. I merely wanted to settle the question of responsibility and take whatever onus there may be away from the artist. If there is any controversy in this case it is a controversy between architects.

MAURICE LAVANOUX, Secretary
Liturgical Arts Society, Inc.
New York, N. Y.

NOW THEY'RE TOLD

Dear Editor: Someone should tell those young architects (Stowe, Vermont church February P/A) and I think it should be you, that all is not lost. Dramatically, that veneer of painting points up the fine direct simplicity of the structural design, and thank goodness for the photographs of that and the satisfactions of memory. Among the profession those architects will have more notice than otherwise, and more credit. The maiden that is violated is always assumed to have been more angelic than she probably was.

LAMONT H. BUTTON
Pittsburgh, Pa.

WELCOMES CRITICISM

Dear Editor: A note to thank you and your associate editors for the inclusion of Goldman's store in the Shoe Store Critique—March P/A. It was my debut in your magazine and the competent criticism was heartily received, as I believe this is what keeps architects on their toes. Let's have more of it!

MARIO L. GAIDANO
San Francisco, Calif.

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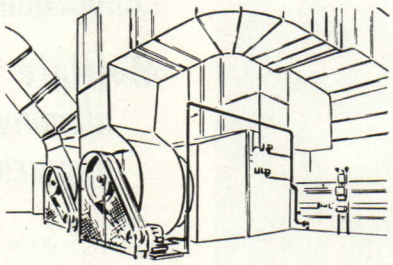

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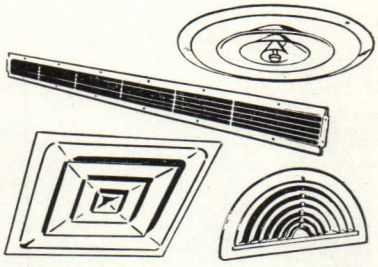

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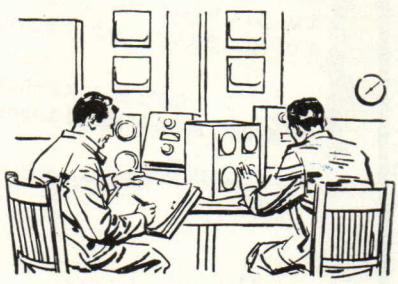

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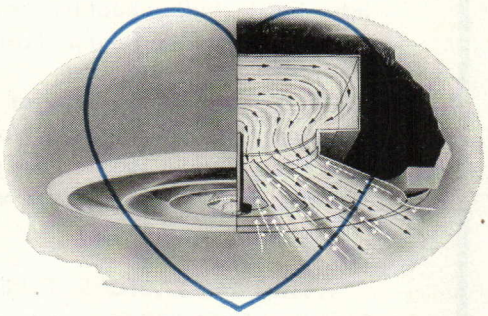

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From a letter by COL. E. J. KENDRICKS, Medical Corps (USAF), Chief, Aero-Medical Laboratory, Engineering Division.

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Radiation dominates heat flow in air spaces (in buildings)

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Multiple layers of low-emissive aluminum do not absorb nor emit appreciable heat

Infra-red heat rays travel through space, including icy-cold air, in every direction, up, down, sideways, from warm to cold. They engender no temperature until absorbed by a surface.

A news release from Wright Patterson Air Force base says of the accompanying photograph: *"In the center the 'bunkin' suit, now in use by airplane crash fire-fighters, has become too hot for its wearer and is being wet down. The aluminum foil laminate suit at the left, developed by AMC's Aero-Medical Laboratory, was found to give its wearer the greatest comfort and protection and suffered least damage during the test. The foil reflects the extreme heat and helps the wearer retain a relatively low body temperature while fighting airplane crash fires."*

Multiple layers of accordion aluminum permanently compartmented with cellular reflective spaces, reject 97% heat rays and emit only 3% on opposite side. This structure, available commercially, is technically called Infra Accordion Aluminum Insulation. Installed between wood joists in new construction, material and labor, Type 4 Infra costs less than 7½¢, Type 6 less than 9¢ sq. ft.

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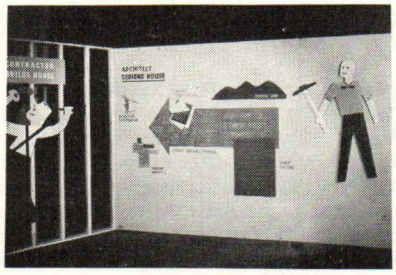
PROGRESS REPORT

Cleveland Model House

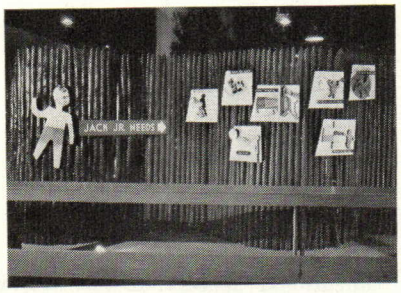
Measurable interest in contemporary design is reported from Cleveland, Ohio, where 202,000 visitors at the seventh annual Greater Cleveland Home and Flower Show this year trooped through a model house and architectural exhibit, examining details and furnishings, asking pertinent questions, and sometimes blocking traffic while they mused over home life in such surroundings. The



1

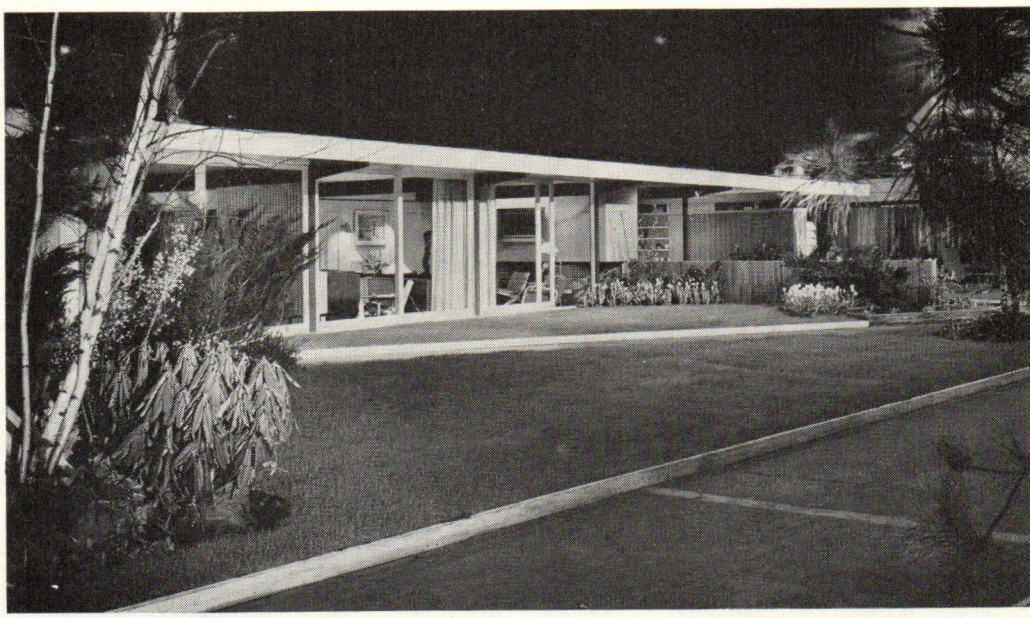
house was designed by Cleveland Chapter, A.I.A., as a public relations activity; the architectural exhibit by Alfred W. Hams and Robert A. Little, Architects; and the furnishings by Garth Andrew's Shop, Bath, Ohio.

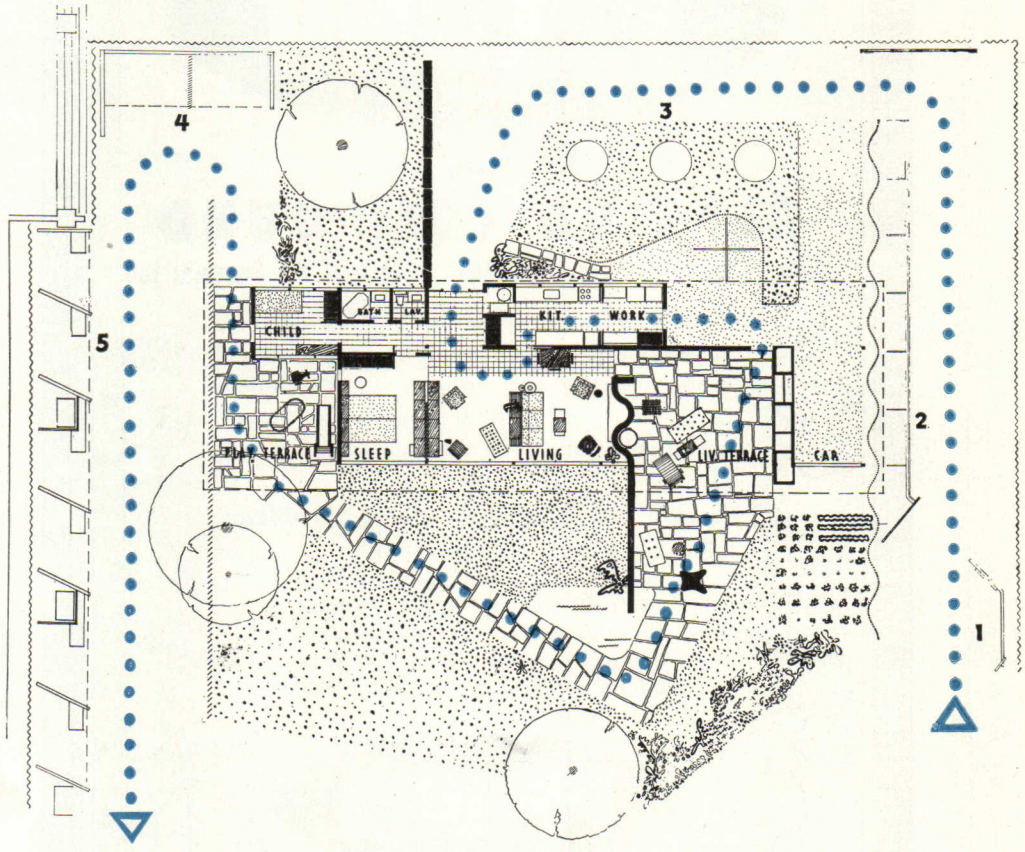
The general plan at right shows how the visitors circling the model house were drawn past an "Educational Exhibit of Reasonable Architecture" be-



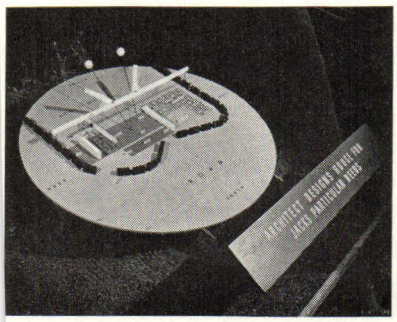
2

inning with general panels (1) explaining the respective roles of the client, the architect, and the builders; past a series of panels (2) describing the needs of an average family; then past abstract models (3) analyzing the development of a site and house to comply with the needs of the client-family above). At this point, the educational exhibit was broken, to permit visitors





Photos: C. W. Akerman Studio



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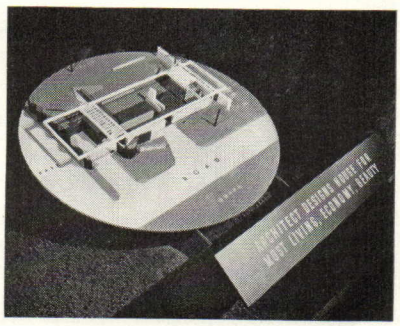
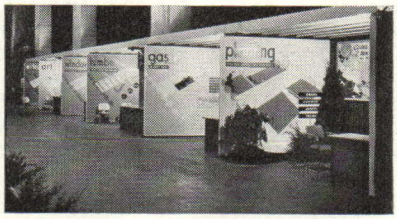
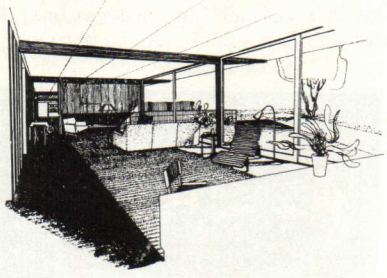


to walk through the model house and the garden.

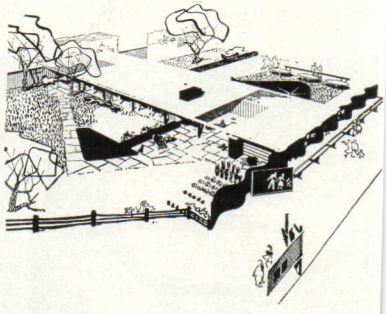
After viewing the house, visitors found themselves before a double booth (4) occupied by representatives of the A.I.A. Chapter and of the decorator, where the hundreds of inquiries about this house or similar "dream homes" were answered. As they left the enclosure, they were again drawn past a supplemental "Educational Exhibit of Materials" (5) where they could examine and discuss the new products of interest to a prospective home builder.

This notable project of the Cleveland Chapter, A.I.A. originated in a desire to present effectively the value of an architect. In designing a specific example, particular emphasis was laid on design for livability. Dubbed "The House That Jack Built," it was considered in terms of the needs of a family of three, thus affording a framework for dramatic presentation of the basic principles of contemporary architectural design. Advanced developments in structure, materials, and equipment also were freely introduced. One of the perspective studies of the living room, with fireplace at the end and a glass wall opening on the garden, is shown below

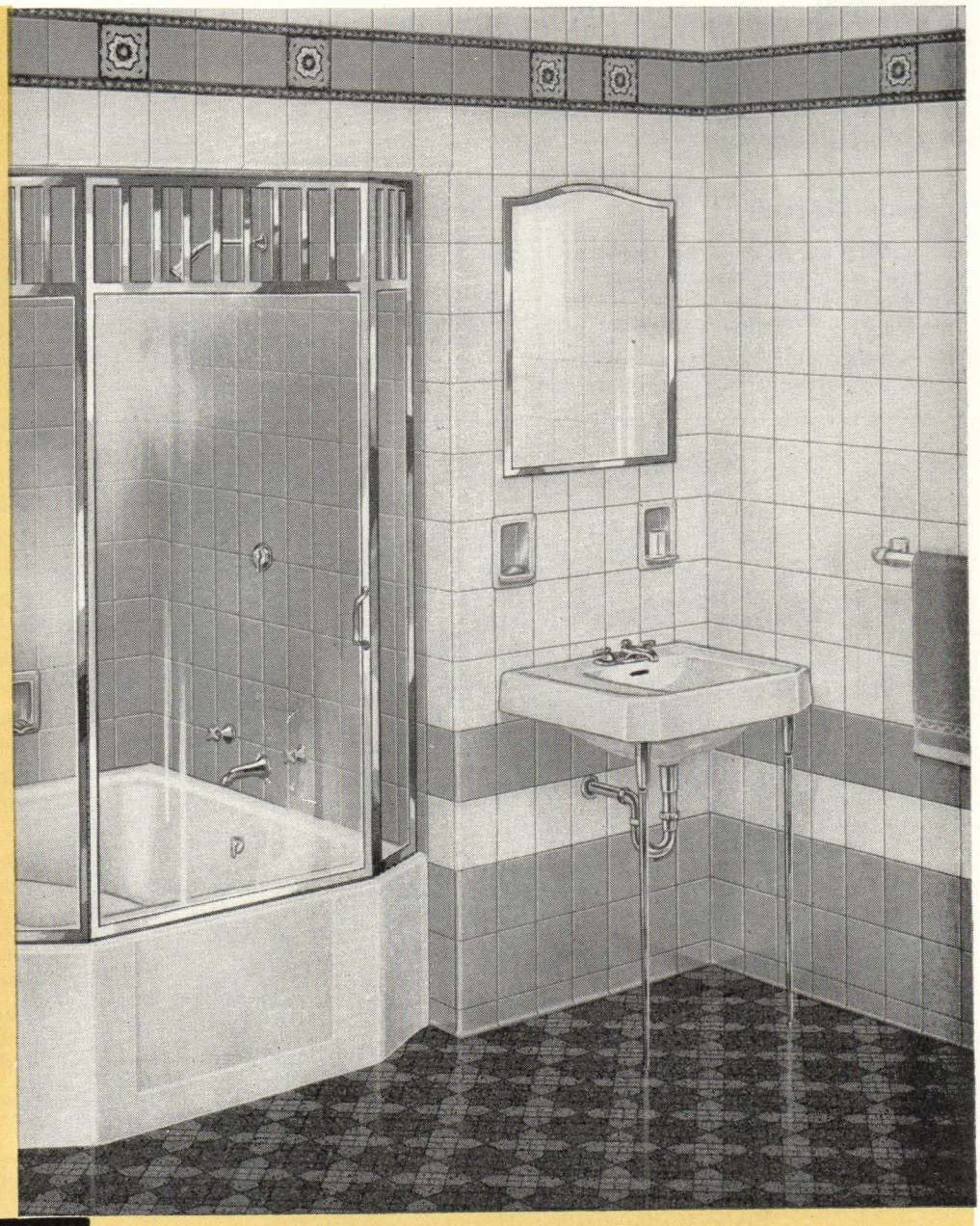




Educational aspects of the exhibit of architectural function and of new products were adroitly handled by Architects Hams and Little, as described above. The general scheme of the house and displays is indicated by the sketch below, with the entrance and first panel in the foreground.



One of many full color illustrations in The Color Book Of Tile. See color schemes, alternate patterns, bathroom accessories, inserts, decorative tiles.



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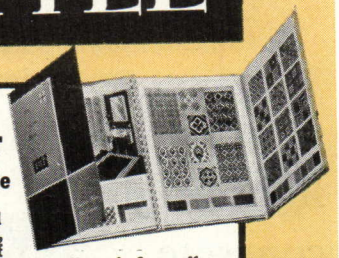

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NOTICES

CHANGES IN FIRMS

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HAMEL-GAYNOR ASSOCIATES announce their dissolution of partnership and the continuance of the firm as GAYNOR AND ALBRIGHT, 2909 Maple Ave., Dallas 4, Texas.

MICHAELSON & FEDELI announce the dissolution of their association and the continuance of IRVIN MICHAELSON, Architect-Engineer, in practice at 1507 Fox Building, Philadelphia, Pa.

NEW ADDRESSES

LAURENCE M. LOEB, Architect, 406 Mamaroneck Ave., White Plains, N. Y.

GREGORY AIN, Architect, JOSEPH JOHNSON and ALFRED DAY collaborating 2305 Hyperion Ave., Los Angeles 27 Calif.

SAMUEL PAUL, Architect, 89-51 164 St. Jamaica, N. Y.

EBERLE M. SMITH ASSOCIATES, INC. Architects and Engineers, 153 E. Elizabeth St., Detroit 1, Mich.

STUART FROST, Architect, 1 E. Putnam Ave., First National Bank Bldg., Greenwich, Conn.

DAVID C. BAER, Architect, 1202 Bissonnet, Houston, Tex.

KUHN & NEWCOMBER, Architects, 47 Washington Rd., Pittsburgh 28, Pa.

SAMUEL PAUL, Architect, 89-51 164 St Jamaica 3, N. Y.

EUGENE HENRY KLABER, Cloud Hil Quakertown, Pa.

SAM J. GLABERSON, Architect, 200 E. 3 St., New York 16, N. Y.

LEON LEGRAND, Architect, Room 11(Stokes Building, Greenville, S. C.

GAUDREAU & GAUDREAU, Architects Professional Building, 330 N. Charle St., Baltimore 1, Md.

COLEMAN & COLEMAN, Architects, ar nounce the formation of a new partnership with JOHN W. GREINER, Architec under the firm name of COLEMAN GREINER & COLEMAN, P.O. Box 24 Landisville, Pa.

CERF S. ROSS, Commercial, Residentia Industrial Design and Planning, 11 Auditorium Circle, San Antonio 5, Te

WALDRON ASSOCIATES (Furniture), 12 2 Ave., New York 21, N. Y.

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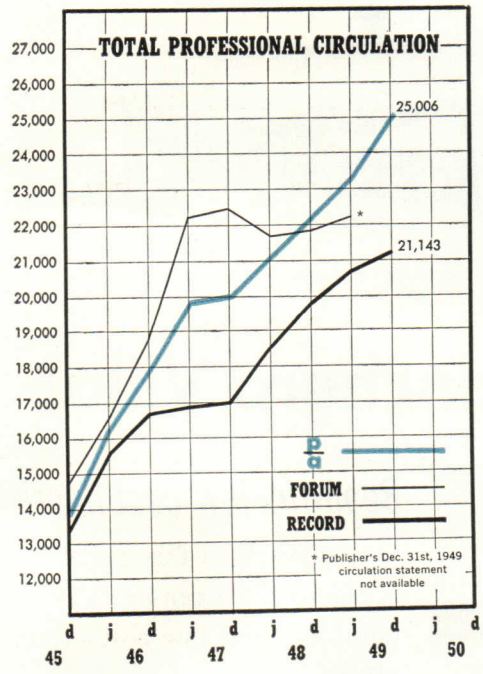
HENRY J. TOMBS and J. EDWIN WEL with J. Warner Morgan, Charles Altman, J. Starke Hamilton, Jr., a L. Dale Zent as associates (TOOM AND COMPANY, Architects), 127 Walt St., N.W., Atlanta, Ga.

PETER KUMP, Architect, 262 Califor St., San Francisco 11, Calif.

ARTHUR D. JANSSEN, Architect WILLIAM H. DASEKING, Architect, sociate, 1616 El Camino Real, M Park, Calif.

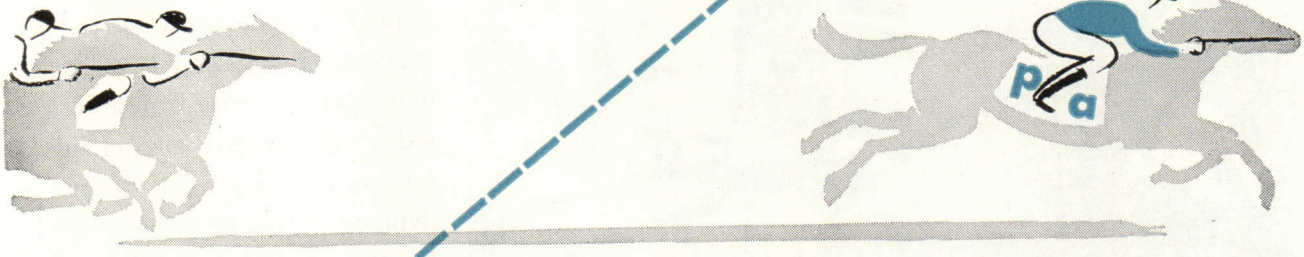
WILLIAM BECKETT, Architect, 9026 rose Ave., Los Angeles 46, Calif.



Between Dec. 31, 1945 and June 30, 1949

	Architects	Designers	Draftsmen	Engineers
p/a added	5,749	1,673	2,272	75
Pub. B added	3,871	1,543	1,701	403
Pub. C added	3,438	1,203	1,049	1,377

The Winner!



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p/a wins **195** new designers against Pub. C's **55**

p/a wins **183** new draftsmen; Pub. C lost **123**

p/a wins **383** new engineers against Pub. C's **336**

**Pub. B's Dec. 31st, 1949 circulation statement not available.*

p/a June issue will contain architectural scoop of the year—the A to Z materials story on the U.N. Secretariat Building. Every manufacturer whose product is a part of the building will want to make this an advertising tie-in must.

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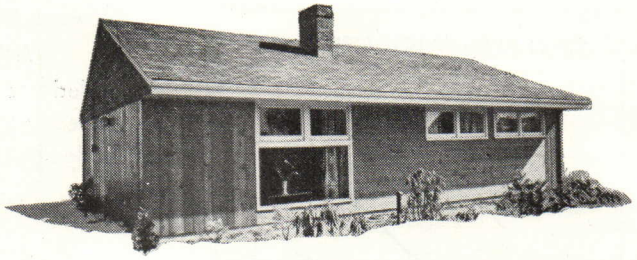

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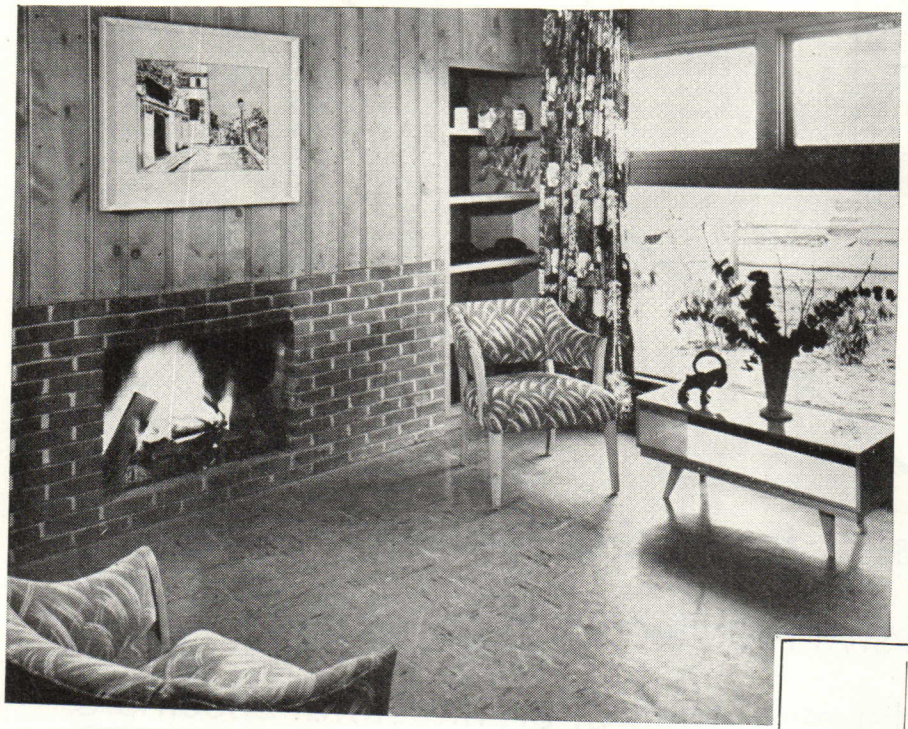

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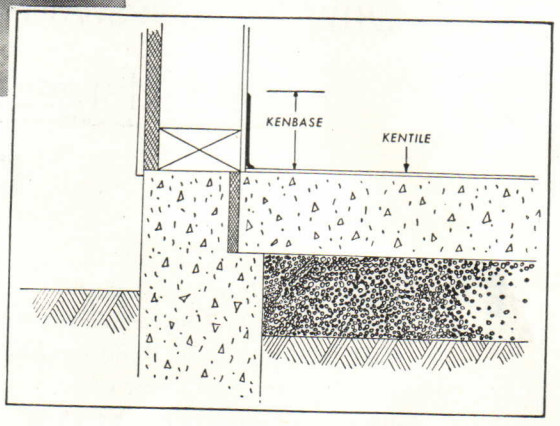

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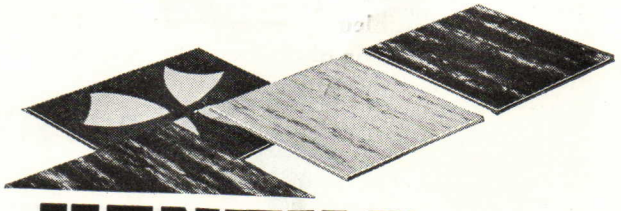

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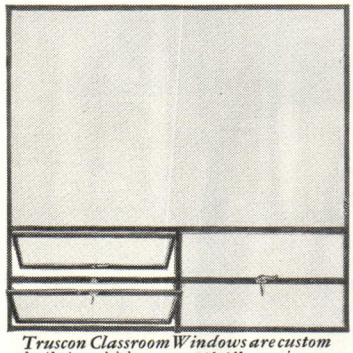

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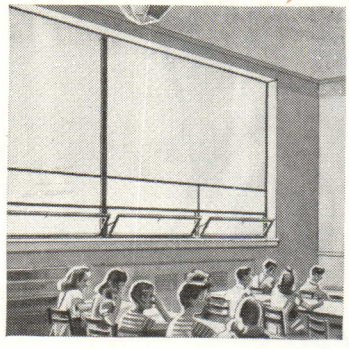

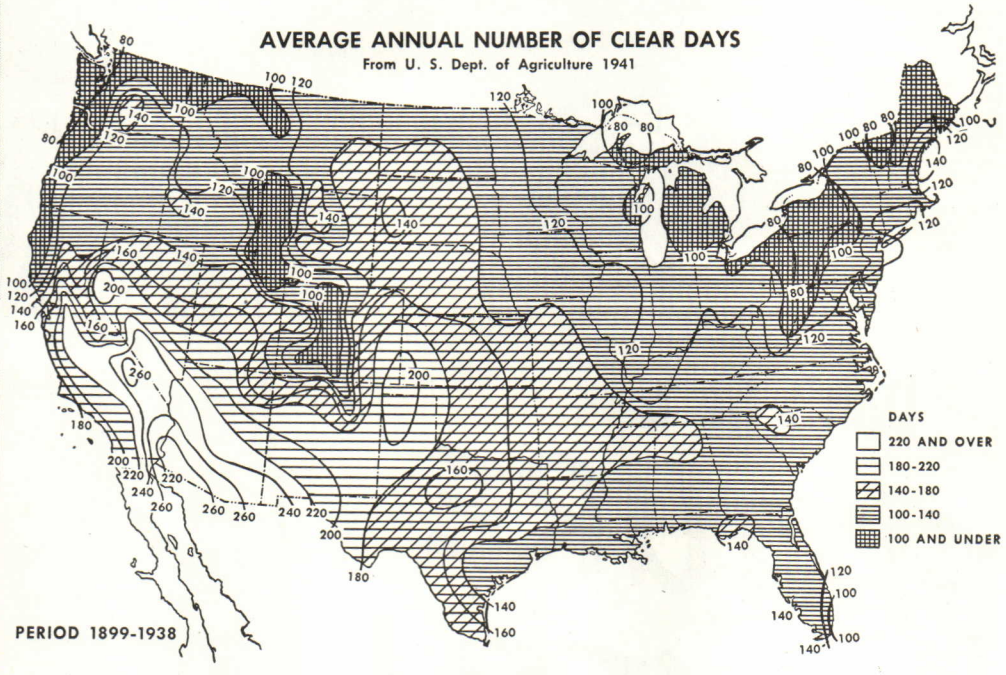

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This U. S. Department of Agriculture map indicates that more than 90% of America has an average of 180 or less clear days in each year. A large percentage of these days will be during class-free summer and week-end periods. • In selecting a type of daylight opening for classrooms, it is imperative to use one that transmits the maximum amount of light . . . while permitting controlled ventilation in either fair or inclement weather. • Truscon Intermediate Classroom Windows provide these requirements, and permit selection of glass in upper fixed panel to meet exactly the varying needs of geographical location, climatic conditions, and degree of window exposure to direct solar rays. Write for free literature giving complete details.

FREE Book on Truscon Steel Windows. Write for it. The Truscon Steel Company Manufactures a Complete Line of Steel Windows and Mechanical Operators . . . Steel Joists . . . Metal Lath . . . Steeldeck Roofs . . . Reinforcing Steel . . . Industrial Steel Doors . . . Coal Chute Doors . . . Steel Lintels . . . Concrete Reinforcing Bars . . . Welded Steel Fabric.

TRUSCON STEEL COMPANY
Subsidiary of Republic Steel Corporation
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Warehouses and sales offices in principal cities

In General Petroleum's new Los Angeles home . . .

Architects: Welton Becket and Wurdeman & Becket

Towel Cabinet (Scott #945) is recessed flush with wall. It's handy for users . . . helps maintain streamlined styling in the washroom.

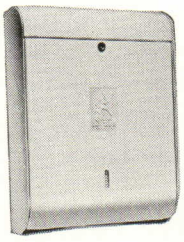
Waste Receptacle (Scott #945) is built-in, too. Set at a handy waist-level . . . it's Scott's contribution to washroom beauty and convenience.

SCOTT RECESSED FIXTURES add beauty and convenience to modern washrooms!

When Welton Becket and Wurdeman & Becket designed the washrooms for this new General Petroleum building, they followed the current trend in architecture by recessing fixtures wherever possible.

Scott helped make the job easy . . . by offering the services of thoroughly trained consultants, plus all the priceless experience and knowledge gained while servicing over 300,000 washrooms.

Do yourself and your client a real favor by taking extra care in the planning of his personal service rooms. Your reputation will benefit . . . your client will be rewarded through the added good will of washroom users. To get Scott on your team . . . just contact "Washroom Advisory Service," Scott Paper Company, Chester, Pennsylvania.



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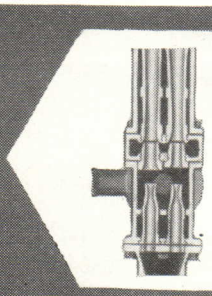
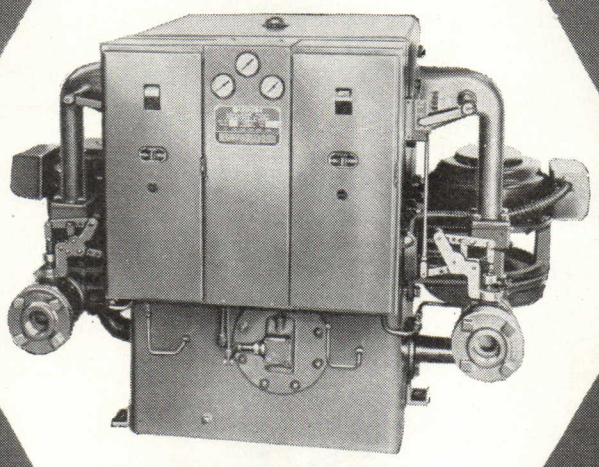
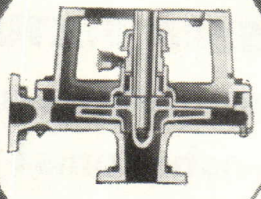


UNSURPASSED PERFORMANCE
—Brass jet exhausters create high vacuum.

first you see the difference ...then you pocket it!





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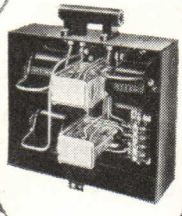
—Simple water impeller eliminates all close tolerances.



UP TO 40% FUEL SAVING—Differential Controller varies vacuum up to 26 inches.

DUNHAM VACUUM PUMPS step up to steam circulation ... lower fuel costs. Your clients get more heat for their money when you specify a Dunham Vacuum Pump. *Designed to pull up to 26 inches of vacuum,* these pumps easily handle the requirements of any steam heating system. Provide better circulation and control of steam ... shorten "heating up" periods.

Dunham Vacuum Pumps are extremely simple and compact in design. The only principal moving element is the water impeller. Flow of water through the exhauster jets creates a high vacuum ... maintains positive pressure to discharge condensate direct to boiler. There are no moving parts under vacuum ... no close tolerance parts to slip out of adjustment.

Available as single or duplex units—in a full range of capacities to meet most heating demands. Dunham Vacuum Pumps are ready for immediate operation on delivery.

These Pumps Help Dunham Differential Heating Cut Fuel Costs up to 40%
These pumps are the heart of the famous Dunham Vari-Vac* Heating System ... the precision temperature control system that, for example, has enabled the Millard Fillmore Hospital, Buffalo, N. Y., to save 37.8% annually on steam consumed since 1935.

SEND FOR THIS FREE BULLETIN!

Write today for your free copy of File No. 4C-2-8, giving complete facts and figures about these cost-saving Vacuum Pumps and other Dunham Heating Products. C. A. Dunham Co., 400 W. Madison St., Chicago 6, Ill. *In Canada:* C. A. Dunham Co., Ltd., Toronto. *In England:* C. A. Dunham Co. Ltd., London. *Sales Engineers and Jobbers in All Principal Cities.*

**Variable Vacuum*

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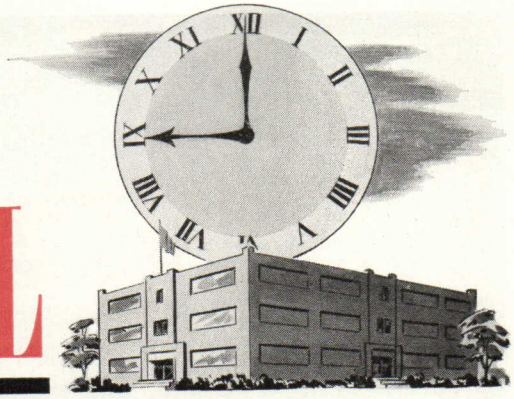
HEATING MEANS BETTER HEATING

AUTH SYSTEMS FOR THE SCHOOL



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FIRE ALARM • INTERIOR TELEPHONE • MISCELLANEOUS SIGNAL

Ask the men who maintain them — Auth systems for schools are *dependable — trouble-free —*

Why? Because Auth Clock Systems, featuring the famous Telechron self-starting synchronous movements, do not require complicated master clocks, relays, rectifiers, etc., to assure correct time. Contactless type program bells and buzzers assure long life and smooth operation.

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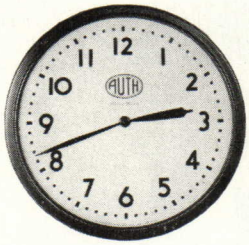
For many years the Boards of Education of the City of New York and numerous other municipalities have installed Auth systems. *Dependability is the reason.*



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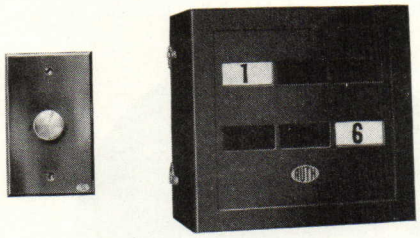

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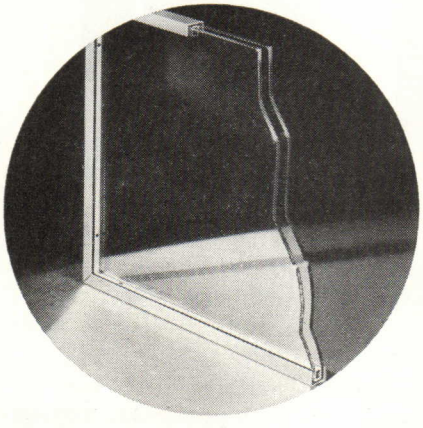
Noteworthy uses OF GLASS

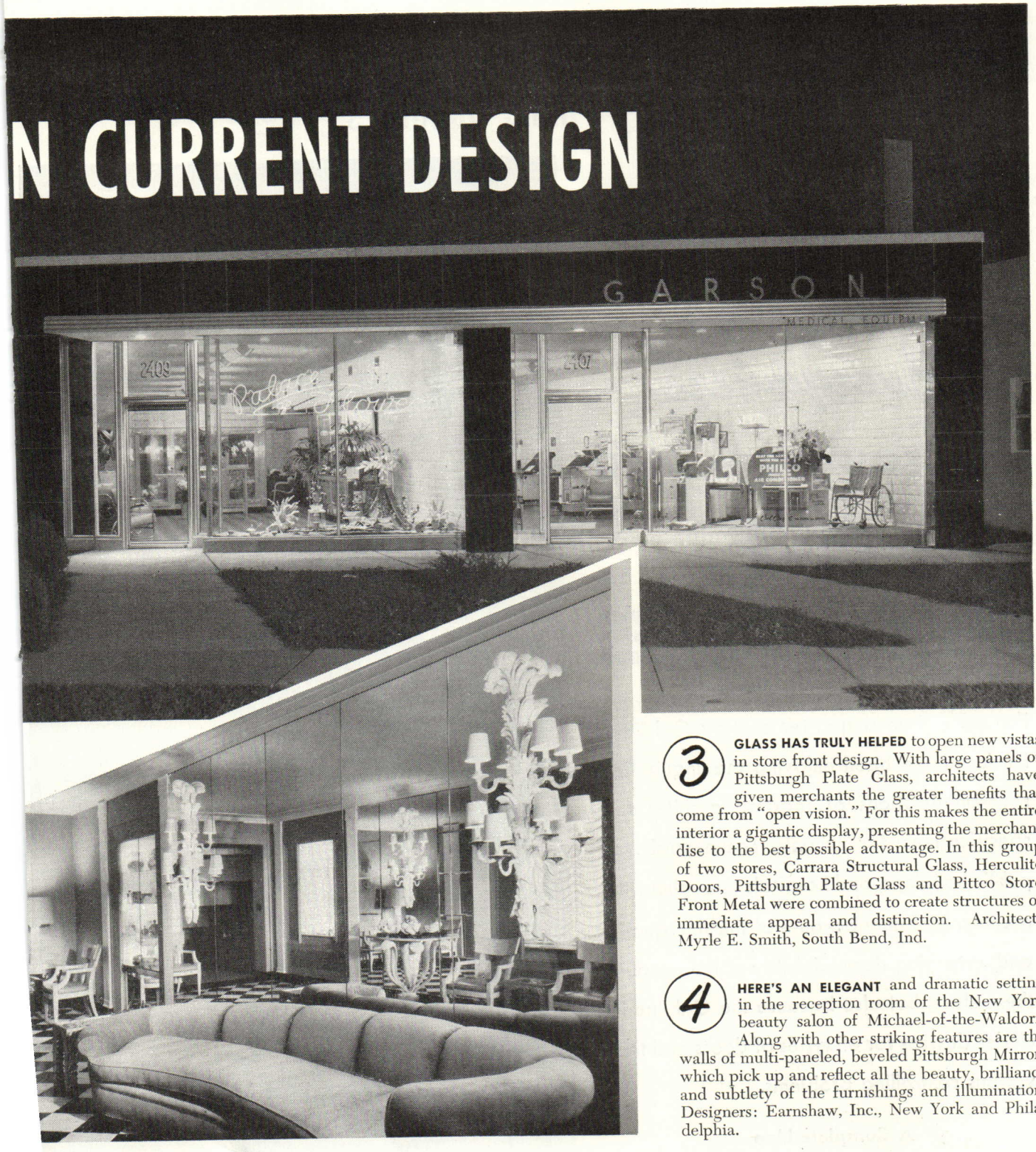
1 **THIS VIEW** of the new terminal building at the South Bend, Indiana, airport, presents a spectacular scene—by day as well as at night. The whole effect is heightened by the use of more than 125 Twindow units which glaze almost the entire area of this side of the building. The built-in insulation of Twindow adds to the comfort and convenience of the patrons by eliminating cold downdrafts at windows. Besides, Twindow units afford a clear view of the airport activities. Architect: Roy A. Worden, South Bend, Ind.; Associate Architect: Vincent Fagan, South Bend, Ind.; Consulting Architect: Frank Montana, Detroit, Mich.



CUTAWAY shows the construction of a Twindow unit, with two panes of Pittsburgh Polished Plate Glass. The hermetically-sealed air space between the panes provides effective insulation which minimizes downdrafts, cuts heat losses through windows, reduces condensation. When three or more panes are used, insulation is even more efficient. Forty-five standard picture window sizes are available, adaptable either for wood or steel sash.

2 **PITTSBURGH DOORWAYS** cut corners for architects. They eliminate time-consuming calculations. There is no setting or fitting to worry about. From the twelve standard and four free-standing designs, you select the one for your job, simply by specifying the number and size needed. The frame reaches the job complete and ready for bolting into the building opening—in one "package." The massive Herculite Doors are then hung, and the work is done. Architect: Horace Coy, Toledo, Ohio.

N CURRENT DESIGN



3 **GLASS HAS TRULY HELPED** to open new vistas in store front design. With large panels of Pittsburgh Plate Glass, architects have given merchants the greater benefits that come from "open vision." For this makes the entire interior a gigantic display, presenting the merchandise to the best possible advantage. In this group of two stores, Carrara Structural Glass, Herculite Doors, Pittsburgh Plate Glass and Pittco Store Front Metal were combined to create structures of immediate appeal and distinction. Architect: Myrle E. Smith, South Bend, Ind.

4 **HERE'S AN ELEGANT** and dramatic setting in the reception room of the New York beauty salon of Michael-of-the-Waldorf. Along with other striking features are the walls of multi-paneled, beveled Pittsburgh Mirrors which pick up and reflect all the beauty, brilliance and subtlety of the furnishings and illumination. Designers: Earnshaw, Inc., New York and Philadelphia.

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Your Sweet's Catalog File contains a complete listing and descriptions of Pittsburgh Plate Glass Company products.

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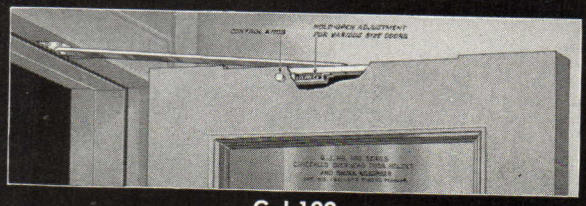

G-J 100
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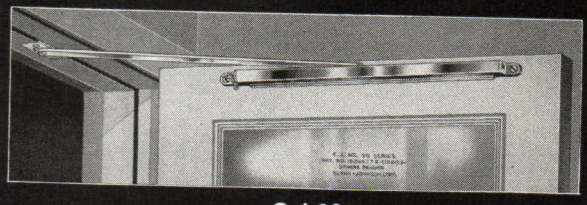

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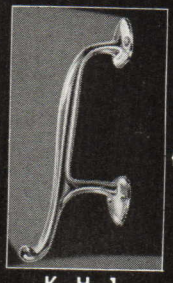

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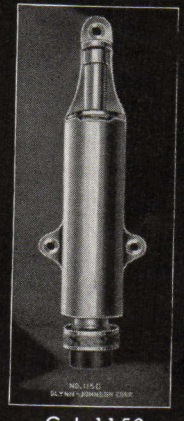

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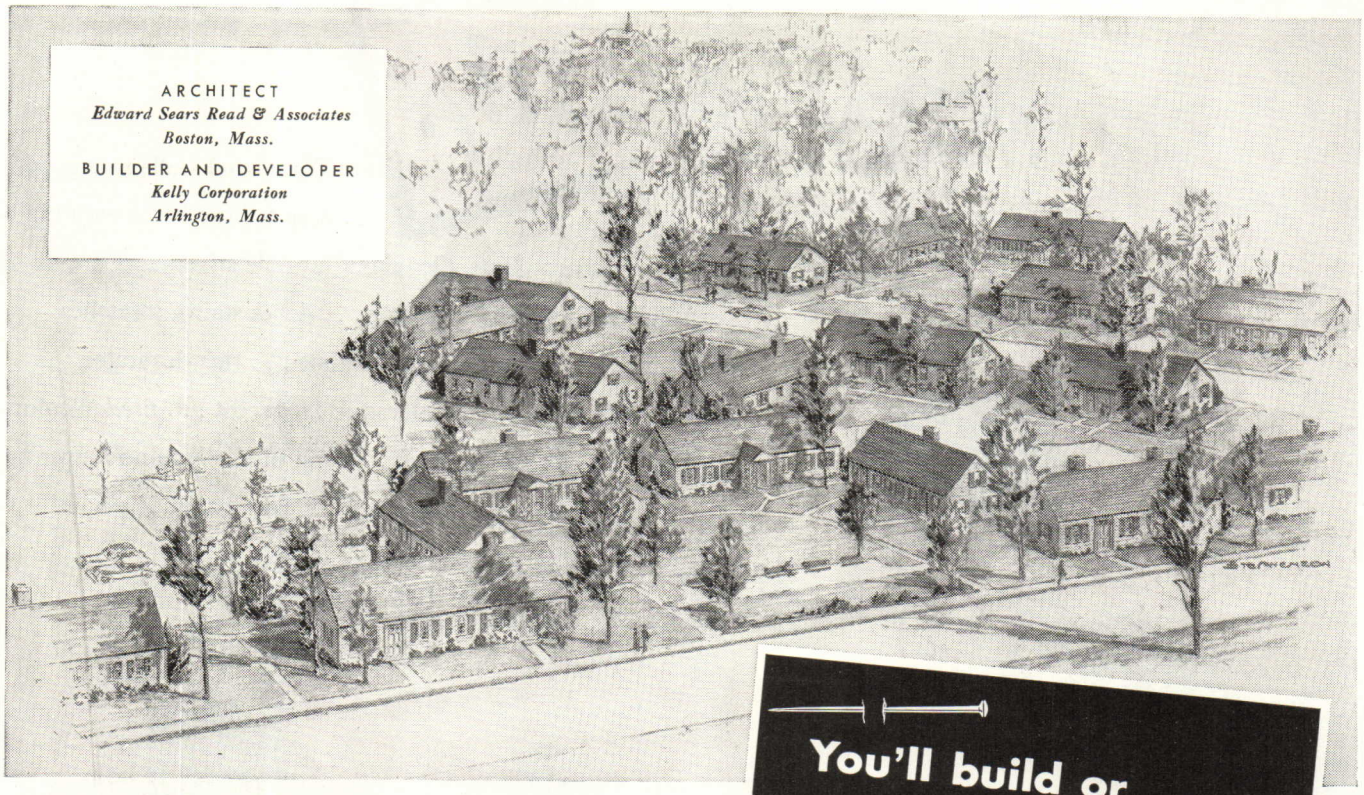

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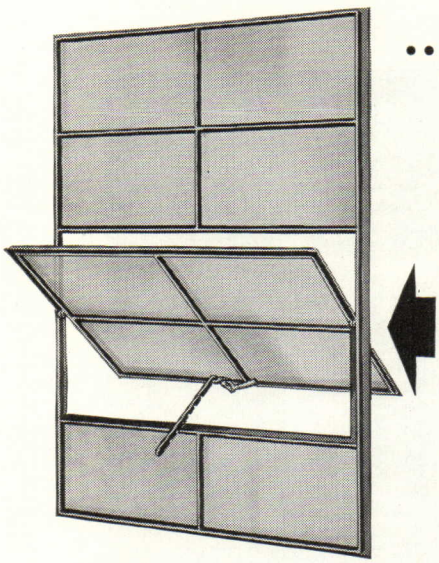
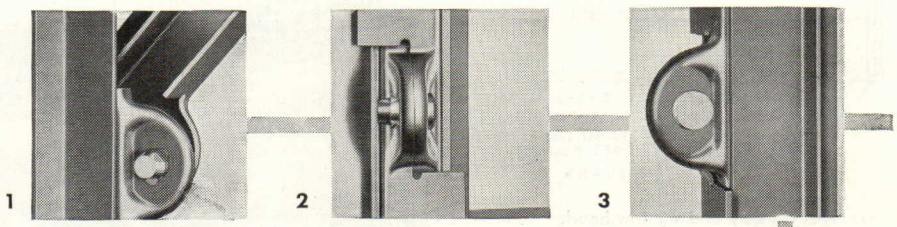
Tips on cutting window costs

If You Want To Cut Maintenance Costs

...look for this Window Feature

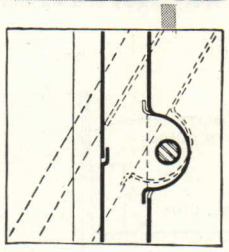


New Fenestra Pivoted Window



THE NEW STREAMLINED INTEGRAL VENTILATOR BUTT

One of 7 Features of Fenestra Superiority



Above, you see the new Fenestra* Pivoted Steel Window and 4 views of the exclusive feature that slashes window maintenance . . . the new, streamlined *integral* butt which keeps vents fitting perfectly for complete weather-tightness. (1) Frame side (2) Head-on, inside view (3) Window side (4) Overlapping weathering sections. The butt has no protruding parts open to damage. Cup shape and drawn ribs give it special strength.

Fenestra Pivoted Windows are widely used for extra daylight, fresh air and see-through vision.

With slender lines and extra glass area, all Fenestra Industrial Steel Windows bring in extra daylight . . . reduce accident-tempting shadows. They bring in cool, clean fresh air, no matter what the weather—protecting ventilators guard the openings. They're good looking and rugged, warpproof and firesafe. They can be easily combined vertically or horizontally to form whole walls of windows.

Fenestra Windows cost less in three important ways: *Low first cost:* Standardization of types and sizes permits efficient volume production. *Low installation cost:* Modular sizes provide co-ordination of windows with wall materials. *Low maintenance cost:* Precision fabrication of strong, high-quality materials.

For plants, offices, labs, warehouses, commercial buildings and many others, Fenestra Industrial Steel Windows are your best bet for high quality at remarkably low cost.

Mail the coupon for types and sizes. Or call your Fenestra Salesman (listed in your Yellow Telephone Directory) . . . Representative of America's oldest and largest Steel Window Manufacturer. *®

7 SAVINGS WITH NEW FENESTRA WINDOWS

1. Butts integral with jamb weathering bars—stronger, fewer parts, lower maintenance.
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3. Automatic assembly of ventilators—vents fit properly and operate easily.
4. Extended jamb bars—vents always align perfectly.
5. Strong, tight-weathering sections—continuous double contact all around vent opening.
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7. Strong hardware attachment—prevents breakage, affords safer locking.

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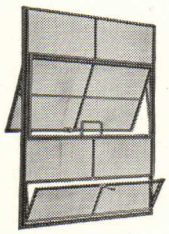
Popular for efficient, economical screening or shading—vents do not interfere. Open-out vent serves as a canopy over opening, protecting interior against rain; open-in vent is a built-in windguard, shedding water outside.



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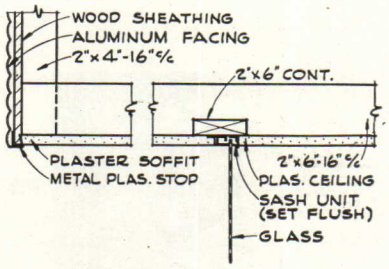
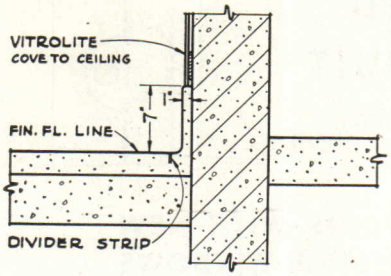
DETAILS FOR YOUR STOREFRONT FILE

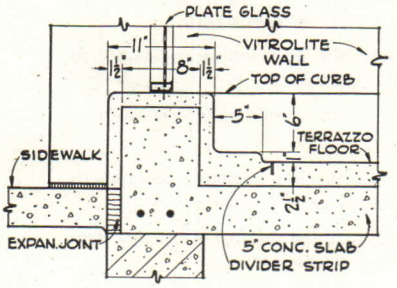
VISUAL LOF FRONT



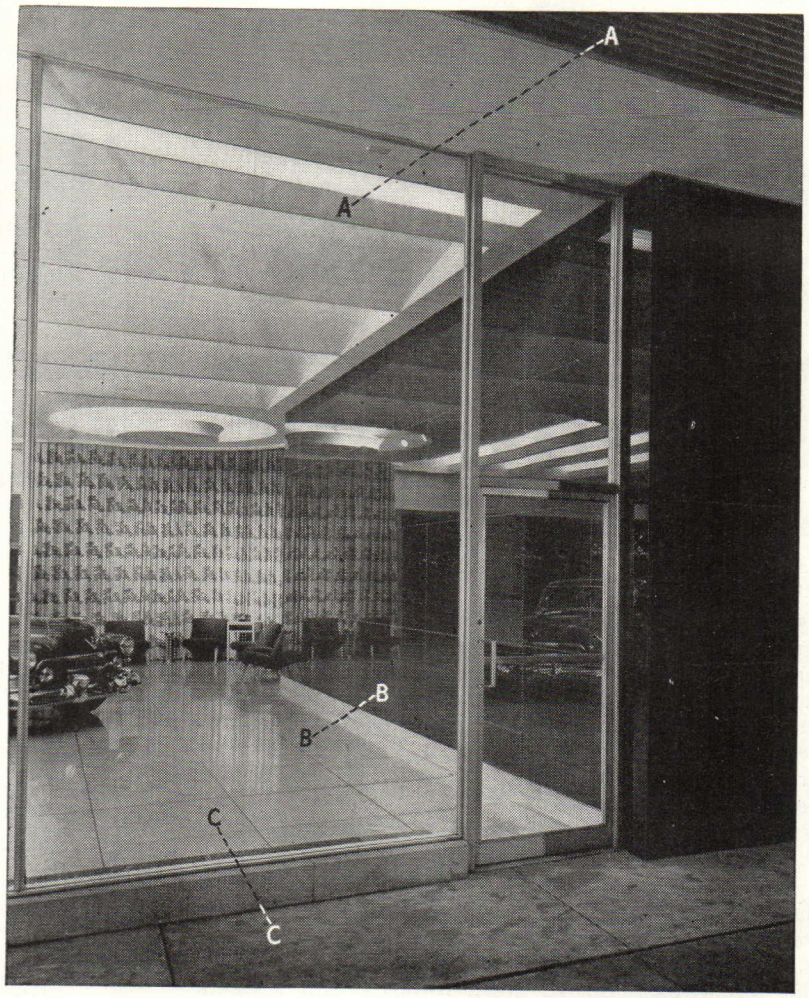
A-A Canopy and window head.



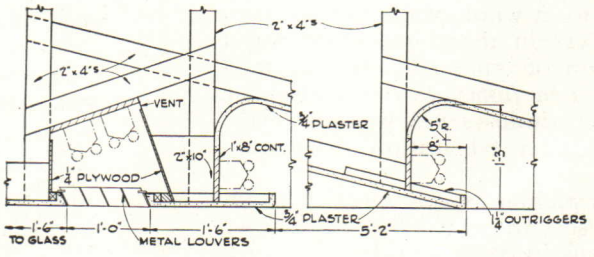
B-B Base, showing *Vitrolite* wall.



C-C Bulkhead. Plate glass extends along bulkhead to *Vitrolite* wall.



Architect: Karl B. Hoke, Toledo



Ceiling

Lighting

Details

INVITATION TO ENTER. The principle of the Visual Front—to make it easy for people to see into a store—is effectively carried out in this auto showroom. Clear Plate Glass is used expansively to permit a full view from many angles.

The large window is butted against a mahogany *Vitrolite** wall. Note that the *Vitrolite* extends back through the plate glass window. This carries the eye inside, creating an illusion of being inside the showroom even when outside. *Vitrolite* adds a wall of color that doesn't fade—doesn't need refinishing.

Write for our Visual Fronts book, which explains many interesting uses of glass in storefronts.

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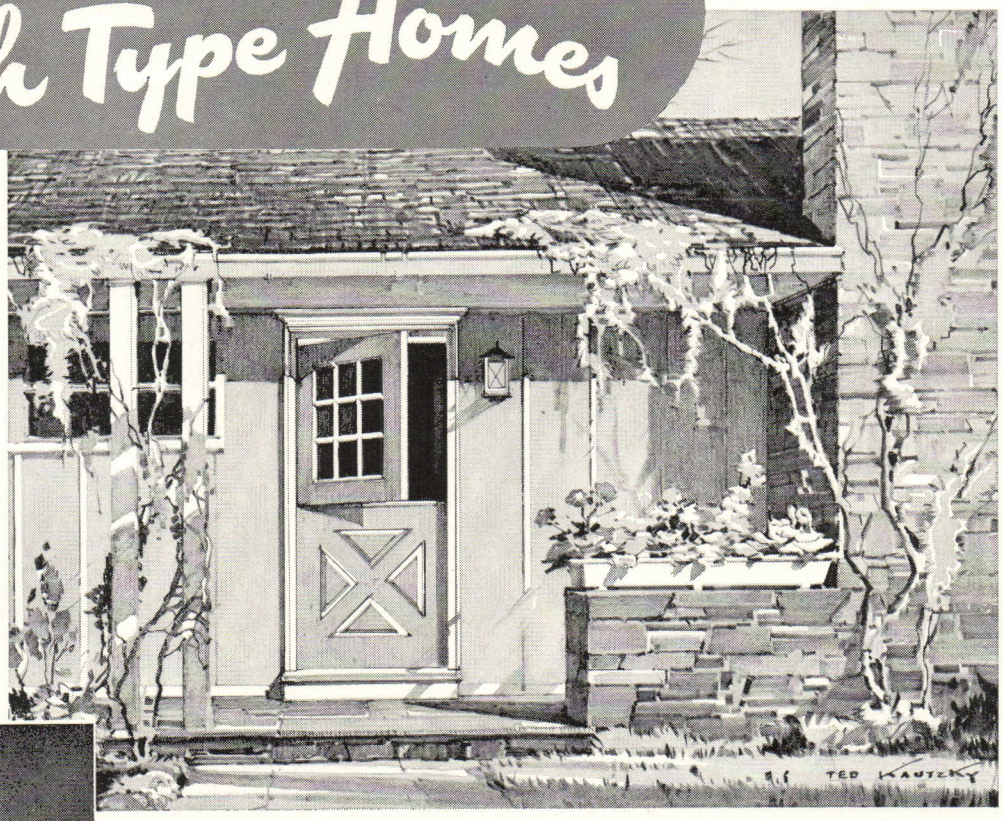

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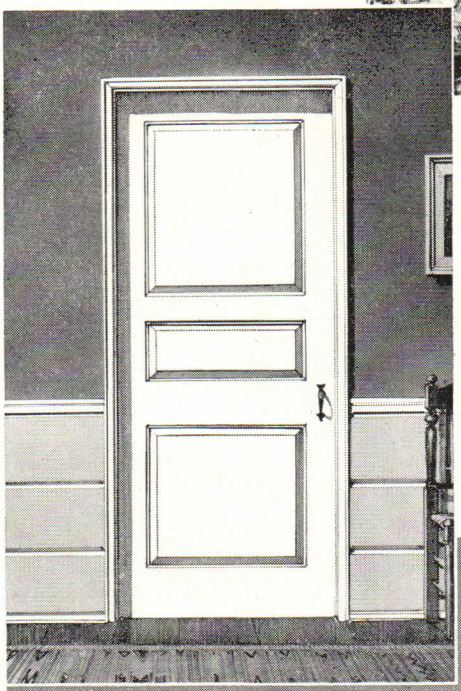

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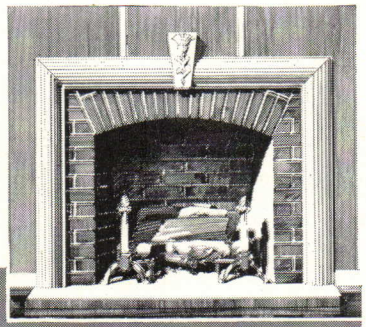

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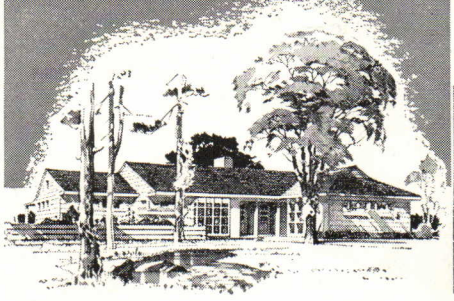
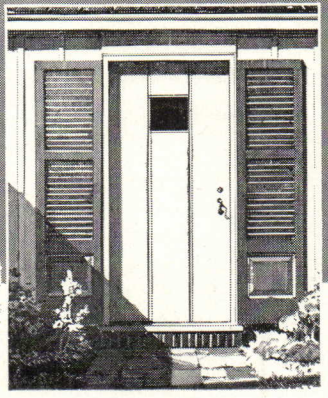
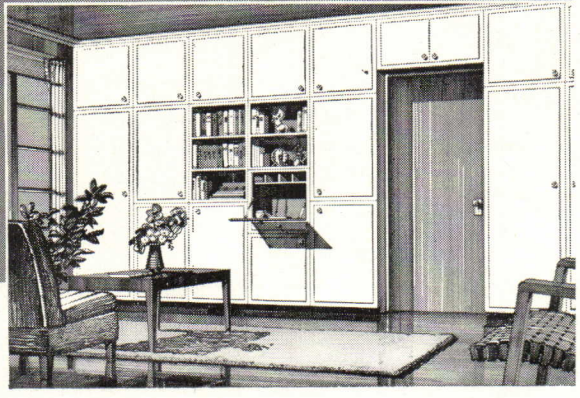
MORGAN

Top: Dutch Door M-110; Above: Interior Door M-1073; Mantel: M-1462; Right: Door Blinds M-510, Door M-120J; Morganwall Cabinet Installation.



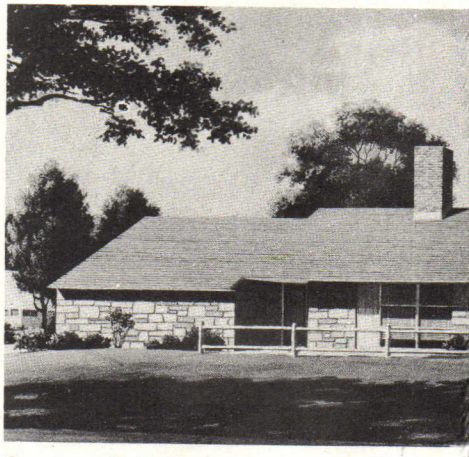




5000 BRIGGS BATHROOMS IN COLOR

William J. Levitt . . . dynamic spark-plug of Levitt & Sons, Builders, Manhasset, Long Island.

world's biggest builder knows what it takes to sell houses



Country Club district features spacious, individual homes like this. There will be a select 500 of them built this year at prices from $17,500 to $22,500—each furnished with two de luxe Briggs bathrooms in color.

WHATEVER Levitt does . . . it's always BIG! When they start building houses—a city of 40,000 springs up almost overnight. When they overhear people say that they want colored bathroom fixtures—they order them by the thousand.

Five thousand, to be exact . . . and every single one of them Briggs Beautyware!

Knowing Levitt, there must be good reasons for this big change in contract. And knowing Briggs, there are!

First, Briggs is the only plumbing ware manufacturer whose methods of making fixtures is as modern and streamlined as Levitt's way of making houses. That's why Briggs alone can sell a complete set of colored fixtures (including brass fittings) for only 10% more than white.

Second, Briggs colored fixtures have style appeal. They look smart and *expensive*—without adding any expense worth mentioning to the overall cost of the house.

And last, they have the famous lightness of weight and exact dimensions of all Briggs fixtures. Installations are faster, easier, "right on the nose" every time.

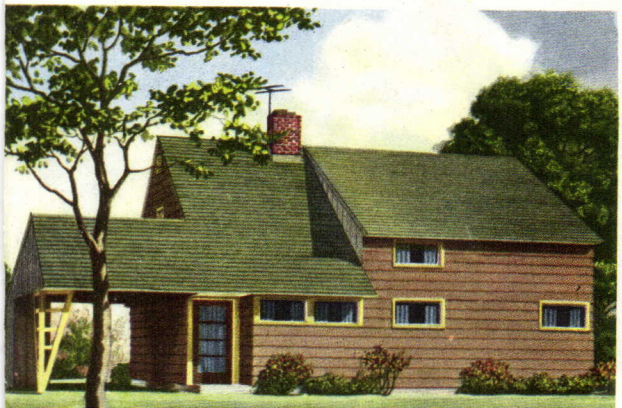
Yes! Levitt & Sons know and act on a good thing when they see it. And when they saw Briggs Beautyware in color they knew homeseekers would act on it—with *cash!* Why not start cashing in on it yourself, today!

"You should see their faces light up when the women first walk into this bathroom. There's no doubt about it, the luxury-look of Briggs Sandstone fixtures is a deciding factor in many a 'one look' sale." That's what Bill Levitt says about the Exhibit Home bathroom shown here. All the other houses in this class have the same modern layout and enamel tiling *plus* Briggs ultra-modern Sandstone fixtures.

BRIGGS *Beautyware* PLUMBING FIXTURES

Sea Green *Ivory* *Sparkling White* *Sandstone* *Sky Blue*

Whether you choose the Sandstone now being used in Levittown, or any other one of Briggs beautiful decorator colors, you will find that it adds immeasurably to the quick-sale value of all your homes.
Briggs Manufacturing Co., 3001 Miller Ave., Detroit 11, Michigan.

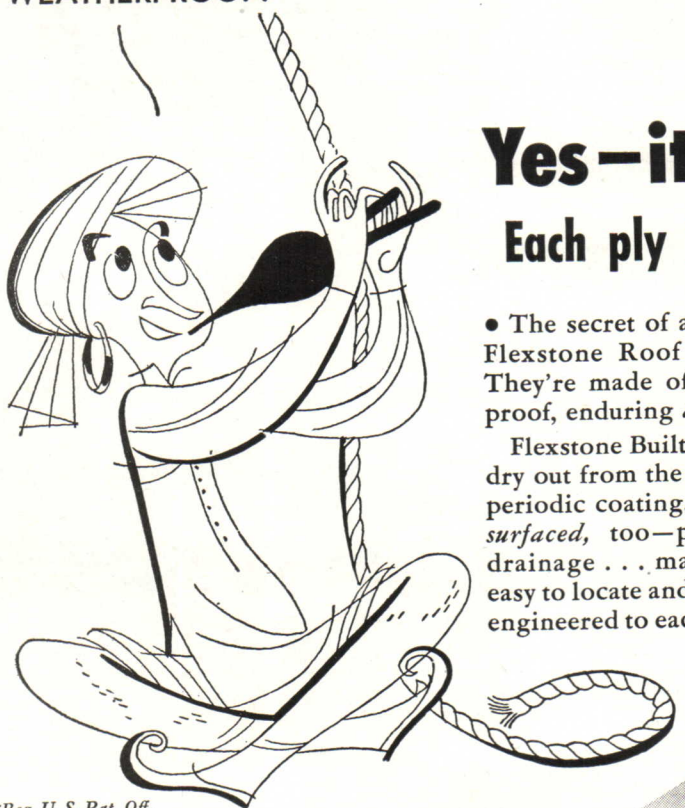


Typical of Levitt & Sons latest full-size houses on a pint-size budget. 4000 of these $7990 homes are going up now, all equipped with television and Briggs Sandstone fixtures.

"HEY, ISN'T THAT A SMOOTH-SURFACED ASBESTOS ROOF?"

"YES SIREE! AND THE FELTS ARE PERFORATED TO GIVE A SMOOTHER JOB"

"WHAT'S MORE, THOSE FELTS ARE FIREPROOF, ROTPROOF, WEATHERPROOF!"



Yes—it's a Flexstone* Roof

Each ply is a flexible covering of stone!

• The secret of a Johns-Manville Flexstone Roof is in the *felts.* They're made of fireproof, rotproof, enduring *asbestos.*

Flexstone Built-Up Roofs won't dry out from the sun . . . need no periodic coating. They're *smooth-surfaced,* too—permit thorough drainage . . . make any damage easy to locate and repair. They are engineered to each job . . . applied only by J-M Approved Roofers. J-M Asbestos felts are perforated to make application easier . . . give you a smoother job and conform better to irregularities in the roof deck.

Send for Flexstone brochure BU-51A. Contains complete specifications. Address: Johns-Manville, Box 290, New York 16, N. Y.

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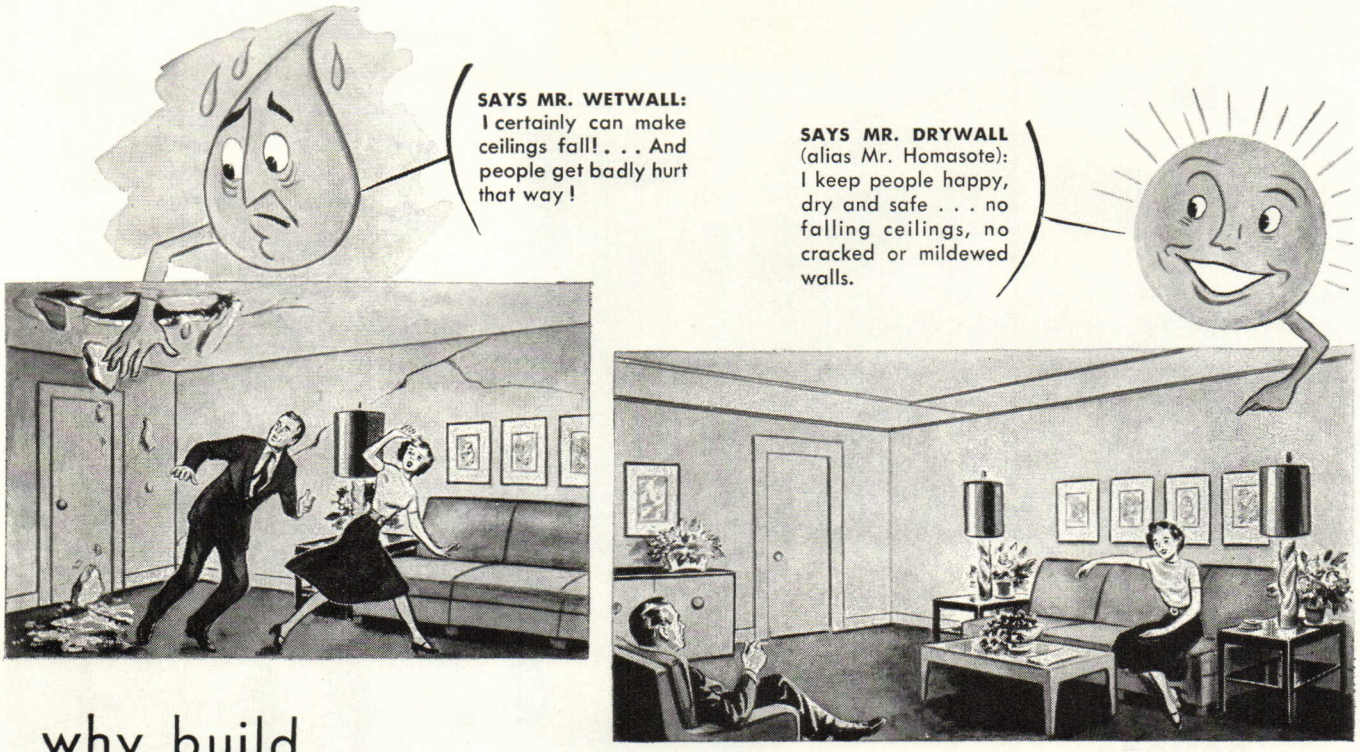
Reg. U. S. Pat. Off.

Johns-Manville FLEXSTONE* Built-Up Roofs

CORRUGATED TRANSITE* • ACOUSTICAL CEILINGS

DECORATIVE FLOORS • *TRANSITE WALLS • ETC.



why build WET . . . . when DRY WALL CONSTRUCTION is safer, faster, less expensive?

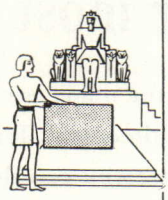
• If you have experienced the roar of a falling ceiling—if you have ever seen the terrific damage done—there is little we need tell you about Dry Wall Construction. You know —as we do—that Dry Wall Construction is the greatest advance in 300 years of building.

A recent survey—by a prominent builder—indicated that 54% of the home owners in his territory now prefer Dry Wall Construction for their next homes.

Mr. Carl G. Lans, Director of the Technical Service Department of the NAHB says, "Before the war, everything was lath and plaster; now it is a rare thing in residential construction. Dry wall has proved satisfactory, not only because it is much more economical, but also because it produces a true, straight wall . . . and eliminates the introduction of many gallons of moisture into the house. In addition, it is a time saver."

For 32 years Homasote has been used for Dry Wall Construction—in millions of dollars of private homes. Since 1936 its use has been supported by intensive research costing more than $500,000.

If Rameses had had Homasote . . .



instead of plaster, dry walls and ceilings would now have been the *accepted method.* It would have been impossible to gain acceptance for a material that creates the annoyances, expense and perils of cracked walls and falling ceilings.

Dry Wall Construction—with Homasote Big Sheets—offers many major advantages . . . The average wall is covered with a single sheet; batten strips and unsightly wall joints are eliminated. Joints are made at doors and windows, as desired . . . Labor costs are minimized; many fewer handling operations; many fewer nails . . . In a single material you provide lasting insulation value and great structural strength . . . You build a quieter home, free from dampness—with dependable insurance against musty closets and mildewed walls.

Dry Wall Construction—with Homasote Big Sheets — means walls that are permanently crackproof, ideal for paper or paint, lending themselves to modern decorating effects, modern mouldings and trim.

Let us send you performance data and illustrated literature on Homasote and allied products.

. . . in Big Sheets up to 8′ x 14′

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City & Zone_____ State_____

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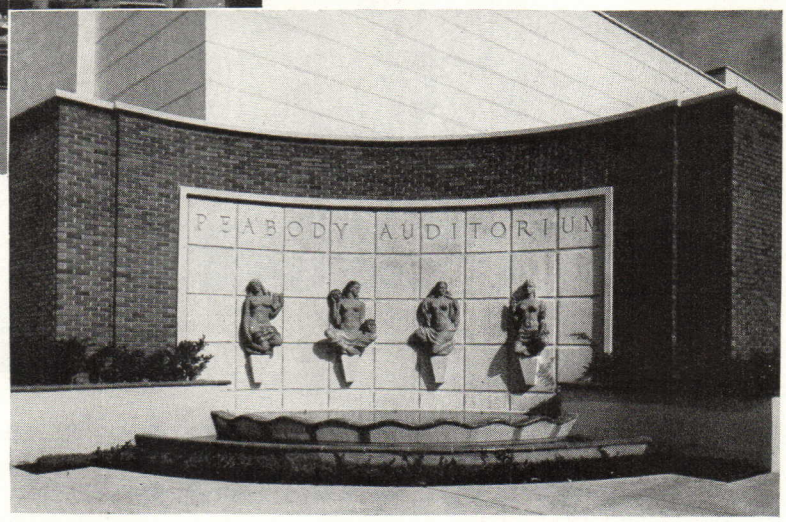
Syracuse, N. Y.
Robert A. Fash—*Architect*
Roger & McCay, Inc.—*Builders*
Facing is Enduro-Ashlar Architectural Terra Cotta in a neutral pearl gray, while black terra cotta comprises bulkhead and coping.

PEABODY AUDITORIUM
Daytona Beach, Fla.
McDonough & Craig and
Francis R. Walton—*Architects*
J. L. Ewell Constr. Co.—*Builders*
Joseph Nicolosi—*Sculptor*
Versatility of Enduro Architectural Terra Cotta is exemplified by four life-size polychrome statues and the wave motif of the fountain basin.



For severe surfaces

...or for decorative sculpture,

ENDURO-ASHLAR ARCHITECTURAL TERRA COTTA

meets your most exacting requirements!

Here are but two of the many ways in which more and more architects are specifying Enduro-Ashlar Architectural Terra Cotta. So remarkable is its plasticity of form, color and texture, that you can design in it without creative restraint. It can be produced in units large or small, for interiors or exteriors, in unlimited range of ceramic colors. It highlights the modern motif in architecture—for mercantile, industrial and monumental construction, and for modernization. Minimum maintenance is assured because Enduro-Ashlar Architectural Terra Cotta requires only simple soap-and-water washings to retain its original richness and beauty indefinitely.

Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without charge. Send your inquiry today.

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PLANTS AT PERTH AMBOY AND SOUTH AMBOY, N. J.

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by the square foot or by the million footsteps

—there's no floor value like

NORTHERN HARD MAPLE

From kindergarten to college, time-proved Northern Hard Maple floors fight the scuffs and scars of hundreds of millions of heedless footsteps...and stay bright, smooth, cheerful, resilient with minimum maintenance

And versatile Northern Hard Maple meets the most advanced of modern styling trends with its blond beauty!

In these cost-conscious days, may we suggest that you consider well another often-overlooked advantage of **MFMA**-graded Northern Hard Maple? Very important SAVINGS are assured *without the slightest sacrifice of utility and endurance*, by specifying **MFMA** Second Grade, or Second-and-Better Grade. Beauty, soundness, strength are all retained!

And for school shops, equipment rooms and such areas, still further savings are feasible with Third Grade **MFMA** flooring—a thoroughly sound specification.

America's leading architects and engineers will be found to concur in these conclusions.

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Latest (1950) Editions —Architectural 13g-7; Engineering 4j-21—for full details, dimensions standard specification data.

WRITE for special folders on second and third grades, and on list of **MFMA** approved finishes.

FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

Countryside **Today...**

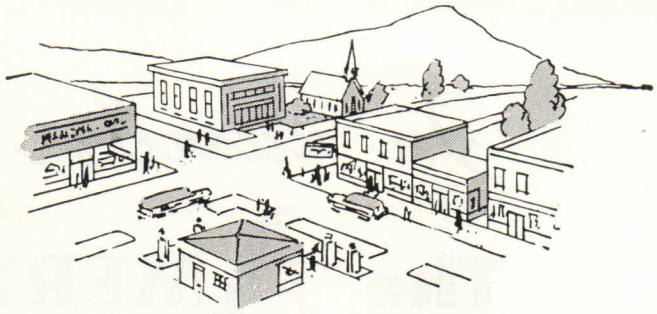
When *Speed* is the Need...Use CECO

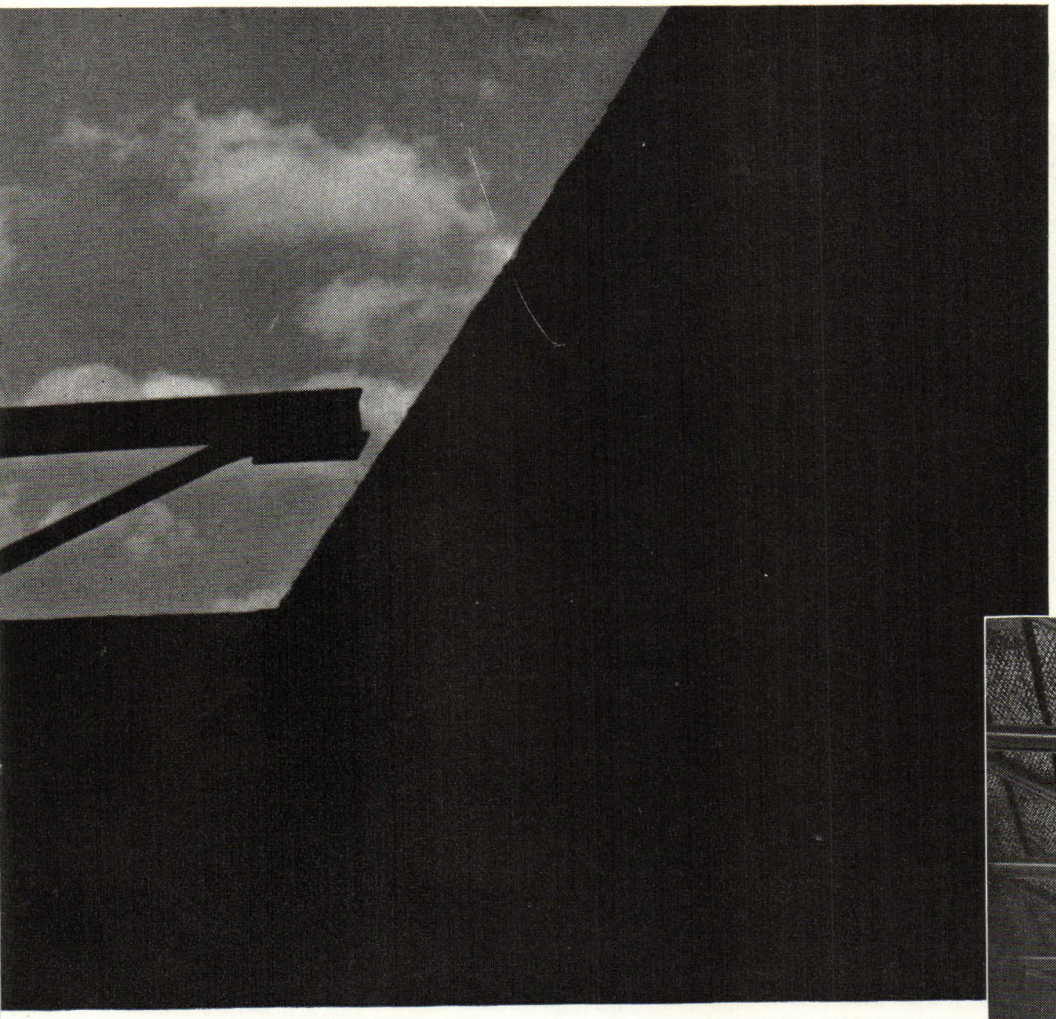
One day you pass a new development in the making, ground is broken, home foundations are in. Then, in just a short, short time, where once there was open countryside, a whole community, spick-and-span new, "has sprung up overnight." Chances are the stores, the school, the theatre . . . yes, most of the light occupancy buildings . . . were constructed with Open-Web Steel Joists. For that is the fastest way ever to build. There's no temporary formwork necessary . . . nothing to take down later on. Open-Web Steel Joists are self-centering . . . are placed on the wall structure and right away rib lath can be laid and concrete poured to form the floor. And while all this is going on, other building

CECO STEEL®

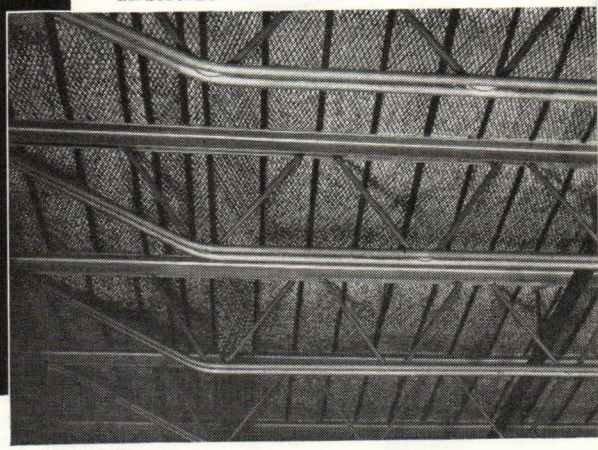
In construction products **CECO ENGINEERING**

a *Community* **Tomorrow**





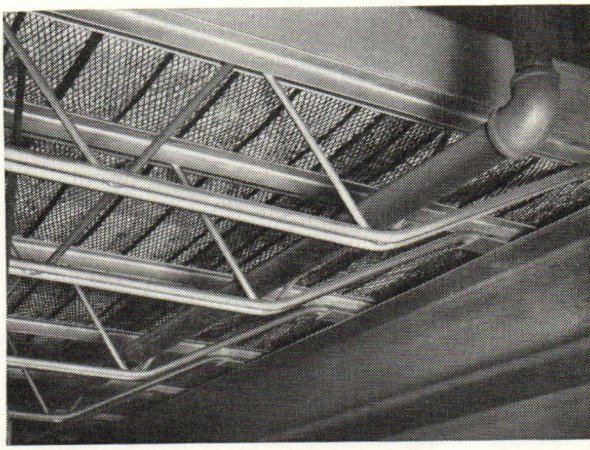
Economical — Ceco Open-Web Steel Joists are self-centering. The form work for the concrete slab—usually metal rib lath or steeltex—rests directly on the steel joists without other support from the underside.



Open-Web Steel Joists

trades can be on the job doing their special work such as installing steel windows, electric wiring, plumbing and heating. So, when speed gets the call, specify CECO OPEN-WEB STEEL JOISTS. They are fabricated to exact size in the factory, come to the job tagged, ready to install... provide low cost fire resistive buildings. Ceco assures you fast service from five plants: Birmingham, Chicago, Houston, New York and Wheeling, W. Va.

Conceals Conduits — Ceco Open-Web Steel Joists provide a ready means of concealing ducts, wiring and piping. Space is saved by direct attachment of ceilings to joists. Time and materials are saved, too.



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General Offices: 5601 West 26th Street, Chicago 50, Illinois

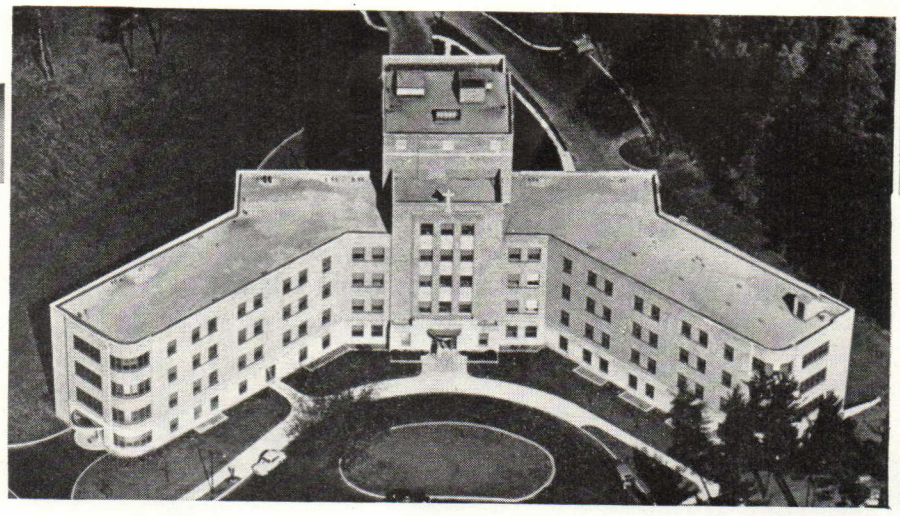
Offices, warehouses and fabricating plants in principal cities

makes the big difference

In number of products . . .

The AMERICAN-Standard

THE NEW DRESSLYN LAVATORY-DRESSING TABLE gives this bathroom extra glamour and utility. The Dresslyn is handsome and compact, with plenty of storage room. The genuine vitreous china lavatory has an extra deep bowl, protective spash rim and two integral soap dishes. The Dresslyn is available in two sizes and in a variety of appealing color combinations. The dressing table is available in two styles—closed front or with a kneehole on either left or right side. The Master Pembroke Bath and the Compact Water Closet are of permanently non-absorbent genuine vitreous china . . . so durable, so easy to keep sparkling clean.



COMPLETENESS OF THE LINE is indicated by the American-Standard Plumbing Fixtures supplied the St. Clare Hospital of Schenectady, N. Y. Autopsy Tables, Surgeons' Scrub-up Sinks and other such specialized fixtures by American-Standard were installed here. Comfortable heating was assured the hospital by the installation of Arco Radiators. In thousands of hospitals throughout the country, American-Standard products have proved to be efficient, long-lasting and economical to maintain.

in variety of types and styles

line is unsurpassed!

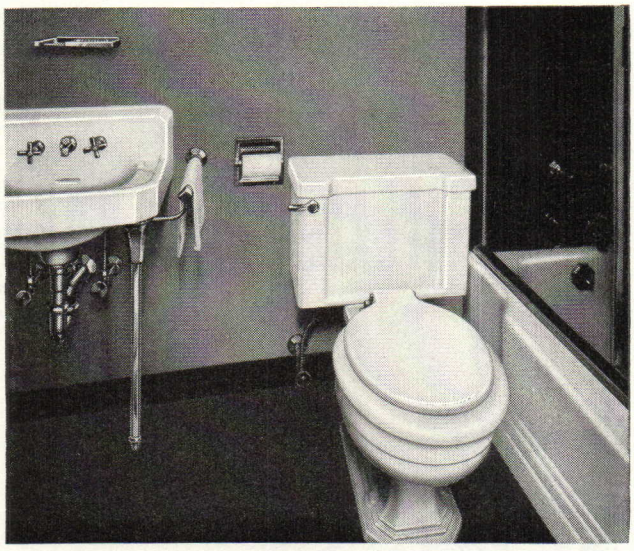
WHETHER you're designing houses, hospitals, hotels, schools or large industrial buildings, the *complete* American-Standard line offers the widest choice of styles, types, models and sizes of heating equipment and plumbing fixtures for your needs.

And American-Standard *quality* is second to none. The sound construction details of American-Standard products meet the most exacting requirements. Their good looks, efficient design, flawless performance and operating economy will win the admiration of your clients.

No line of heating equipment and plumbing fixtures is better known or better accepted than American-Standard. For this reason, when you specify American-Standard products in your plans, you are assuring yourself of satisfied clients. Ask your Heating and Plumbing Contractor for information about the complete American-Standard line. He'll gladly help you select the products best suited to your needs. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

LOOK FOR THIS 

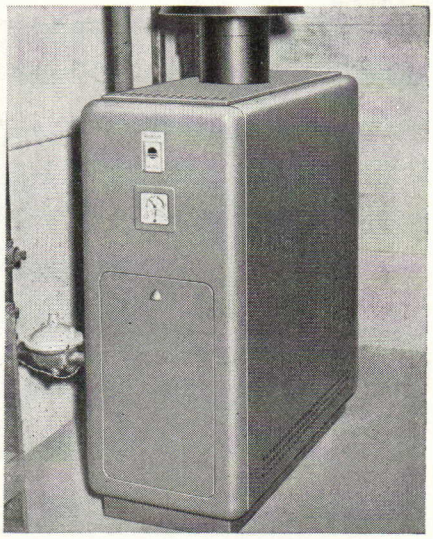
MARK OF MERIT



CONVENIENCE AND BEAUTY are combined in this bathroom of the Beverly-Carlton Hotel, Beverly Hills, California. The durable Master Pembroke Bath has low sides, wide bottom, for convenience and safety. Made of rigid cast iron with a thick coating of regular or acid-resisting enamel. The smart Marledge Lavatory has a deep, square bowl, splash back and non-tarnishing Chromard fittings. The genuine vitreous china Compact Water Closet features syphon vortex water action for thorough, quiet flushing.

JUST THE RIGHT HEIGHT . . . for students of all sizes. These handsome wall-supported Neo-Toric Drinking Fountains in the Rosedale School of Austin, Texas, are arranged so that even the smallest tots can easily reach them. They're made of permanently non-absorbent genuine vitreous china and feature angle stream bubbler with automatic volume regulator and metal guard that permits escape of water and prevents squirting.

A DEPENDABLE SUPPLY OF HOT WATER is furnished the Guest Ranch Motor Hotel of Cheyenne, Wyoming, by this Empire Gas Boiler. A good-looking boiler like this adds to the appearance of any building . . . the colorful jacket harmonizes with modern decorative schemes. And the Empire has all the features essential to perfect performance, including patented pin type cast iron sections, joined with gas-tight, metal-to-metal fit to assure maximum combustion efficiency.



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Serving home and industry

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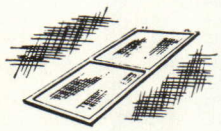
Here's a way to give your clients at little or no extra cost!

finest *All-Year* air conditioning

These simple economies can offset its cost—

Many of the customary features in a home no longer have functional value when *All-Year* Air Conditioning is included . . . such things as porches, fireplaces, screens, etc. So in your preliminary planning you leave them out. This way you'll generally save enough to make up the cost of the Servel system. And clients feel they're making a marvelous exchange. For while the things that are omitted provide comfort for only *portions* of the year, Servel provides them with ideal comfort *all year*.

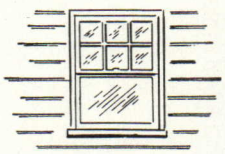


NO SCREENS

NO PORCH

NO ATTIC FAN

NO FIREPLACE



LOWER-COST WINDOW CONSTRUCTION

TOPS in new-home comforts today is *All-Year* Air Conditioning. Year round, the air is healthfully conditioned all through the house. Year round, the humidity is carefully controlled to eliminate stickiness in summertime and the drying-out tendencies of winter. Year round, the air is filtered clean—free of dust, dirt and pollen. Bracing in summer. Cosy in winter. The flick of a finger brings instant results. And by making the decision to include Servel *All-Year* Air Conditioning early in the planning stages, you can give your clients this ultimate in comfort at little or no extra cost.

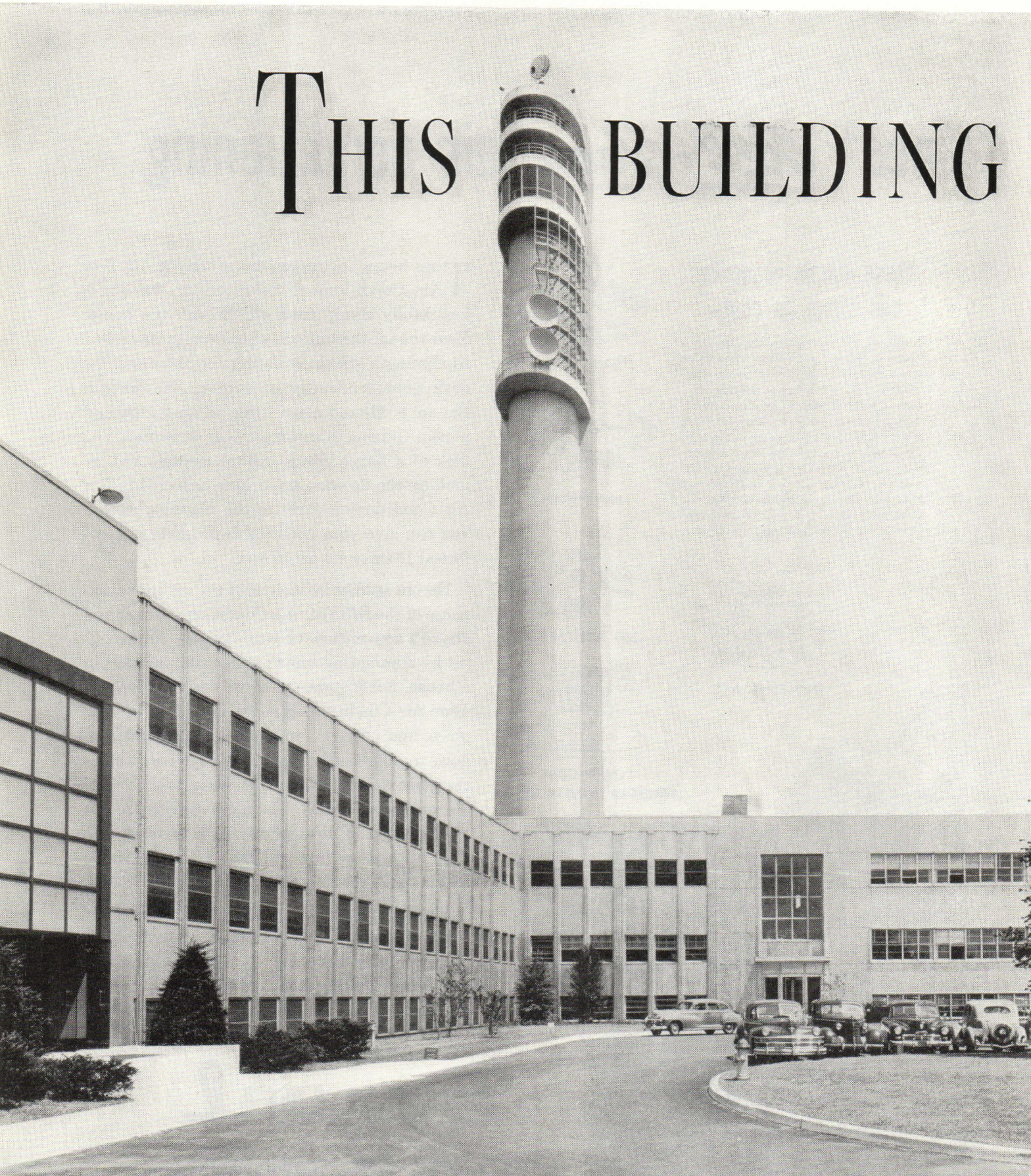
Recent studies indicate that the additional expense of the *All-Year* Air Conditioner—over and above a conventional heating plant—can be offset by eliminating some of the usual features in a house. For instance, a house designed for *All-Year* Air Conditioning needs no porch, no fireplace, and no attic fan. Outside doors and windows may be kept closed; in fact, in many cases the glass may be fixed which permits the use of a simple wood frame. Therefore screens are not needed. And in most parts of the country, the total of these savings will enable you to include Servel's *All-Year* system at little or *no extra cost.*

The Servel *All-Year* Air Conditioner can be easily adapted to *any* size, type, style or shape of home your client wants. Ask your local Gas Company for all the particulars or write to Servel, Inc., 4005 Morton Avenue, Evansville, Indiana.

Servel

All-Year AIR CONDITIONER

THIS BUILDING



Federal Telecommunications Laboratories, Inc., Nutley, N. J., American research and development unit of the International Telephone and Telegraph Corp. Architects and Engineers: Louis S. Weeks, Giffels & Vallet, L. Rossetti. General Contractors: George A. Fuller Co. Exterior walls, aluminum faced Q-Panels, fabricated and erected by H. H. Robertson Co.

POINTED THE WAY...

Since the first units of this communications laboratory were erected in 1945, performance has been watched closely. This was among the first of the parade of postwar, aluminum-clad buildings—industrial, commercial and residential. In each, aluminum was used because it contributed either to lower cost, speedier construction or more efficient operation.

Here aluminum-faced insulated wall panels have equaled or exceeded expectations; have required no maintenance whatsoever.

Alcoa engineers have contributed to the planning of every major aluminum-clad building erected in America. Our fund of aluminum knowledge, gained through sixty-two years of research and development, is available to all architects and builders.

For information on any application of aluminum, and for a forward look at aluminum's place in building's future, ask to see the book or film, "The Davenport Story". Call your near-by Alcoa Sales Office, or write ALUMINUM COMPANY OF AMERICA, 1892E Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA

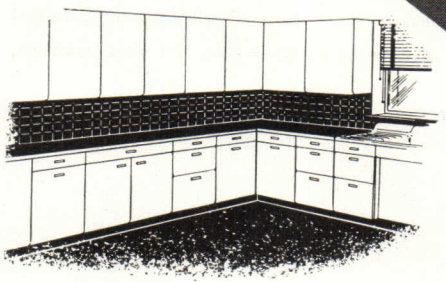
FIRST IN ALUMINUM

Addition of a wing required removal of panels at north end of one building. Microscopic examination of uncovered area revealed no evidence of air or moisture infiltration after three years.

Insulation factor of walls has equaled that of masonry of much greater thickness and cost. According to owners, greatest advantage is low maintenance. None required since erection.

CRANE

the preferred plumbing



The Crane *Sunnyday* Sink . . . porcelain enameled cast iron . . . in white and eight Crane colors. Single basin, double drainboard. 54″ or 60″. Also available, a complete line ranging from 36″ to 72″, all with Crane *Dial-ese* controls. Complete selection of matching wall and base cabinets. Consult your Crane Branch or Crane Wholesaler.

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MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

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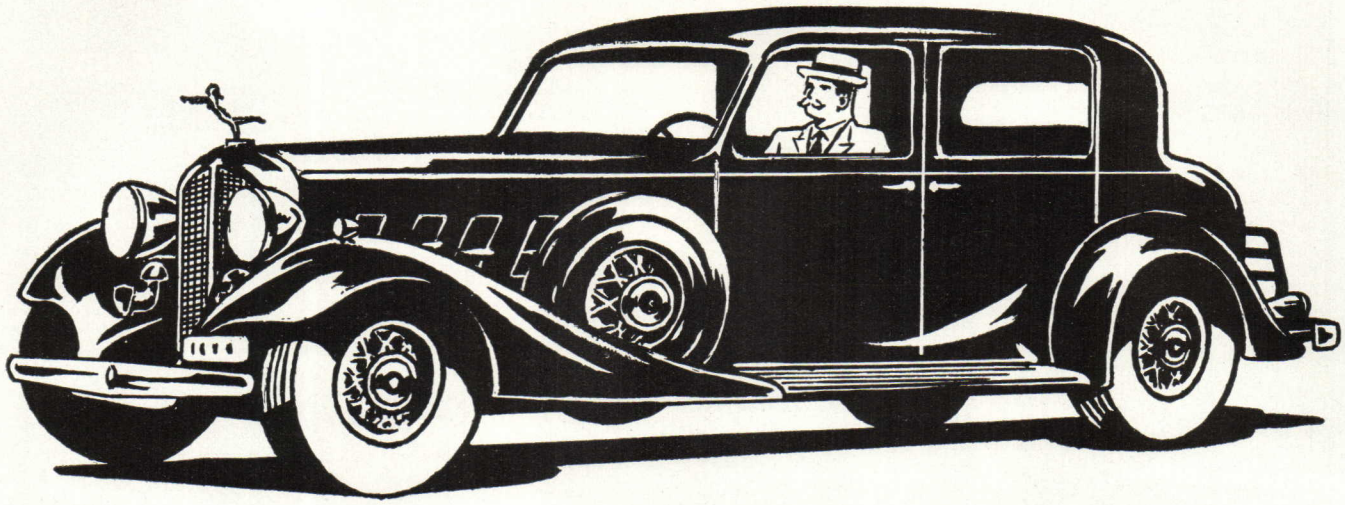
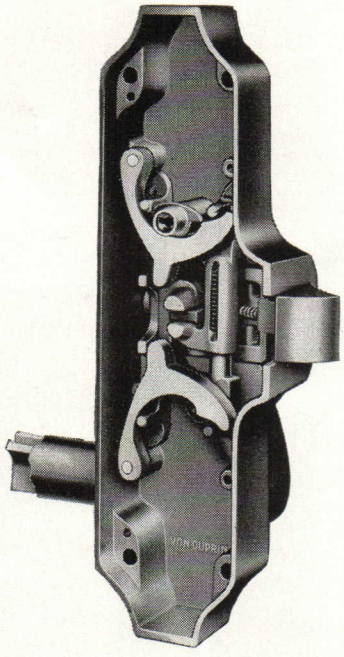
Walter Dorwin Teague, *Designer*



YOU *CAN* HOLD DOWN THE COST PER YEAR

About nine times out of ten the finest thing you can buy gives you the lowest cost per year over the period of its long life—an actual over-all saving instead of a premium for the satisfaction of having the finest.



Take drop-forged Von Duprin panic exit devices for example: the superior workmanship, the precision forging, the supremely safe, sure, quick exit they provide, are yours at lowest cost.

Their higher price is quickly balanced by their freedom from up-keep or repair expense.

It's no wonder that more and more people are insisting on Von Duprins.

VON DUPRIN DIVISION, VONNEGUT HARDWARE CO., INDIANAPOLIS 9, INDIANA

Von Duprin

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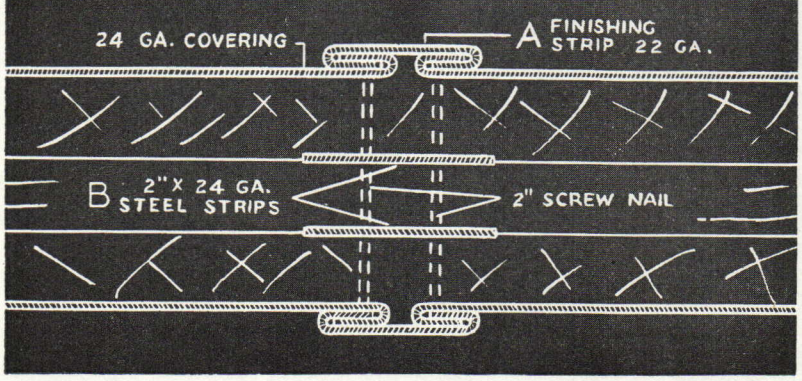

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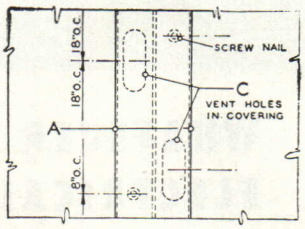

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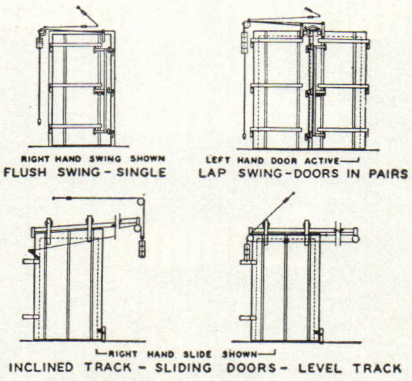

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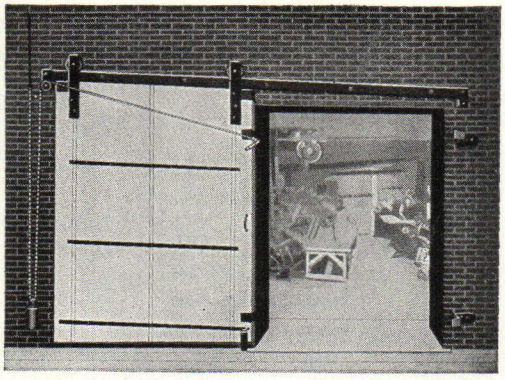

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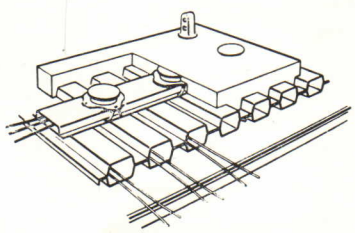

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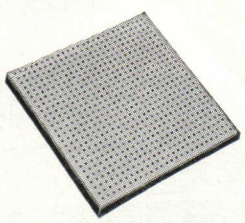

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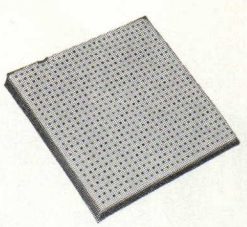

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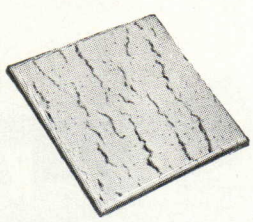

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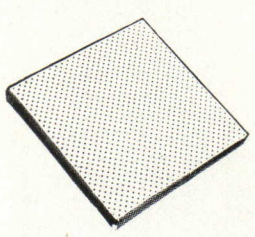

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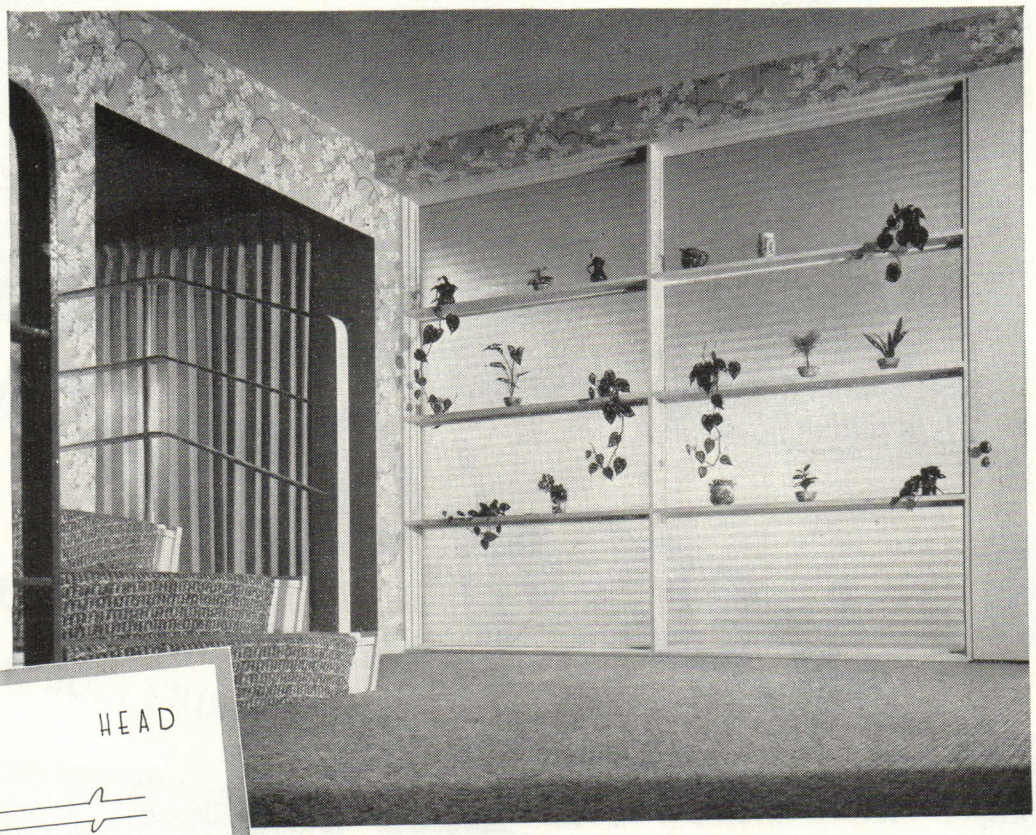
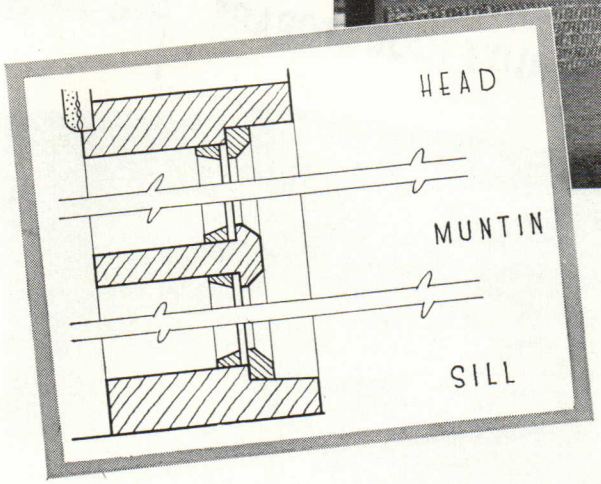


Blue Ridge *Satinol* Louvrex glass screens the porch, diffuses light over hall, builds-in distinctive decoration. Architects and Designers: James F. Eppenstein and Raymond Schwab, Chicago, Illinois.



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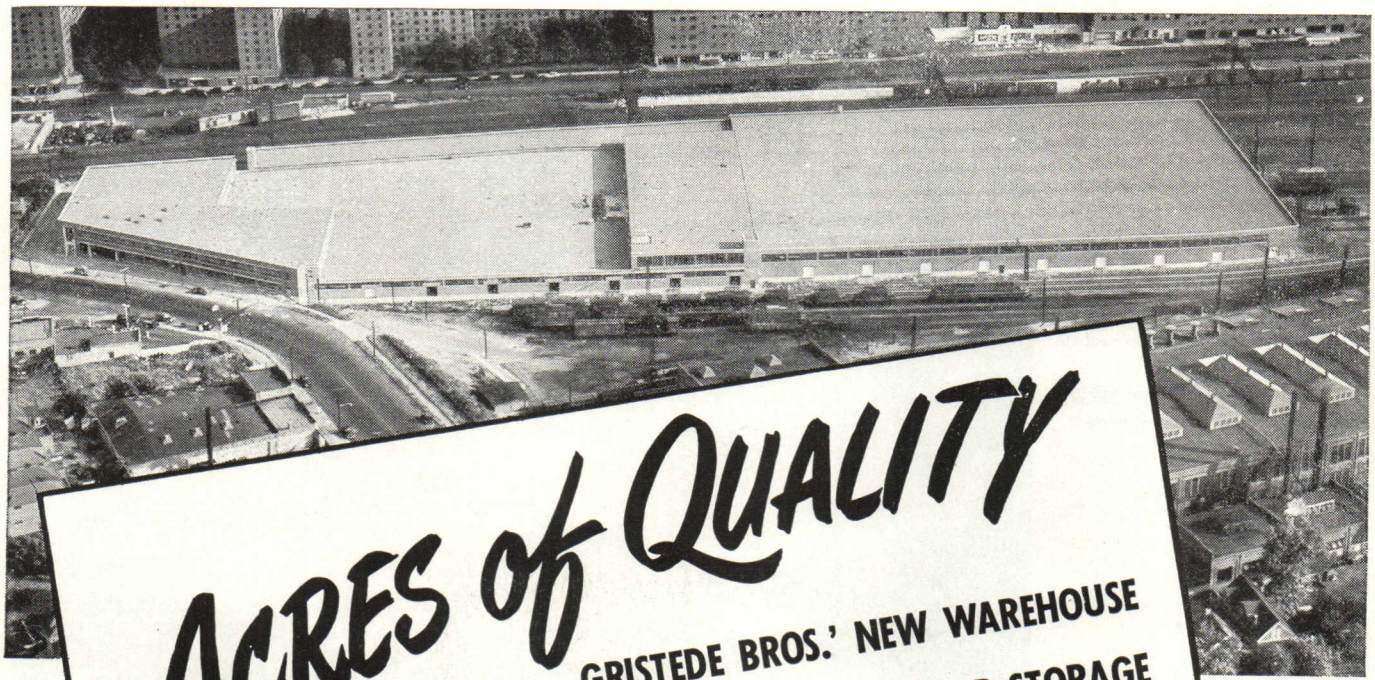

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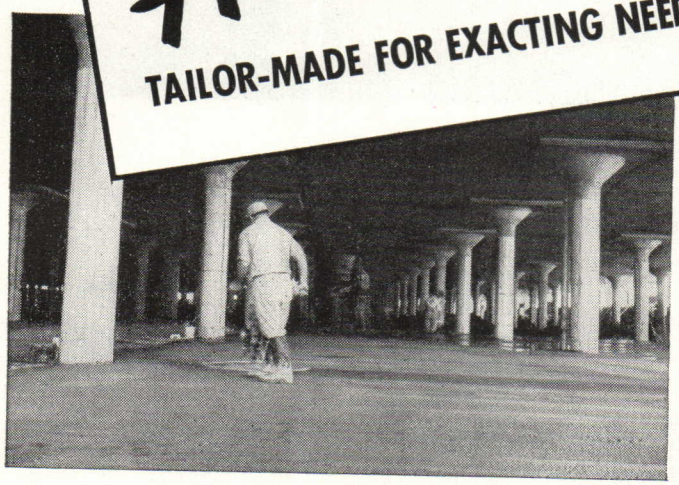

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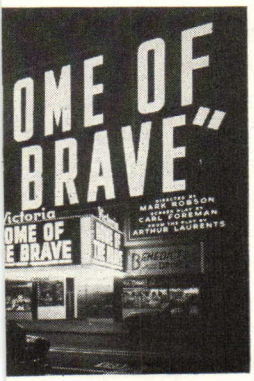


Theater: New York, N. Y.

EDWARD D. STONE, ARCHITECT; KARL J. HOLZINGER, JR. & ROY S. JOHNSON, ASSOCIATES
Ed. E. Ashley, Lighting Engineer
Dwight B. Kimball; Eric B. J. Roos, Associate, Air Conditioning
Fred N. Severud, Structural Engineer

Remodeling and extension of an outmoded legitimate theater to show long-run feature movies. The exterior and tunnel-like entrance were handled in bold scale to compete with neighboring Times Square attractions, although the design is considerably simpler and worked out with fewer materials. Inside, a shimmering, restrained auditorium has been created.

Photos: Lionel Freedman-Pictor

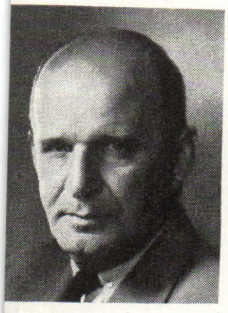
program: To modernize and enlarge the 713-seat capacity of a shoddy old theater.

site: Mid-block location, west side of Times Square.

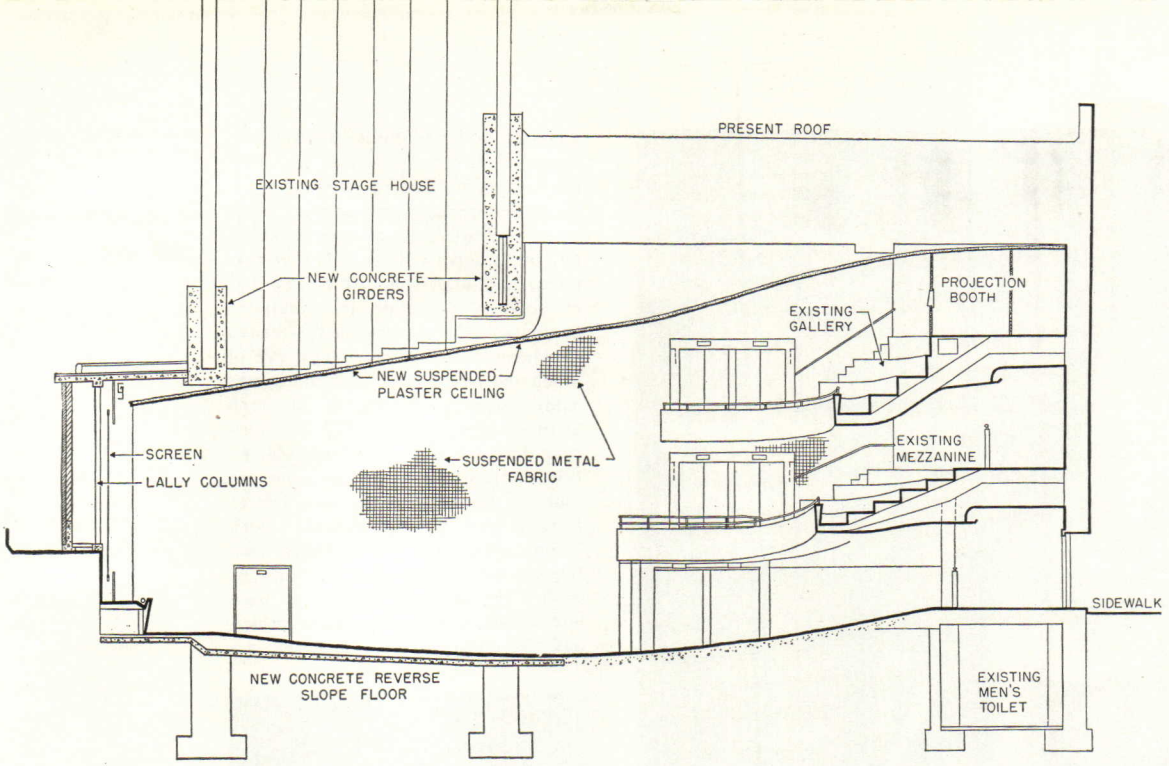
solution: Two major alterations were involved in the extension—removal of the old proscenium (replacing it with a plate girder), thus adding the stage area to the auditorium proper; extension of the new stage into an exit court no longer required for this purpose (see combined old and new plans). Total added seating—335. For renovation of the old walls and surfacing of the new, an ingenious aluminum-mesh curtain (a fabric formed of heart-shaped scrap-aluminum stampings from film-reel holders, threaded and clipped onto narrow, flexible metal tape and applied to wood blocking) was used as a floor-to-ceiling covering. Only foil to this satiny new surface (which, incidentally, effectively screens a multitude of mechanical outlets and unhappy excrescences of the old theater) are sculptures (by Gwen Lux) along side walls and in candelabra at rear of auditorium.

materials and methods: CONSTRUCTION: existing. *New insulation:* sound-absorbent plaster on front of balcony rail; carpeting on rear wall of auditorium. *New wall surface:* aluminum-mesh fabric described above. *Entrance and lobby doors:* tempered plate glass.

EQUIPMENT: *Heating and air conditioning:* existing convectors; chilled water system of conditioning; new compressor to supplement two existing ones; blowers, filters, controls. New seating; sound equipment.

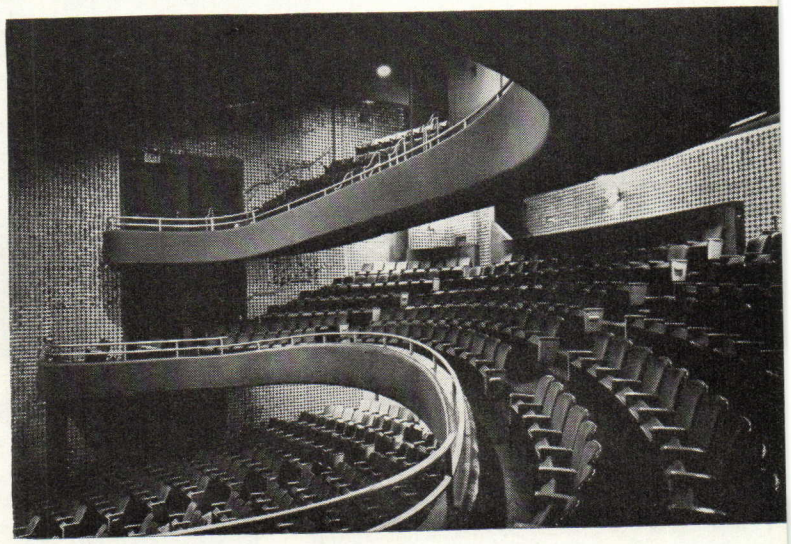


the architects: *Edward D. Stone:* U. of Ark.; Harvard U. and M.I.T. Schools of Architecture. Work with Coolidge, Shepley, Bulfinch & Abbott of Boston; Shultze & Weaver, and the Rockefeller Center Architects, in New York, before embarking on own distinguished practice. Professor of Architecture, Yale U. As Major in Headquarters of the Army Air Forces, in charge of preparing plans for AAF air fields contemplated for retention in post-war period.

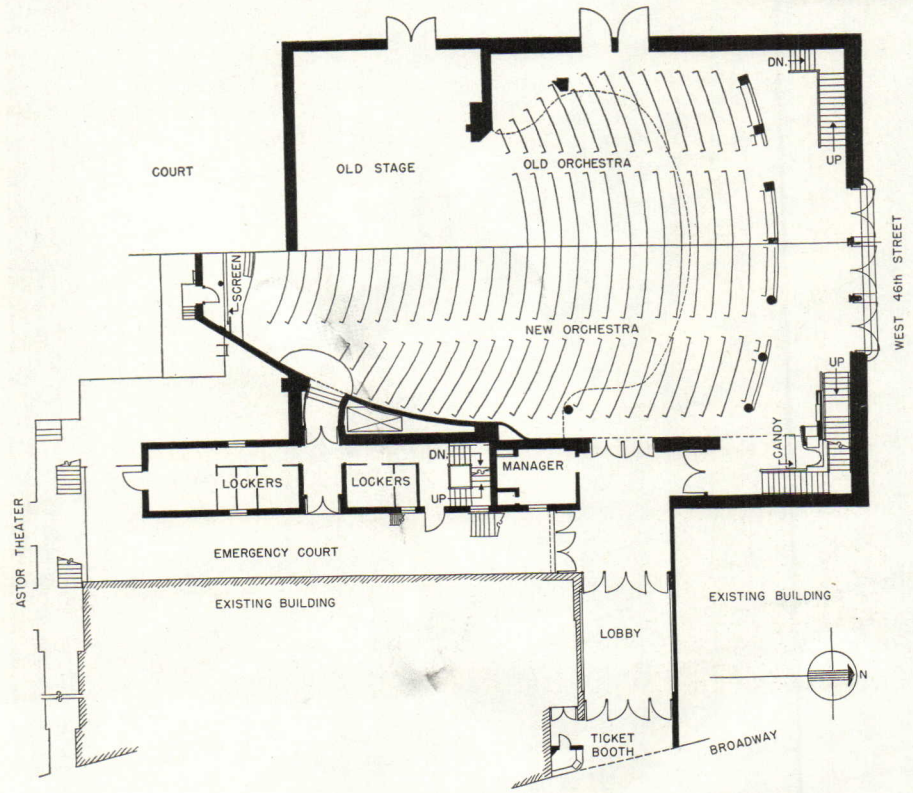


Section through Auditorium

Scale 0 20'



Relation of old to new is indicated in section (above) and plan (below). The new reverse-curve floor, for the new seating replacing the old stage area, allowed the screen to be raised, making better sight lines for the rest of the theater and comfortable viewing from front seats. The plan further shows some of the refining of side wall lines and column shapes. Another factor in the use of the metal mesh for wall surfacing was that the architects were able to use bare cinder blocks for new wall areas and ignore old grill openings and minor breaks.



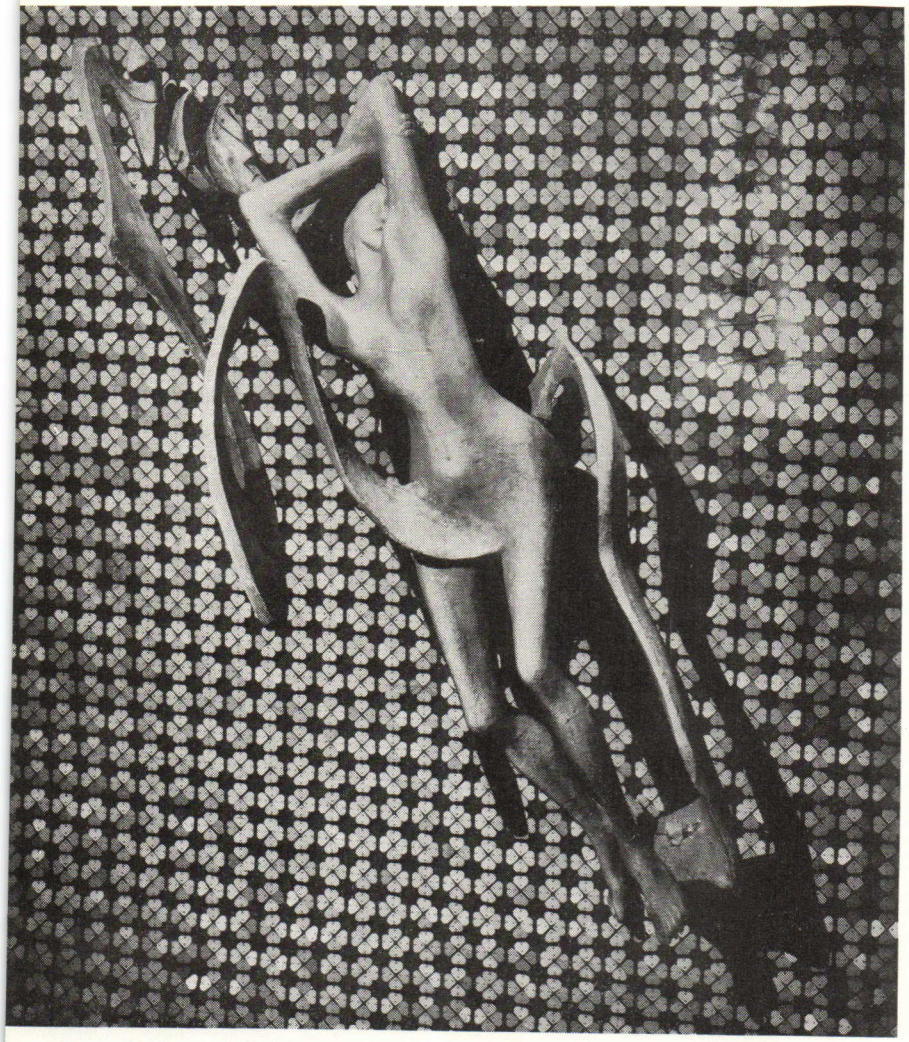
Floor Plan

Scale 0 20'

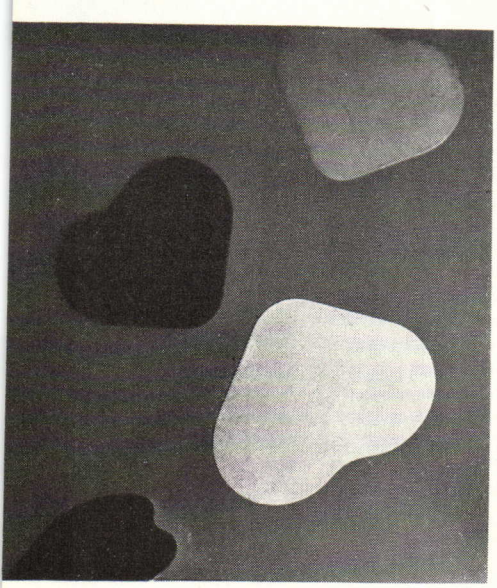
Across-page: view from gallery. The new ceiling slopes down in a graduated curve, immediately below the line of the old proscenium and so down to the screen (see section).

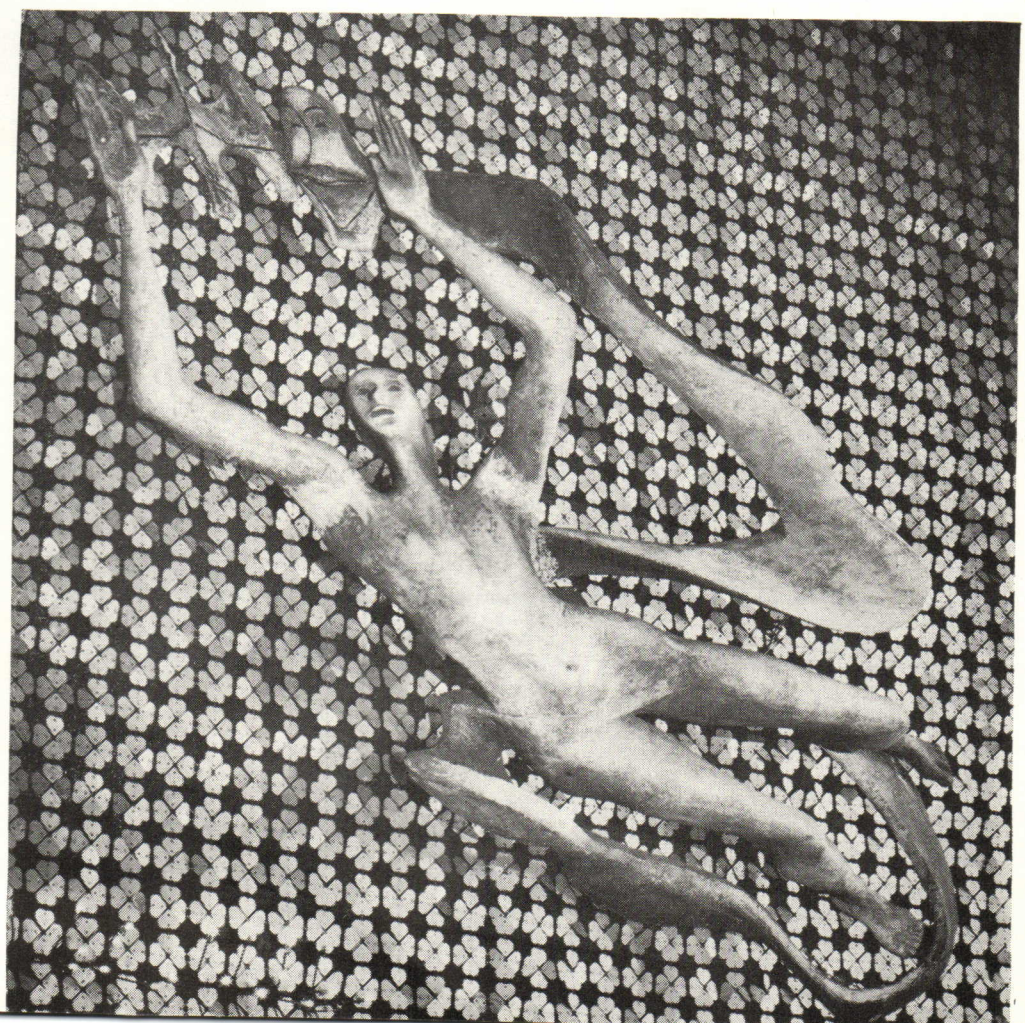
Above: balcony and gallery were little changed, other than having new seating, the new wall covering, and acoustical plaster surfacing of the railings. The satiny aluminum wall fabric picks up reflections from the screen; the architect comments "this tends to soften the usual effect of a rectangle of light surrounded by complete darkness. It even tends to bring the action into the theater—particularly in technicolor films."

THEATER: NEW YORK, N. Y.



The side wall sculptures by Gwen Lux symbolize Night (left) and Day (bottom of page). Smaller sculptures are used for candelabra (photo immediately below). Color scheme for entire interior is opera red (carpet; seat covering) and aluminum. At bottom left of page is a picture (H. Kaufman, photographer) of the heart-shaped aluminum film-reel stampings out of which the metal-mesh wall fabric was made. Outside dimensions of each heart are about 1⅝" x 2⅛". To fabricate the mesh, each heart was pierced twice horizontally across the center so that two fingers of metal were left to form a sort of slot through which flexible steel tape was threaded. The fingers were then stamped flat to anchor the pieces. These strips were laid across one another grid fashion and the intersections, grommeted.





THEATER: NEW YORK, N. Y.

p/a

round-robin critique:

"608" housing

ARCHITECTS-CRITICS (left to right): Haver; Hershey; Maston; Crain, Wilson and Morris.

Ralph Haver: *U. of Southern California (B. Arch.); work in both Los Angeles and Phoenix, Ariz., offices. Corps of Engineers. Registered in Arizona on separation from service.*

Don Hershey: *Cornell U. (B. Arch.). Work in offices in Dayton, Ohio and Rochester, N. Y. Started own practice, 1936.*

Raymond Van Alstyne *(associated with Hershey on the Rochester, N. Y., project; photo not available): Teachers College, Columbia U.; Mechanics Institute, Rochester. Associated with several New York firms; own practice in New York until moving to Rochester in 1932.*

Carl Louis Maston: *U. of Southern California (B. Arch.). Work in Los Angeles offices; with Marine Corps during the war, opening own office immediately thereafter.*

Bluford W. Crain, Jr.: *U. of Texas (B. Arch.); Harvard U. (M. Arch.). Work in Houston offices; U. S. Navy, Yard and Docks; C. B. Battalion in Pacific. Joined Wilson & Morris to form present firm, 1946.*

F. Talbott Wilson: *Vanderbilt U.; Rice Institute (B.A.; B.S. Arch.). Work in Houston and New York offices. Private practice and later the firm of Wilson & Morris established, 1938. With Field Artillery during war; O. C. S. graduate. Office reopened, with Crain joining firm, 1946.*

Seth Irwin Morris, Jr.: *Rice Institute (B. A.). Draftsman in Houston before firm of Wilson & Morris was formed. With U. S. Navy during war; Legion of Merit. Since war, the firm has handled about $10,000,000 of design work.*

In the following critique Hershey is the spokesman for the job on which he was associated with Van Alstyne. Wilson speaks for the firm of Wilson, Morris & Crain.

P/A continues on the following pages a form of critique which was instituted in the November 1949 issue. Here we present four apartment buildings critically analyzed by the architects themselves. To each of the four architectural offices we sent photographs, drawings, and descriptive information on the apartments *designed by the other three.* We asked for critical analysis; then we sent the comment to the architects for their rebuttal. Our own synthesis of the back-and-forth discussion results in the "critique" text on the pages that follow.

All of these apartments were designed under Section 608 of FHA's Title VI. As this issue goes to press, the fate of 608 is still in doubt although the Senate has granted it an additional $400 million, in its version of the new housing bill. But whether it continues for a longer time or dies, 608 has resulted in many hundreds of apartments over the country, which have been criticized as a stultifying influence on design, as a means for the builder to profit at public expense, as a producer of future slums.

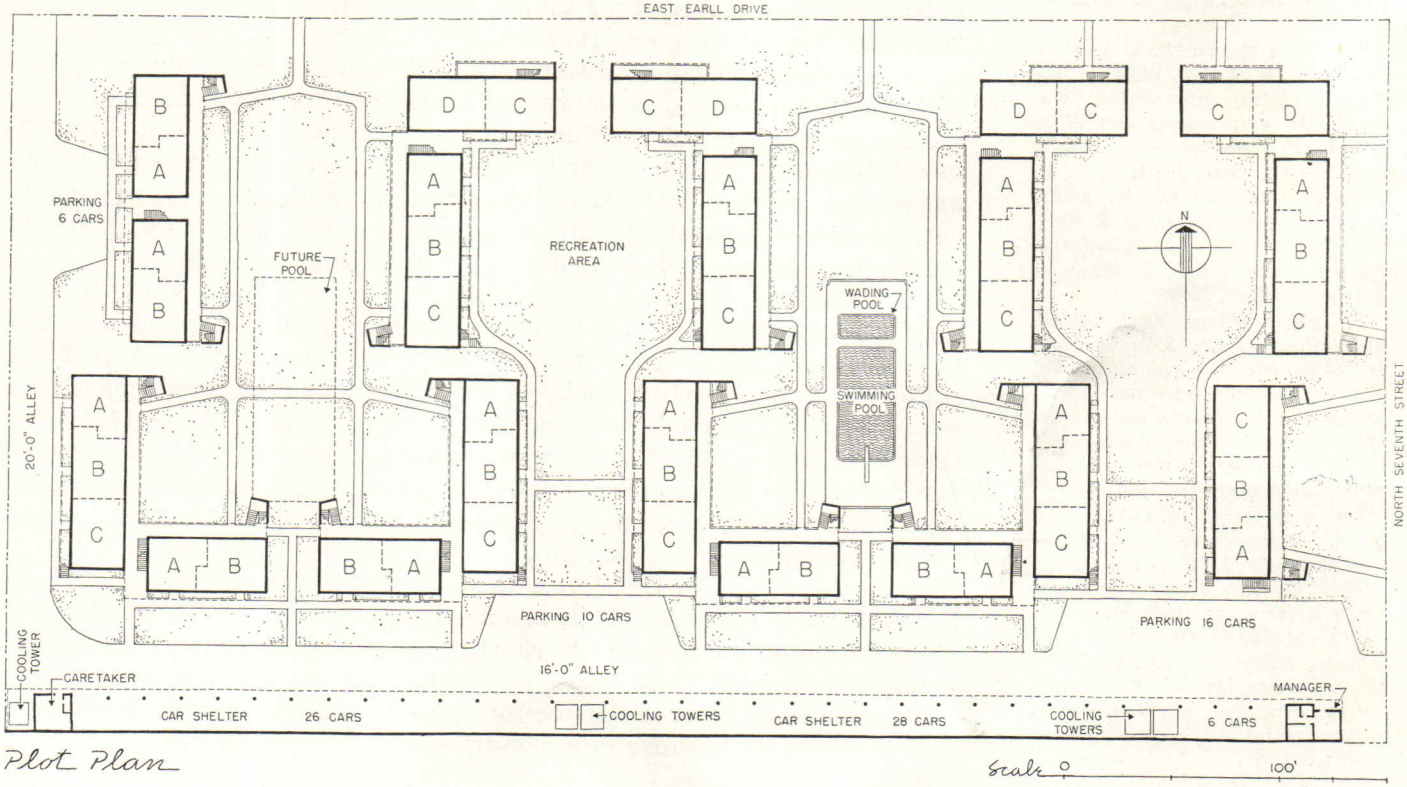
The four projects shown here were chosen for critical study because they seemed to be among the best that thoughtful architects had been able to produce within the planning and design limitations imposed by FHA. All of the architect-critics spoke of certain elements that might have been improved if FHA regulations had not prevented. Yet we know that all of these architects argued for and won some points that might have been lost (or not raised) by less conscientious practitioners. And the comment recurred that certain minimum requirements had noticeably raised the standards of speculatively built houses.

It is the feeling of the **P/A** editors that these are well-designed, comfortable apartments despite the admitted compromises. No architect works without limitations and the work that he accomplishes must be judged within the framework of those limitations. We ask our readers to see if their opinions of the merit of the four groups of buildings that follow concur with those of the four designer-critics.

Country Club Apartments: Phoenix, Arizona

RALPH HAVER, ARCHITECT

Above: swimming pool (by owner) courtyard. Across page: looking down the five rows of apartments. Access is by means of walkways for ground-floor apartments; by means of balconies (both front and rear) for upstairs units. Thus, all apartments have cross-ventilation. These balconies also provide desirable shade.
Photos: Julius Shulman, except as noted



Plot Plan

Scale 0 100'

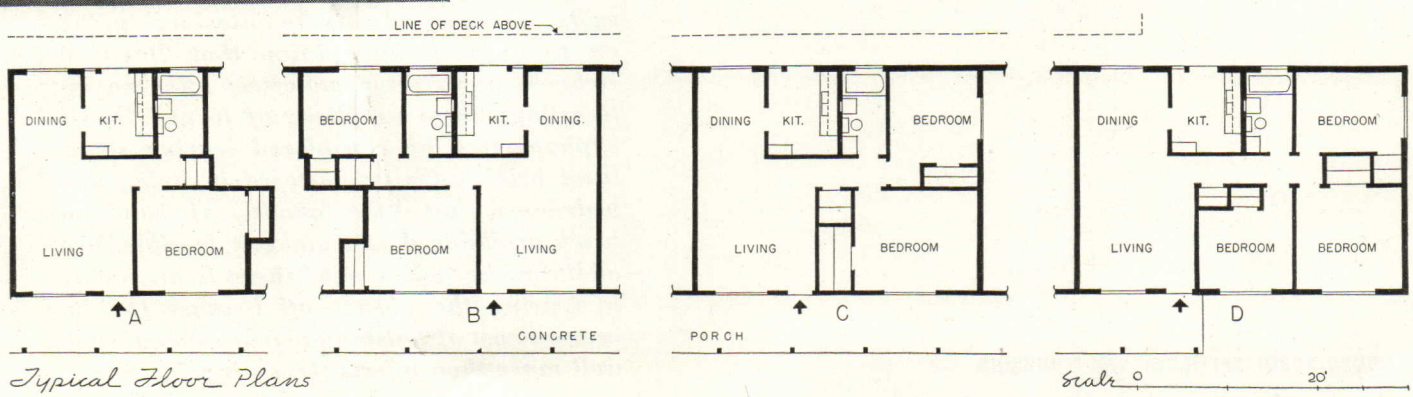
program: A project, to be constructed by an owner-contractor under Section 608. Approximately 100 dwelling units desired. At time project was planned, FHA could retain part ownership of mortgages on jobs costing in excess of $200,000; hence, owner specified that the entire job be broken down into independent increments, no one of which would exceed this amount, thus retaining full ownership.

site: Five-acre plot (less street dedications), three miles from downtown Phoenix; convenient to buses, high school and country club.

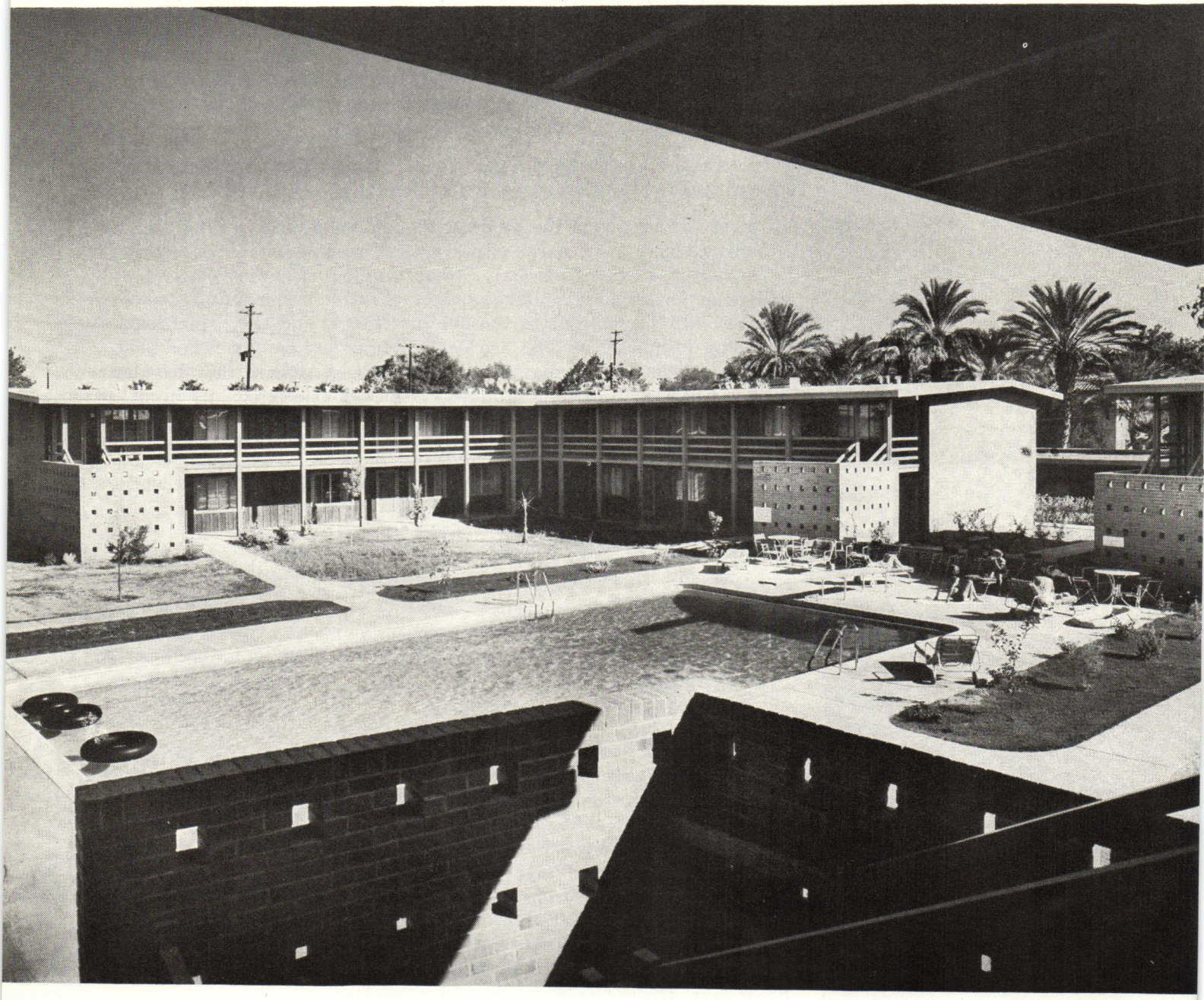
solution: To meet the program, the project, though apparently a single unit, actually consists of five (at either side of north-south lines running down centers of court spaces). Services (such as power, gas, water, telephone, heating, and cooling) originate in the basement of the rear (south) building of each of the five increments and reach the apartments by a tunnel. Here also are located the tenant laundries and bulk-storage cubicles. Four apartment-unit types (see plans and plot-plan key) constitute all of the buildings. Ninety-four apartments in all—30 one-bedroom; 56 two-bedroom, and 8 with three-bedrooms.

materials and methods: CONSTRUCTION: *Foundation:* concrete. *Walls:* 8″ brick, plaster finished inside. *Floors:* concrete slab (first floor); wood joists (second). *Surfaces:* troweled concrete or hardwood. *Roof:* wood frame; built-up asbestos roofing. *Insulation:* wood-type batts. *Partitions:* wood stud; plaster. *Fenestration:* steel casements; double strength "B" glass. EQUIPMENT: *Heating and air conditioning:* hot-water circulating systems; gas-fired steam boilers. Heating and cooling units in each apartment; fan and coil through ducts. Five central-station systems, each with two 25 hp Freon compressors, water chillers, induced draft towers. Automatic controls.

Basic plans and accommodation to site were considered "highly satisfactory." While admiring the exterior-balcony circulation Maston questioned if this constituted "an encroachment on privacy." Hershey felt that the brick stairway enclosures would cut out light and ventilation from adjacent apartments. Haver admits that they do reduce the amount of light somewhat, but urges consideration of the fact that they appear "less hazardous than free-standing stairs with rails only." Wilson comments on their "fine architectural effect." As for privacy, Haver reports that he has talked with the manager and a few tenants and "much to my surprise, they didn't seem aware that traffic might be objectionable."



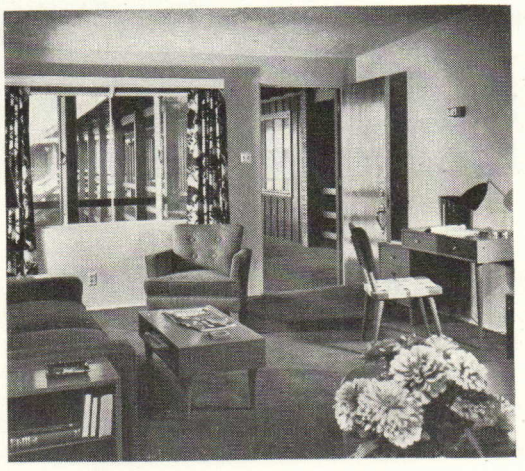
Typical Floor Plans

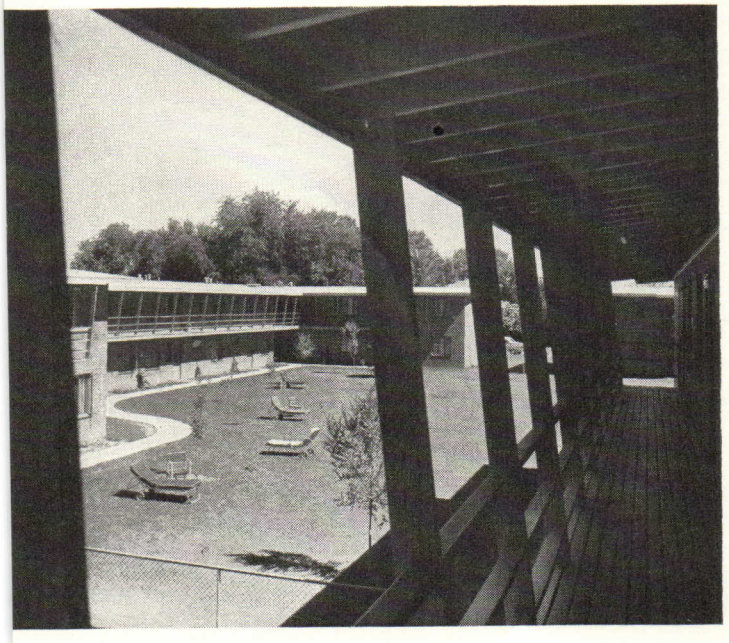


View from an upstairs balcony, looking down into the swimming-pool court. The owner contemplates constructing a second pool in the westernmost courtyard. Notice the free-standing brick enclosures around stairways—about which there was much discussion.

Maston asks if "any of the structural brick walls are exposed on the interior," going on to express the opinion that "textural richness of exterior materials offer an interesting foil to simplicity of form." Haver explains that he considered leaving structural brick walls unplastered in living and bedrooms, but "the quality of common brick available didn't make it feasible." In addition, he points out "there is no saving in leaving the plaster off because the increased cost of finishing two faces on a brick wall more than offsets the saving."

Wilson found the parking areas rather too close to the adjacent apartments and questioned whether lights of cars wouldn't "illuminate the lower apartments." Haver explains that the original plot plan "had car parking areas in rear courts between buildings. The owner later decided to add carports and purchased an additional 20 feet on the south, which provides space for most of the cars. The parking areas opposite from the carport are used primarily by visitors." Enthusiastic summary comments included (Hershey): "The unprotected wading and swimming pool serves as a beacon to a new faith in free and open living without restraint," and (Wilson): "Outstanding esthetically—and probably economically."





Top: along the south boundary of the property is a car shelter accommodating 60 automobiles.

Immediately above: living room of an upstairs apartment.

At left: back doors, like front doors, open onto both balconies and walkways.

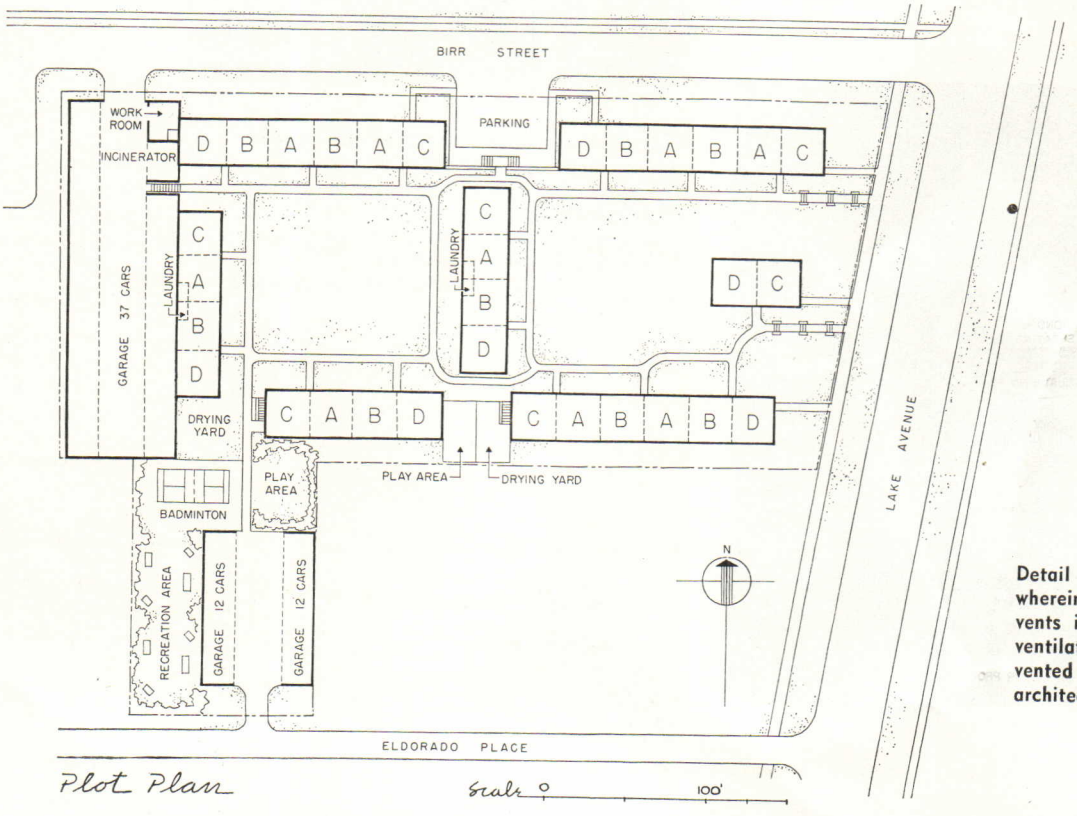
Photo, left: Stuart A. Weiner

Above: view along eastern end of property. *Photo: Ken Burke*

Across-page: looking back into site with one of the eight-unit blocks (of which we show detailed plan) at rear. *Photo: Byron Morgan*

Hale Manor: Rochester, New York

R. E. VAN ALSTYNE AND DON HERSHEY, ARCHITECTS



Detail across-page shows the roof schem wherein a continuous, screened ventilation stri vents into a cross-furred space, thence to ventilator in the middle of the roof. "This i vented by gravity and is most efficient," th architects tell us.

program: A 608 project of one- and two-bedroom apartments for an owner-builder (Emil Muller), that could be built quickly at low cost, maintained with minimum expenditure, and take advantage of the existing site (an abandoned estate with handsome trees) without major changes. Allowed $1,800 per room, plus extra for garages, services, and landscaping. Special requirements: standard materials, locally available, to be used; project to be completed within one year; maximum land coverage—35 percent of the site.

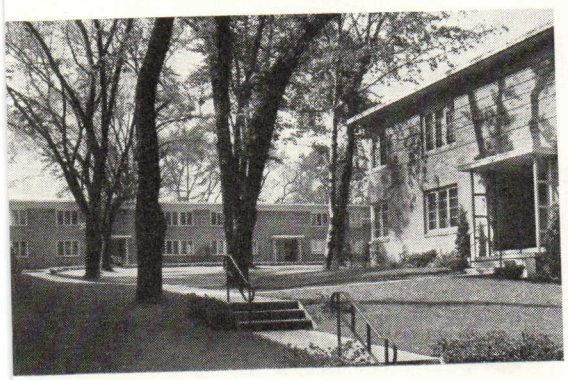
site: Two-and-a-half acre, corner lot approximately a mile from downtown Rochester. From east to west, land slopes up about 12 feet in the first 200 feet, thence flattening out to the western boundary.

solution: Four apartment-unit types, two-bedroom units interlocking (around stair halls) with one-bedroom units, make up the group. Shown is the plan of the two blocks that are aligned on a north-south axis, but it includes all four plan variants, and the key on the plot plan indicates how these are organized in other buildings. Light, air, openness of site, and a pleasing outlook were given precedence over rigorous insistence that all main living rooms face south. Basements contain storage rooms, laundries, and utility rooms.

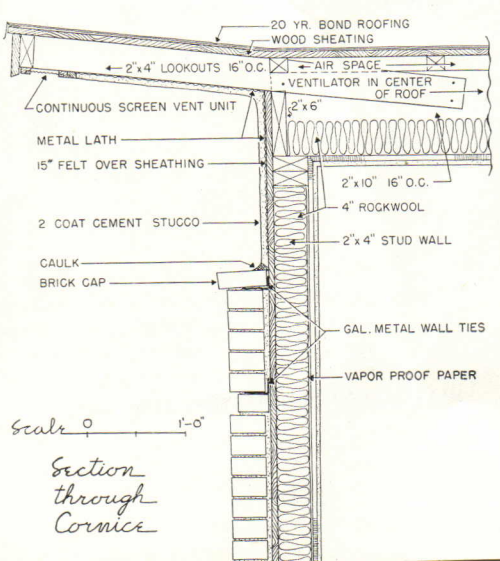
The wish to enter all apartments from an inside vestibule conflicted with a city code requirement that prevented this unless a fire tower were built and carried three feet above the main roof; the compromise is a recessed outside entrance which has the disadvantage that this means going outside to reach basements; however, all basements are connected by tunnel, which eventually connects with garage area.

materials and methods: CONSTRUCTION: Concrete foundations. *Frame:* wood. *Walls:* brick veneer on exterior; plaster, inside. *Floors:* pre-finished oak flooring; tile (bathrooms), and rubber tile (kitchens). *Roof:* built-up roofing over frame. *Insulation:* lathing system and 4″ wool batts in wall. *Partitions:* wood frame, plastered. *Fenestration:* prefabricated, steel-lined casements; wood trim; storm sash, weather stripping and roll-up screens attached.

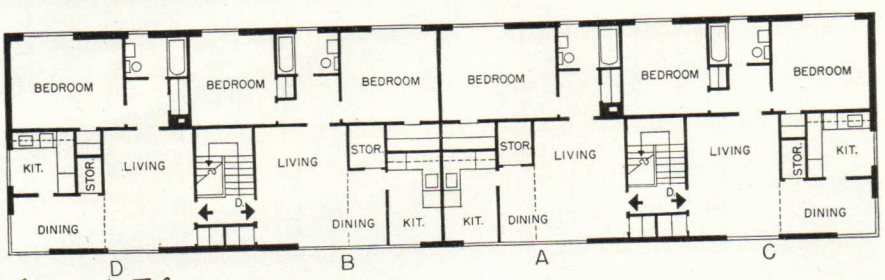
EQUIPMENT: *Heating:* individual, gas, hot-air units located in basements; automatic controls.



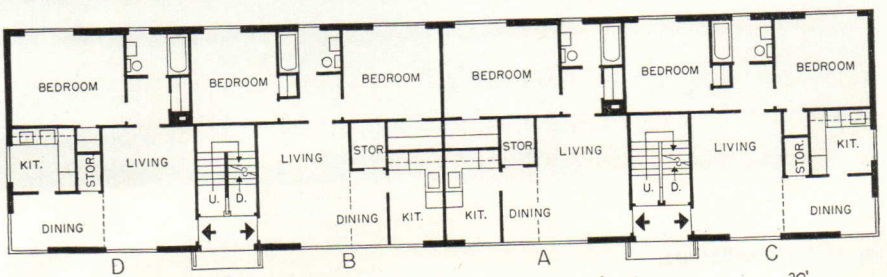
Plan details questioned included the bathroom door visible from the living room (Haver) and whether strip closets might not have been better than the big "walk-in" (Wilson). To which the architects reply: "We felt the same way about the bathroom door, although it is a barrier. However, the hall acts as a buffer, and careful placement of the arch opening helped. . . . In general, I favor strip closets but still find them more costly to build." Wilson studied the roof-venting detail and commented: "The roof system is admirable."



Section through Cornice



Second Floor



First Floor

Left: the inner court. To a critic's (Maston's) comment that "provision of generous amenities" seemed less well handled than other factors, such as the "goal of efficient and compact rental space," the architects remark: "In this type of project, generous amenities of living are an exception rather than the rule. The beautiful park-like site seemed to warrant an austere design." *Photo: Ken Burke*

Below: typical recessed entrance, which Wilson finds "pleasanter in appearance than the conventional apartment hall, both inside and out." *Photo: Byron Morgan*

Two of the critics felt that a less formal plot plan might have been a preferable accommodation to the beautiful site, but Hershey tells us that they tried several only to find that the more ordered scheme seemed best from the point of view of maintaining an open park-like appearance: "A tricky layout would have been in direct opposition and made the buildings the focal point." Haver asks: "Wouldn't a central heating system be less costly to operate and maintain than the individual unit furnaces?" The architect's reply: "No. We have figures."

Left: the architects state that "the design and placement of the garage became a unique part of the scheme. It was treated as a motor court, with the appearance of a garden wall from the streets adjoining. All garage doors were eliminated in order to cut down maintenance, at the same time providing maximum amount of parking in a minimum space." Maston applauds: "The car parking is handled very adroitly." *Photo: Byron Morgan*

HALE MANOR: ROCHESTER, NEW YORK

San Cente Apartments: Santa Monica, California

CARL LOUIS MASTON, ARCHITECT

Above: general view of project (actually a pair of row houses), across San Vincente Boulevard.

Right: detail of entrance front of the eastern block.

Maston comments: "I feel that the practical requirements of FHA as regards service facilities, storage requirements, land usage, and court size, while unavoidably arbitrary, have been of inestimable value to this area in raising the standards of apartments built by operative builders."

Photos: Julius Shulman

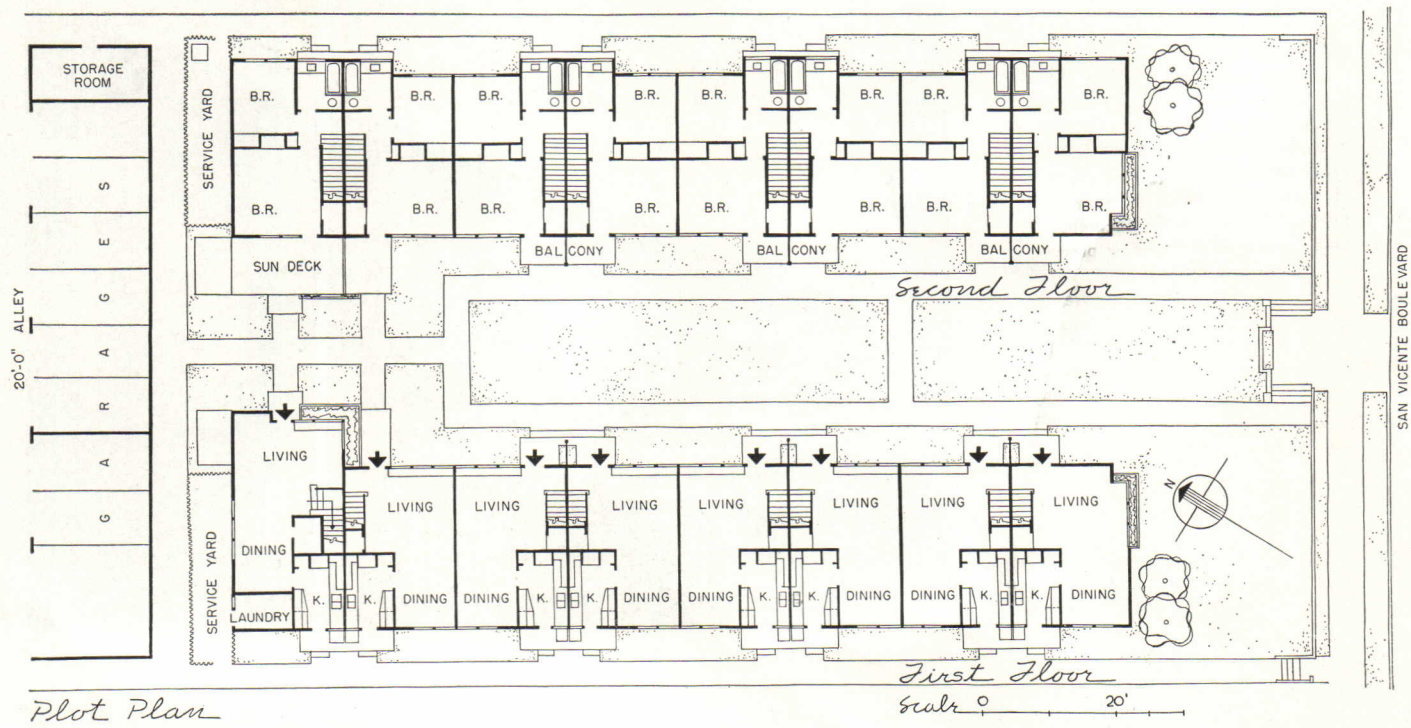
program: To provide the maximum of income-producing space compatible with FHA land-usage requirements (45 units per acre)—in this case, 16 dwellings. Financing, insured under Section 608, allowing a maximum of $8,100 per unit.

site: Level lot on a main thoroughfare, two blocks from ocean, but with no view.

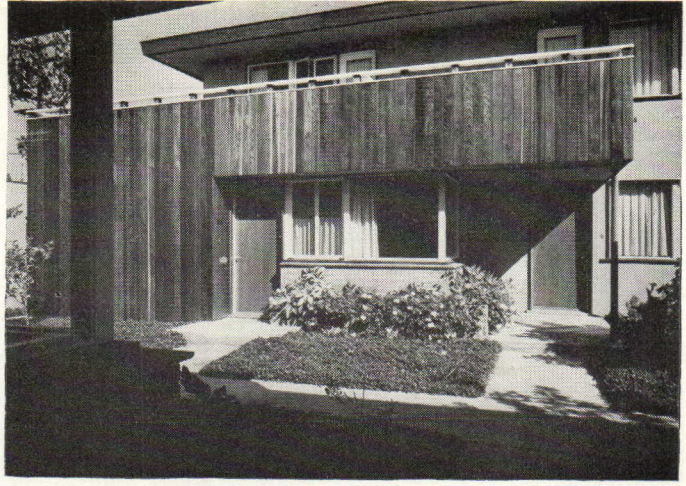
solution: Limiting factors, including FHA requirements, prevented anything exceptionally unorthodox. So, the architect tells us, "it seemed more feasible to avoid experimentation in favor of refining an accepted basic type of apartment. Use of the two-bedroom units was determined by the owner who felt (and was subsequently proved right) that "they yielded more rent per dollar of construction." Straightforward alignment of a pair of apartment blocks at either side of site; storage room and carports at rear of site, reached from a public alley.

materials and methods: CONSTRUCTION: Reinforced concrete foundations. *Frame:* standard wood-stud platform framing. *Floors:* 4″ concrete slab (first floor); 2″ x 10″ wood joists (second floor). Oak parquet finish over concrete slab in living and dining spaces; asphalt tile in kitchens. Oak flooring in bedrooms. *Walls:* exterior finish—cement plaster; interior—smooth hardwall plaster. *Roof:* dead level wood joists, solid sheathing, built-up roofing, topped with crushed white dolomite. *Insulation:* insulating plaster clips at first floor ceilings, and mineral wool blanket between staggered studs at party walls; 4″ wool batts between roof joists. *Partitions:* wood stud, plastered both sides. *Fenestration:* steel, residential-type casements, doublestrength "B" glass. *Doors:* both hollow- and solid-core slab types.

EQUIPMENT: *Heating:* electric wall heaters with fan. *Wiring:* flexible steel conduit. *Lock sets:* brass. *Kitchen equipment:* electric range and refrigerator. *Laundry:* electric automatic washers.



Plot Plan

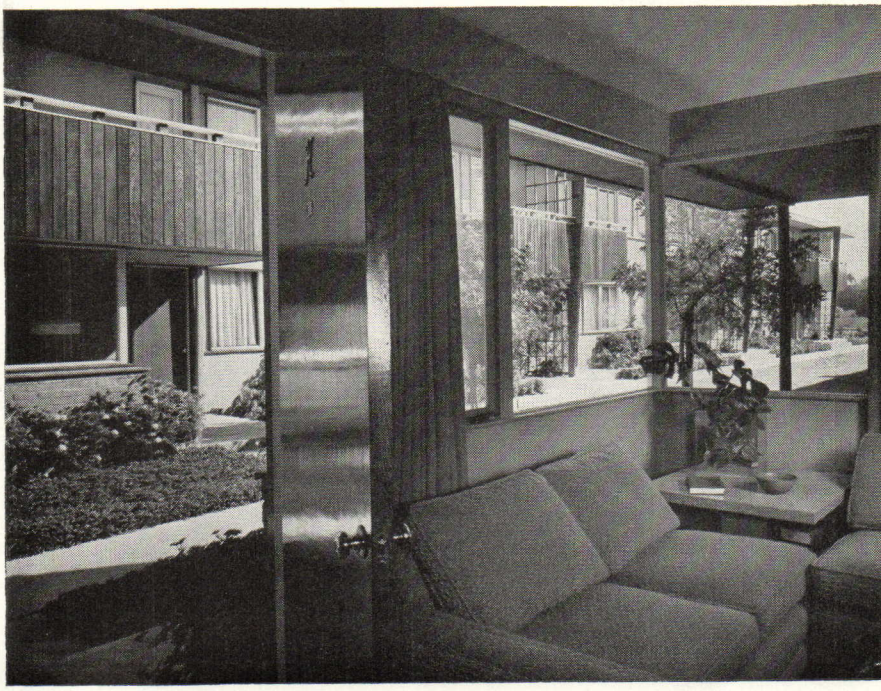


Right: view across main court to one of the larger, rear apartments.

Below: row of back doors. Upstairs bathrooms are cantilevered to gain space and provide shelter at doorways—"an especially good gimmick," in the estimation of Wilson.

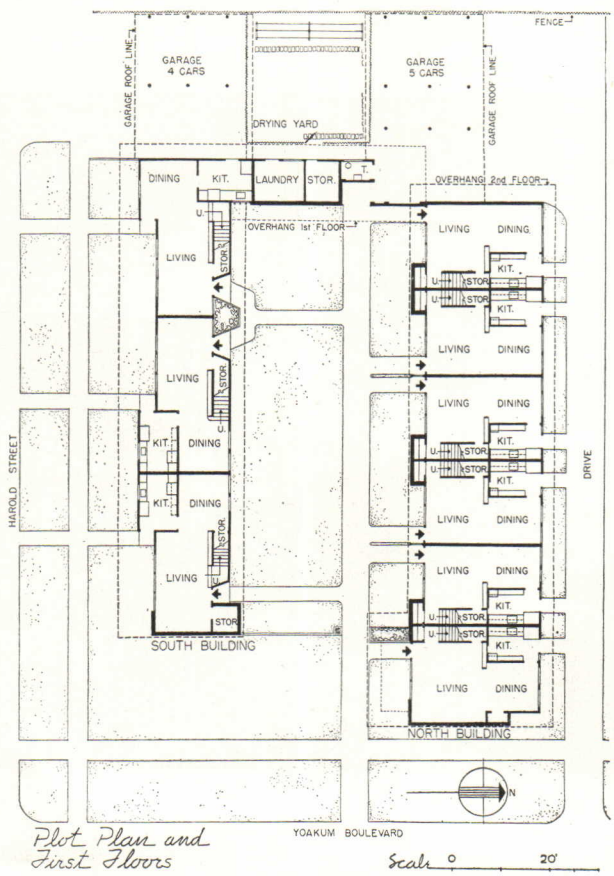
"Highly commendable for its simplicity, livability and apparent economy"—Haver. "Good straightforward, common-sense planning that makes the most of the limited site"—Hershey. "Having solved similar problems with the identical* parti, *I cannot but admit that it's a good scheme, and done here with refinements that give it particular distinction."—Wilson. Questioned, though, were "balconies too small for use" (Haver) and the lack of "a pedestrian entrance into the garage from the front court, which would have released the passages beside the service yards for storage" (Hershey). Maston agrees that the balconies have proved rather ineffectual—"an error of judgment on my part, as I balk at using a phony medium of expression." He also says that the "suggestions offered as to more effective treatment of the garage and service area are well founded."

Right: living room of one of the rear apartments, looking down the main courtyard. General reaction to the group was enthusiastic: "An excellent job, with what the architect calls an orthodox plan . . . I am impressed with the sympathetic and understanding approach to details necessary to good living conditions, such as protection over both front and rear entrances, including lighting; careful door and window placement; bath and kitchen arrangements; second-floor closets, etc." —Hershey. Haver was a bit critical of the tapered columns "supposedly supporting the balconies," but found the project generally a very well-integrated piece of work. Wilson comments: "This one evokes the uncommon sentiment of wishing I'd done it myself."

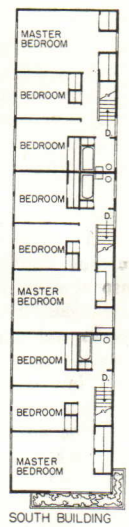


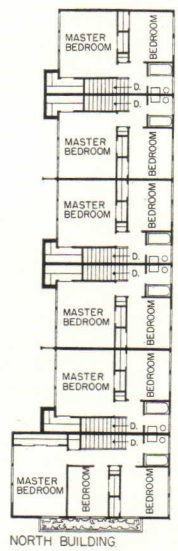
3416 Yoakum Boulevard: Houston, Texas

WILSON, MORRIS & CRAIN, ARCHITECTS



Plot Plan and First Floors





Second Floors

Scale 0 20'

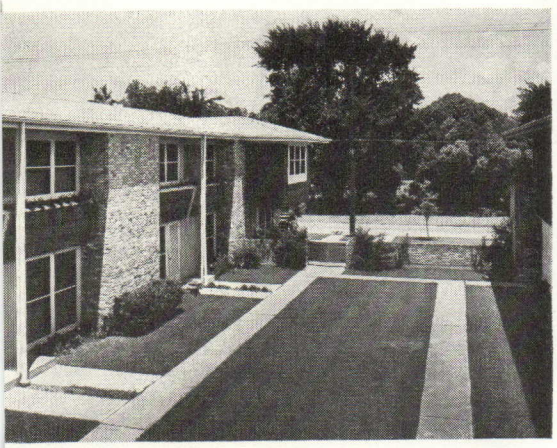
program: Describing the client's needs, Wilson points out that "these included our own, as all three members of the firm, and one employe, were members of the organizing corporation. This is a sort of co-operative apartment, all participants being veterans unable to locate any to rent . . . We obtained the first 608 commitment issued by FHA in Houston since the war." The nine original tenants consisted of four architects, two lawyers, two decorators, and a stock-and-bond man.

site: Northwest corner of an esplanaded boulevard, from which a drive (behind the north building) runs back to one bank of garages; the other bank is reached from a side street. An eminently respectable neighborhood, on which restrictions had run out. Three blocks from a community center and bus line.

solution: A group of row houses about a private court. The latter serves as a playground for small children. "We prefer parallel buildings to ones at 90-degree angles," since these avoid the intimacy of windows adjacent to each other across a corner. Between the two garage areas is a drying yard adjoining the project laundry. Projecting fins of corrugated structural glass "assist in eliminating inter-audibility reflected from the roof overhang."

materials and methods: CONSTRUCTION: *Foundations:* reinforced-concrete slab. *Frame:* wood stud, platform type. *Walls:* exterior—second-hand brick, shakes, composition board and batten; interior—water paint and wall paper over gypsum board. *Floors:* carpeting; asphalt tile (kitchens); strip oak; ceramic tile. *Roof:* built-up roofing.

EQUIPMENT: *Heating:* gas-fired attic furnaces; controls; attic fans. *Water heating:* gas-unit, circulating system; 200-gallon tank.



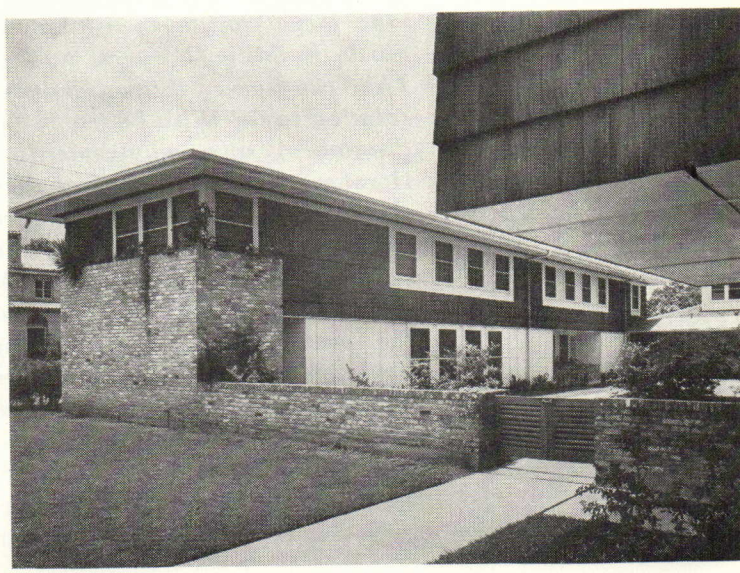
Haver questioned "if bringing all cars in on the side street and eliminating the north drive" was considered. "The drive at rear of the north building has proved pretty handy for wet weather and/or cumbersome unloading direct to units," says Wilson. "Access to garages entirely from side street would have made vital drying yard impossible." Finding the job "very good" in general planning, Hershey felt that doors in front of kitchen ranges (north building) must be "very annoying." "Au contraire," Wilson contends. "Kitchen doors swing out. Screen, which never stands open, doesn't interfere. Thus, circulation is across merest corner of kitchen." Maston found the site planning "well conceived"; the orientation, "excellent."

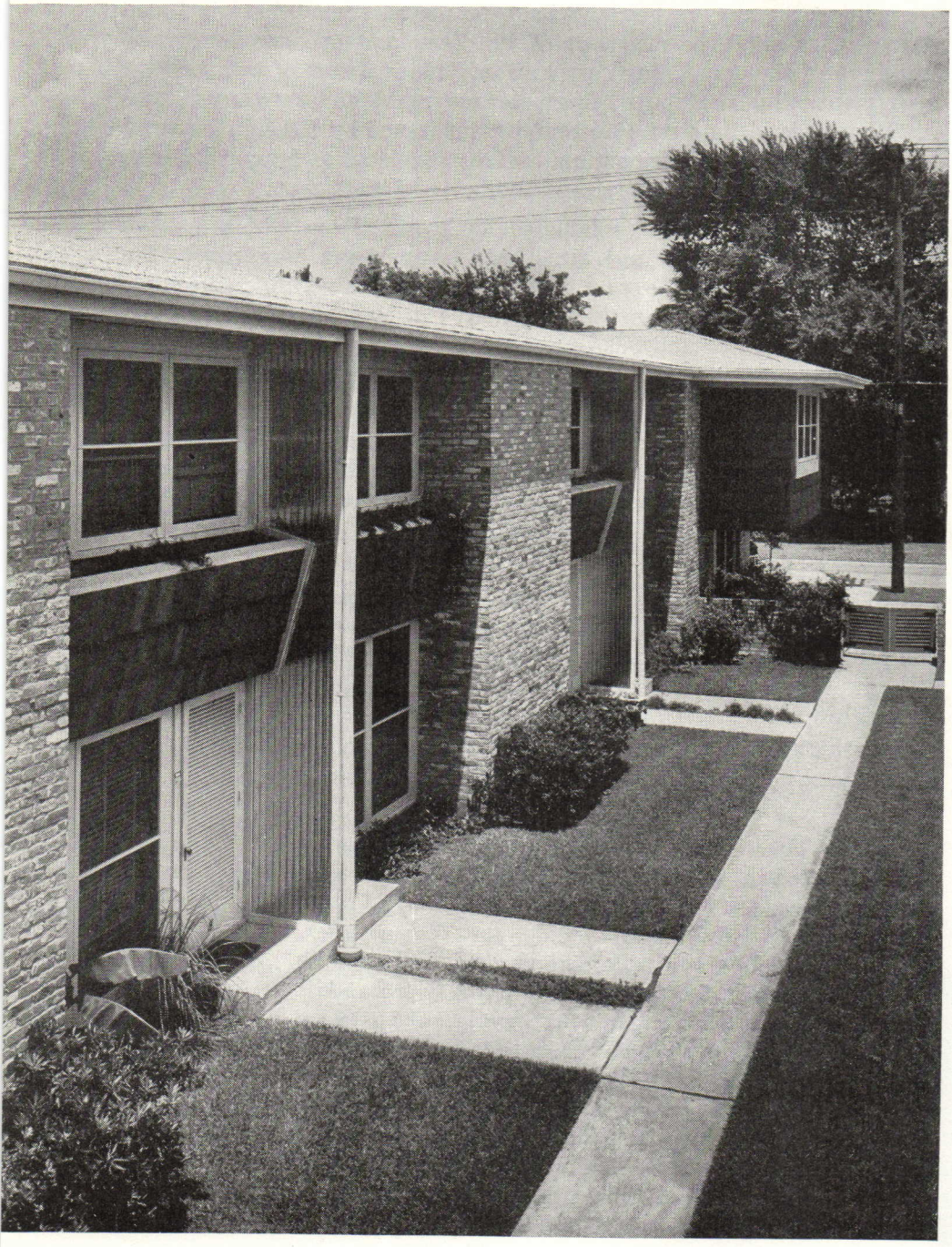
Photo across-page: general view of north building. Two of the critics questioned the advisability of dropping rain water two stories from downspout stubs at street front of building. "So did the FHA," Wilson adds, "but it works well, and the catch basin helps drain the yard."

Above: looking down into main court toward boulevard.

At right: the south building. While Maston found the buildings have a "pleasant over-all character," he felt that the mass of brick veneer at the east end of this building "relates rather awkwardly to the rest of the building." Wilson reacted: "Oh, I dunno."

Photos: Dorsey & Peters

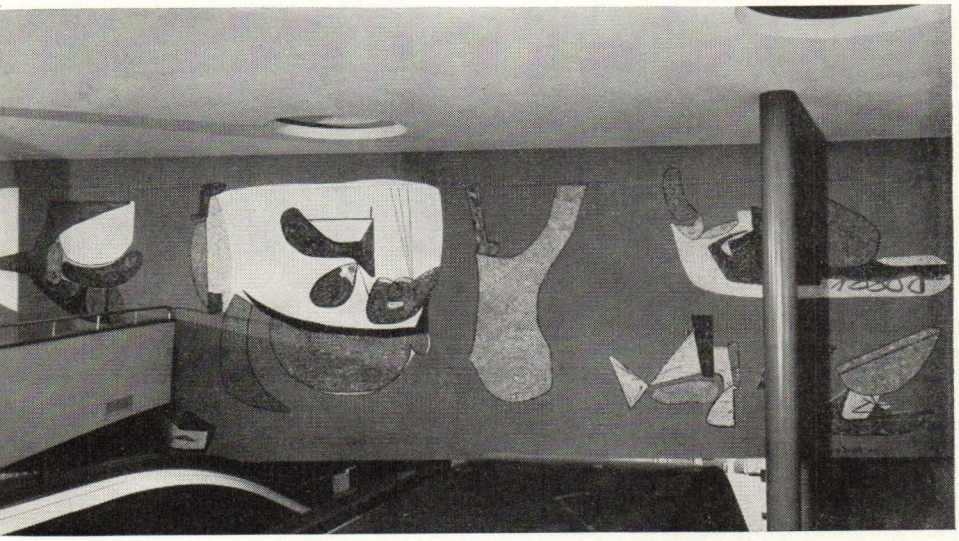


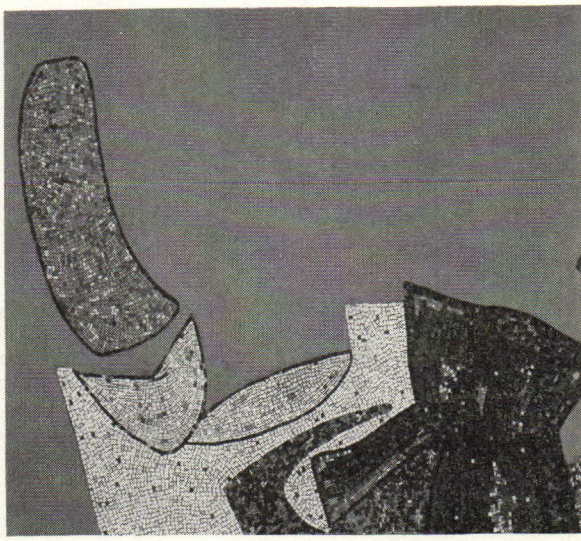


Left: looking along the north building; note detail of sheltered entrance and division panels of corrugated structural glass.

Below: view of one of the living rooms in the south building; stair and front door, right; dining area in background.

Haver comments that "the residential character of the buildings is pleasant." But, he goes on to say "the large cantilever of the upper floor on the north building borders on being spectacular." That cantilever, Wilson points out, "is a frank solution to the third bedroom (and evasion of low ground-coverage requirements of FHA)." While Hershey questioned several details, he concludes that "this is a successful venture, and I congratulate the architects for having educated FHA to the finer things in architecture." Maston's summary impression is that "the basic units, especially in the south building, take advantage of the available land space to offer what seems to me a great amount of livability for the budget."





Mosaic designed by Max Spivak for the Calderone Theater, Hempstead, Long Island (William Lescaze, architect), and executed by the De Paoli Co. Richness and texture are given by the colors and the studied arrangement of the rows of tesserae. Here the artist, the architect, and the craftsmen worked together to combine abstract forms in mosaic with shapes in smooth white plaster against a grey background.

Mosaic for Today's Buildings

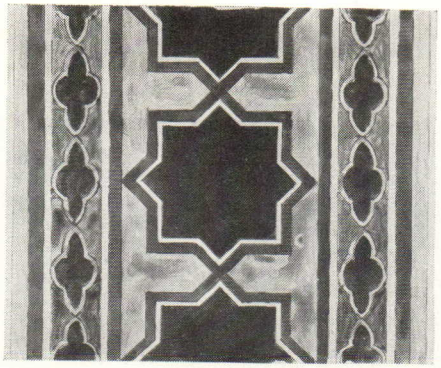
BY EUGENE CLUTE

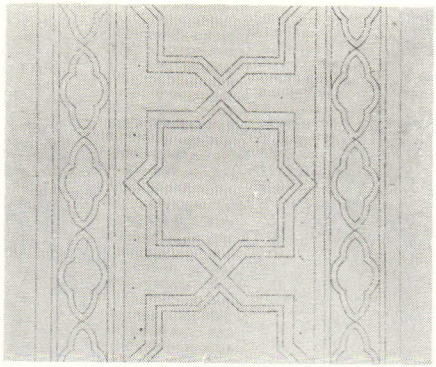
Contemporary architecture can gain much through the use of mosaic in a modern way, to relieve the plainness of surfaces with enrichment at focal points, increasing the effectiveness of the building. Mosaic fits into our architecture because it does not break the surface, but is an integral part of it, and it is a versatile means of expression.

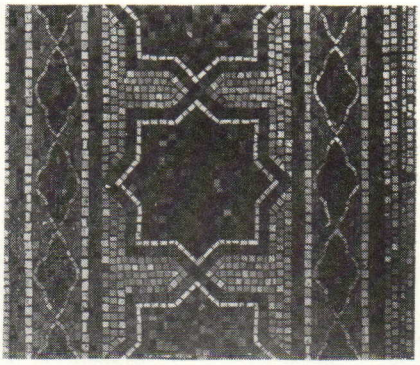
The tesserae, of which mosaics are formed, lend themselves to the composition of abstract designs and other present-day forms as well as they ever served in the execution of traditional designs. Mosaic belongs to our times as much as to the days of old Byzantium or Venice, because it is, basically, very simple and flexible—a matter of arranging small pieces of marble or vitreous material in whatever way one pleases.

For many years, mosaic craftsmen have commonly been given bad designs to work from, banal in conception, poorly composed and drawn, that too often have called for a degree of naturalistic rendering contrary to the decorative nature of the medium. The better craftsmen

Above, mosaic designed and executed by Max Spivak. Unusual mingling of large and small tesserae of various shapes give depth to the composition. At left, detail from enamel mosaics recently completed in Christ Church Methodist, New York, N. Y., designed in the office of Cram & Ferguson, architects, under the direction of Alexander E. Hoyle, executed by the De Paoli Co., Long Island City, N. Y. An effort to embody traditions of Byzantine mosaic in a fresh expression in design and technique. Mosaic is in softly blended hues on gold background, complementing rich marbles used in interior.







Steps in design and execution of mosaics begin with sketch from architect or artist. Illustrated here, at left, is such a sketch for a detail of mosaic border in Christ Church Methodist. In the studio the craftsman's first task is usually the preparation of a full-size cartoon, adapting the design to the technique of the mosaic. This is traced in reverse and transferred to a strong paper on which the tesserae are to be mounted.

In a repetitive design, a perforated stencil may be prepared, as illustrated in the center photo. The full-size drawing on mounting paper is then cut into sections (about 10" x 20" for wall work), and keyed to a setting drawing. The tesserae are then selected, fitted, arranged and affixed to the paper, as illustrated at right. The craftsman's skill and artistry are here paramount.

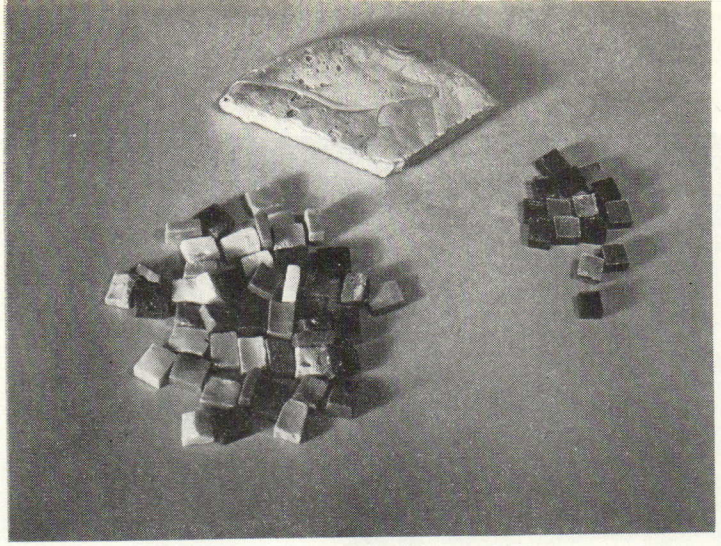
welcome the liberation that comes with the opportunity to collaborate with an architect or designer to make mosaic live again.

There are, as yet, not many examples of the use of mosaic in a modern way. But there are enough such works to suggest the possibilities of this medium and there is much material for study, because the techniques employed in the best old works, when disassociated from the traditional design forms, provide the basis for a rebirth of mosaic. There are two general types of mosaic according to the nature of the material of which they are composed, namely: enamel mosaic and marble mosaic. Enamel mosaic (known as Venetian or Byzantine mosaic) is formed basically of tesserae (individual pieces) of "enamel," a vitreous material which is of the nature of glass, from which it differs in that it contains much pigment. This gives it its colors and also renders it opaque. Enamel tesserae have vibrancy due to the nature of the material and to reflections from the irregular surfaces produced when the tesserae are broken from the larger pieces of enamel. The colors, too, have a lively quality, though many of them are of great delicacy, and they are permanent; the colors in the enamel mosaics in the Byzantine Church of St. Sophia, for example, and other ancient buildings are still fresh and clear.

Gold tesserae are used extensively in combination with enamel tesserae, mainly for backgrounds. Silver tesserae are also used to some extent, usually in combination with gold tesserae. Three makers in Venice, it is said, hold the secret of making the gold tesserae, which consist of a base of glass upon which is placed gold leaf that is covered with a thin film of glass. In the best tesserae, the whole is fused without damaging the gold leaf, which being sealed in the glass, is protected permanently. Silver tesserae are made in a similar way, using silver foil.

Tesserae of pottery or other vitreous materials are used where required for the desired effect; for example, pottery supplies some of the rich, red-brown notes in the apse mosaics illustrated here. Materials of less permanence than marble or vitreous enamel should not be used in the composition of mosaics. Some artists experimenting with mosaic have introduced pieces of metal or wood in their work, but metal tarnishes, changing the color scheme, and wood decays.

Where cost is an important consideration, as in a store front, it has been found possible to use tesserae broken from domestic structural glass for the background, enlivened with a few of the imported enamel tesserae, the design being in enamel.



Mosaic made of gold and enamel tesserae owes much of its sparkle to the fact that the pieces of enamel are cut from "pancakes," so that the fronts of all but the largest enamel tesserae are broken inner edges, rather than less vibrant outer surface.

Tesserae of vitreous enamel for Byzantine or Venetian mosaic are cut on an anvil, with a chisel-headed hammer. Illustration at top right shows cutting of tesserae for a figure being composed on mounting sheet. Marble mosaics (Roman, Pompeian or Cosmati) are similarly prepared except that tesserae are cut on soft iron block and affixed with a different type of adhesive. Illustration above shows craftsmen working on floor border. At the left of the picture is pile of sections already on paper backing. Final step in mosaic execution is setting the mounted sections in place. Note in the illustration below that edges of section are notched to avoid seam at the joining. Mosaic is pressed into soft mortar mastic so that irregularities in depth of tesserae are taken up, with the finished surface being even.

Marble mosaic is composed of tesserae sawn and broken from slabs of various kinds of marble, white and colored. The range of colors and tints is limited in comparison with the colors in enamel tesserae, but they are of great beauty. Marble mosaic lacks the sparkle and vibrancy of enamel mosaic, but it has a soft luminosity all its own. Light penetrates the semi-transparent surface of polished marble to a slight depth and is reflected by facets in the surface, making it luminous.

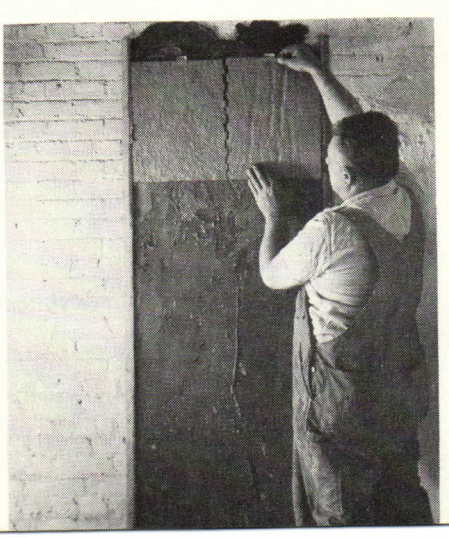
The marble of which tesserae are made is sawn into slabs of the desired thickness by means of gang saws that are without teeth, the cutting being done by sand and water fed onto the saw constantly. Next the slabs are cut into tesserae. The broken surfaces are the edges of the tesserae, the face and back being sawn surfaces. Tesserae for the Roman type of mosaic are about $\frac{5}{8}''$ to $\frac{7}{8}''$ square by $\frac{5}{8}''$ deep. Those for Pompeian mosaic, which is distinguished by the smaller size of the tesserae, are about $\frac{3}{8}''$ deep by $\frac{1}{4}''$ to $\frac{1}{2}''$ square. There is also a type of Pompeian mosaic that is made up of stones of irregular shape, not more than $\frac{5}{8}''$ over-all and approximately $\frac{3}{8}''$ thick.

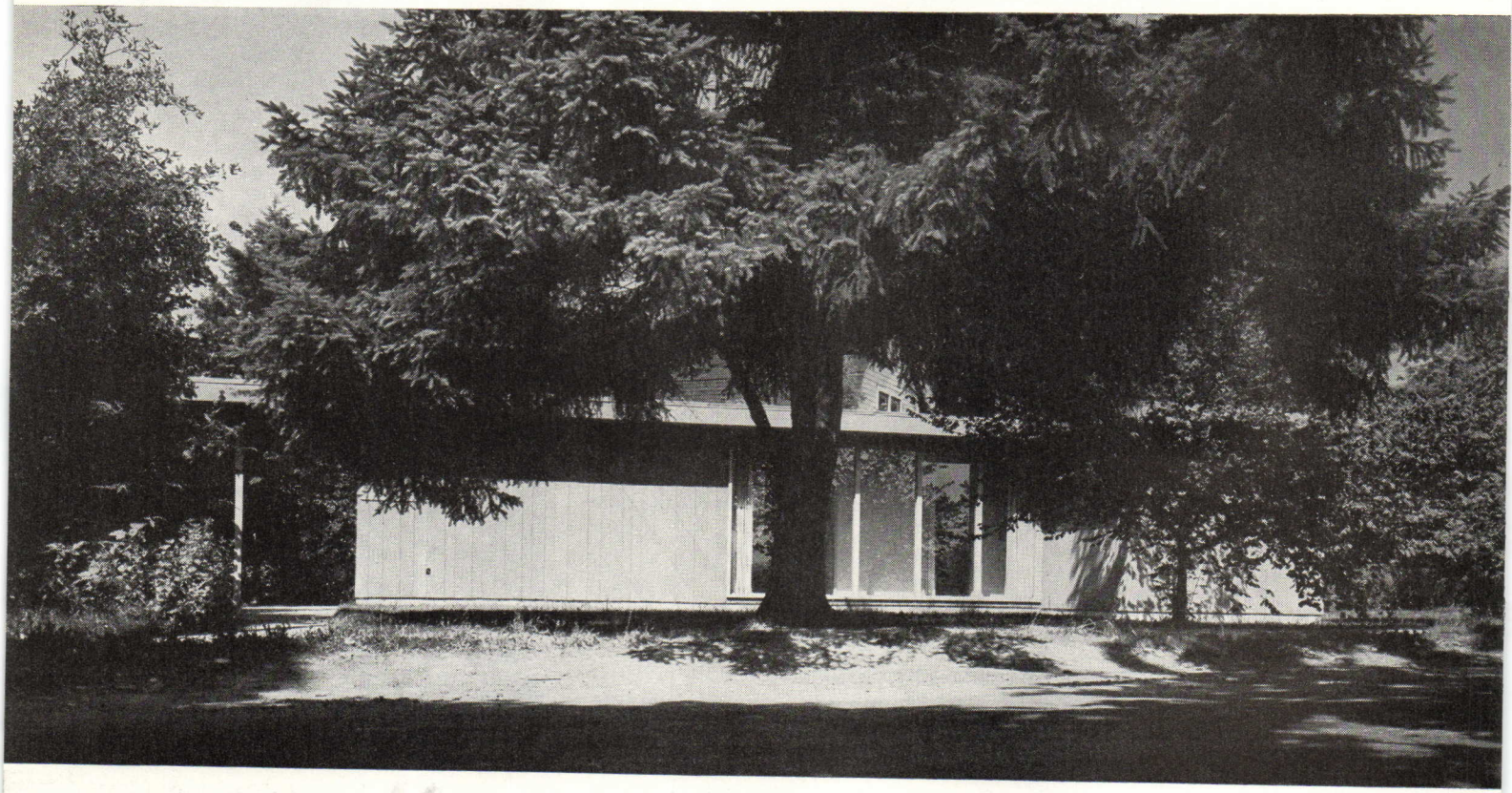
Tesserae for Cosmati mosaic are broken from slabs of marble about $\frac{3}{4}''$ to $\frac{7}{8}''$ thick, with a chisel-hammer on an iron block. All edges are broken to shape by hand in this way, preventing mechanical hardness. Cosmati is distinguished from other types of mosaic by the fact that the tesserae are cut to conform to the design. It is composed of relatively large pieces generally of various geometrical forms, such as squares, oblongs, triangles, and circular pieces. The sizes of Cosmati tesserae range upwards from $\frac{3}{4}''$ to about 4" across.

Enamel mosaic is suitable for walls, ceilings, soffits of arches, etc. Marble mosaic of the Roman type or of the Pompeian type is used for floors or for other surfaces. Cosmati mosaic is most often used for borders in marble floors but there are some fine floors entirely of Cosmati mosaic.

Whether made from vitreous material or marble, mosaics are permanent and essentially architectural. They are tied into the design of the building through the simplification that is imposed by the expression of the subject in an arrangement of tesserae. This limitation tends also to a vigor of handling that is apt to be lost in a multiplicity of details when a more facile medium is employed.

Today we have facilities which make it possible to produce speedily mosaics that are fully studied and executed with proper care, through the co-ordination of the specialized abilities of various craftsmen.





Dental Clinic: Bellevue, Washington

J. L. FOLLETT, ARCHITECT

program: A clinic—two operating rooms (one for X-ray work); a laboratory; dark room; recovery room; office and waiting room; building (minus dental equipment) to come within a $5,000 budget.

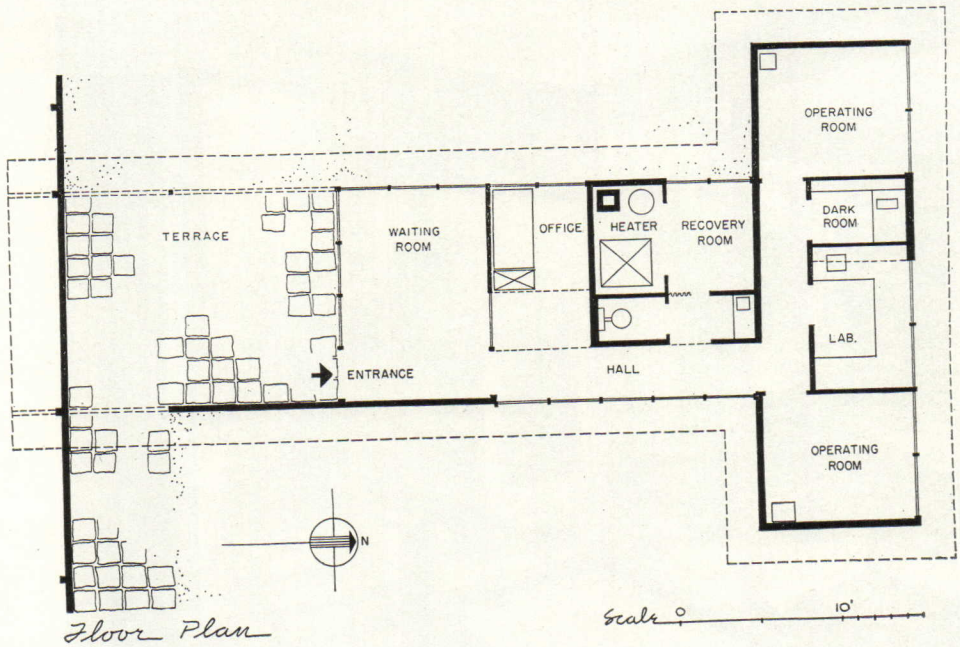
site: Relatively flat, rural; on west side of bordering street.

solution: With the small budget, as the architect comments, "naturally the spaces had to be small—as small as functionally practical." However, with the open side, "I hated to have it look too small." To resolve this, he extended the building by means of a semi-enclosure, for a terrace-entrance area; then walled the minimum-size (but adequate) waiting room with glass panels, which visually make the small area seem spacious. The building proper actually cost $4800; the dentist's equipment added $5,000 more.

materials and methods: CONSTRUCTION: Concrete slab. *Walls:* wood frame, surfaced outside with 1″ x 6″ t & g Western cedar; inside with ⅜″ plaster board. *Floors:* linoleum over wood, raised above slab on 2″ x 4″s placed 16″ o.c. *Roof:* built-up; 15-year guarantee. *Insulation:* acoustical—quilt type; thermal—wool batts. *Fenestration:* special wood sash; crystal sheet "B" glass.

EQUIPMENT: *Heating:* oil-fired, hot-air, introduced to rooms at ceiling height and using the space between slab and finish floor as a return-air plenum which is served by a continuous, screened slot immediately inside the bottom of the sash. "By taking the air directly from the base of the glass sheets, a warm floor and non-fogging glass was achieved."

the architect: *J. L. Follett:* U. of Wash. (B. Arch.); work in various offices. Chief Architect, Naval Station, Seattle (1945). Own practice interspersed with work in other Seattle architects' offices.

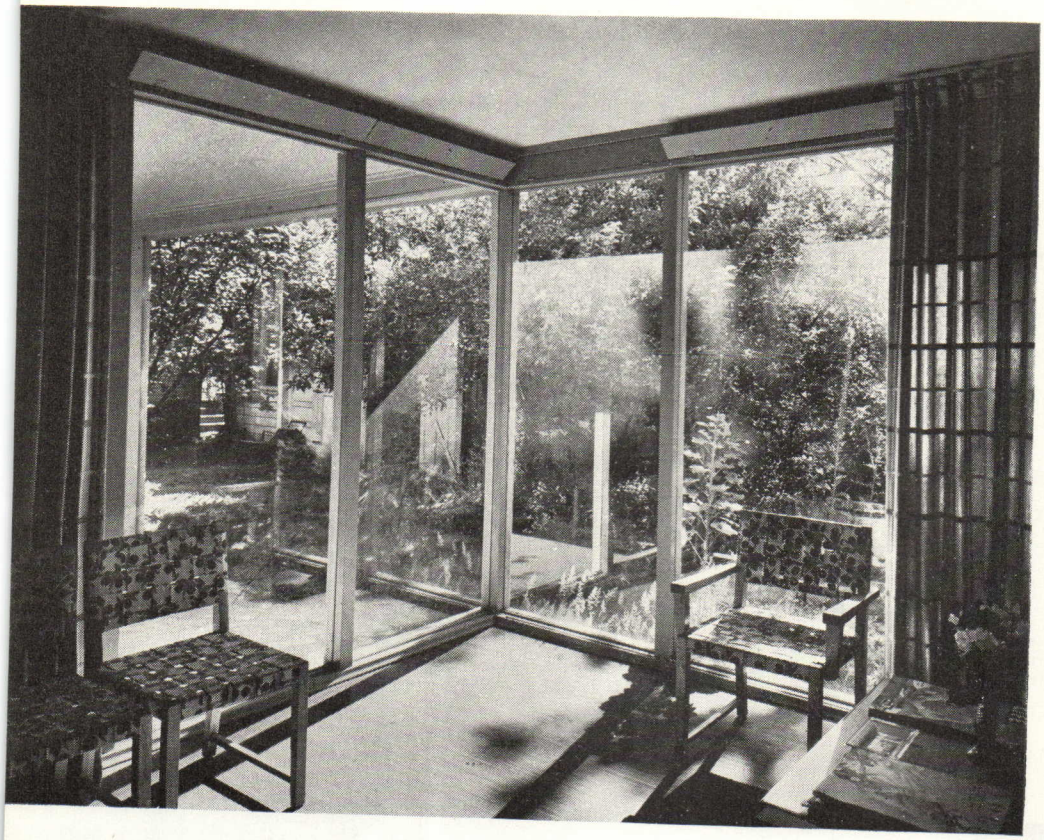


Floor Plan

Across-page: street view, showing the extensive effect of the wall screening the terrace-entrance, at left. The siding is stained rust red; cornice is burnt yellow; soffits, chalk green; and trim, burnt green.

Below: terrace-entrance detail, wherein the semi-enclosed space adds to the apparent size of the building.

Photos: Dearborn-Massar



Left: view from waiting room out to terrace-entrance and rear garden. Natural-finish maple furniture has a red-and-white patterned fabric. Notice in-swinging, screened ventilation panels above fixed glass panels. These occur throughout the building.

Above: the operating-room wing and (at left) an interior detail, showing the wall-to-wall fixed fenestration, with operable vent strips above.

DENTAL CLINIC: BELLEVUE, WASHINGTON

Hotel: Fort Fairfield, Maine

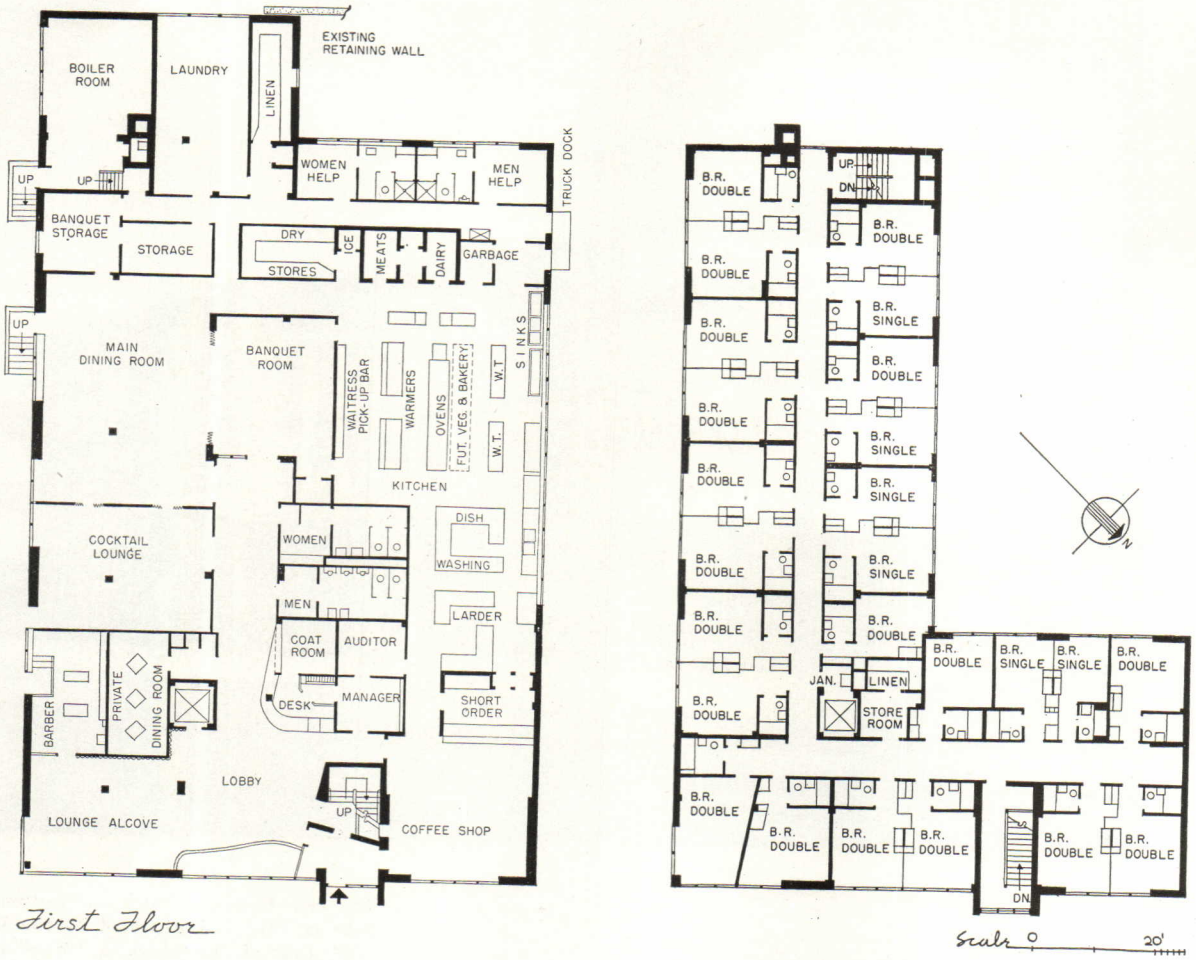
ALONZO J. HARRIMAN INC., ARCHITECTS-ENGINEERS

The new Plymouth Hotel replaces one built in 1917 and destroyed by fire in 1947. Located "way down in Maine" in Aroostook County (the potato empire), it is close to the New Brunswick border. While there is some summer-tourist business, the hotel is for year-around use—commercial travelers and such local needs as banquets, clubs, etc.

Above: general street view.

Below: the lobby.

Photos: Clarence H. White



program: A 50-room year-round hotel, to replace a hotel destroyed by fire.

site: Desirable corner location—the site the old hotel had occupied. Because of an adjacent brook and the high water in the spring, a basementless scheme was adopted.

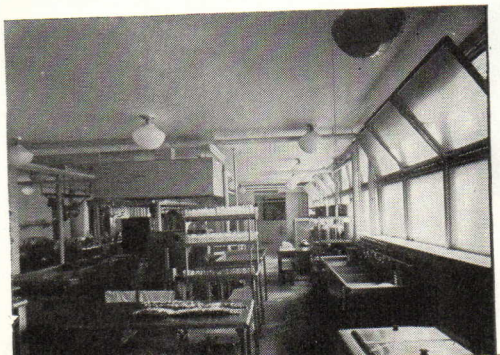
solution: As the hotel was to be operated by the American Hotels Association, the architect worked with them from the start, establishing room sizes and square-foot areas for all departments. For economy, windows were grouped (avoiding brick piers); corrugated asbestos was substituted for masonry spandrels; and back-up cinder block was left exposed and painted for guest-room wall finish. The typical bedroom floor plan shown is the top floor; on the second floor, there are two living-room-and-bedroom suites provided by joining adjacent double bedrooms.

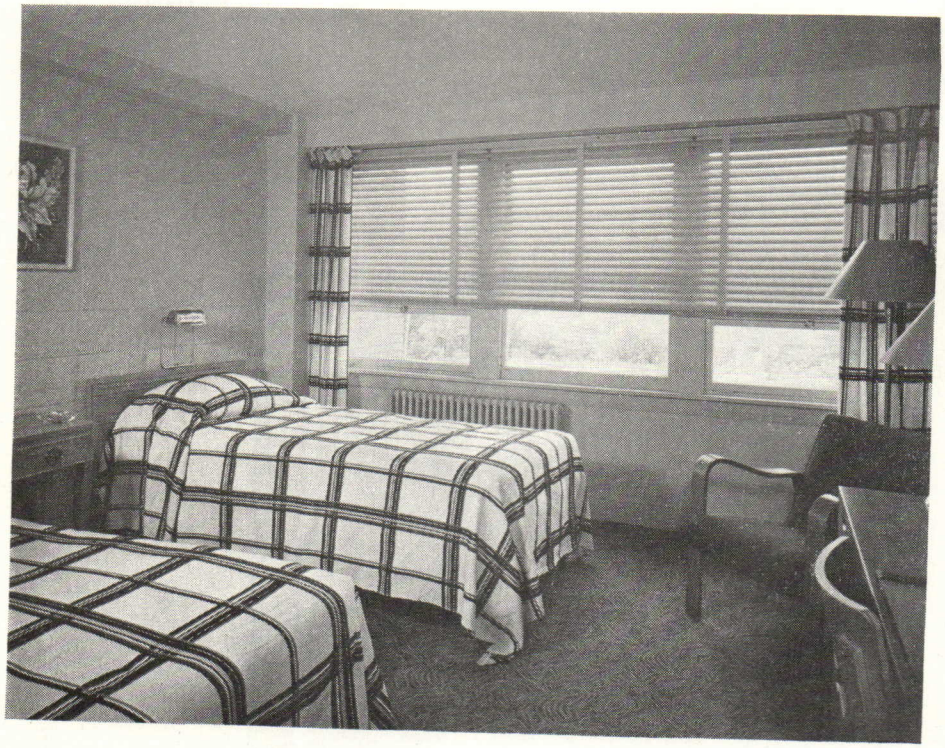
materials and methods: CONSTRUCTION: *Frame:* structural steel. *Walls:* face brick, back-up cinder block; corrugated asbestos in spandrel areas. Interior walls finished with paint. *Floors:* light, expanded steel joist system. Finishes: asphalt tile (ground floor); carpet on upper floors; ceramic tile in toilet rooms. *Roof:* expanded steel joist; built-up roofing. *Insulation:* 13/16″ vapor barrier in walls; 2″ rigid insulation in roof. *Partitions:* solid plaster between guest rooms; cinder block at stairwells, elevator, boiler room, and kitchen; elsewhere, wood stud surfaced with gypsum board; metal partitions in toilets.
EQUIPMENT: *Heating:* low-pressure steam system; oil-fired furnace; cast-iron radiators; steel piping; adjustable controls.

the architect: *Alonzo J. Harriman:* U. of Maine (B. S., Mech. Eng.). Five years work in structural engineering followed by Harvard U. (M. A. Arch.). Established own practice in 1939. During the war the firm did an enormous amount of housing and industrial-plant design.

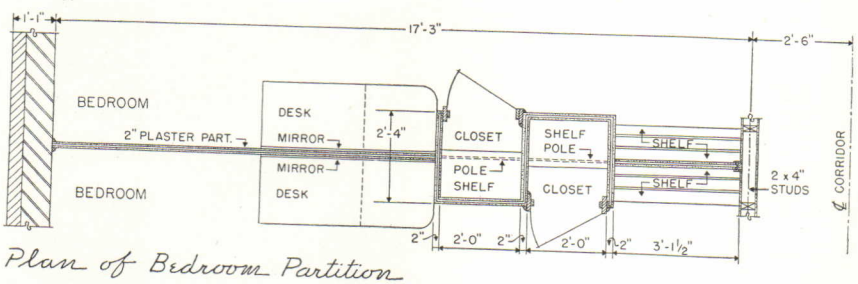
Above: detail of main desk in lobby.
Right: the main dining room, with folding partition of banquet-room area at right.

Right: the coffee shop, with big window at right looking out onto Main Street.
Below: the hotel kitchen, daylighted by continuous windows at right.





An important design factor, unfortunately not conveyed by black-and-white photographs, is the generous use of color throughout. Wall paints and furniture fabrics vary from room to room. The economical partition between rooms (a compromise with an original hope for a complete storage wall) includes built-in baggage rack, and a desk-dresser combination.

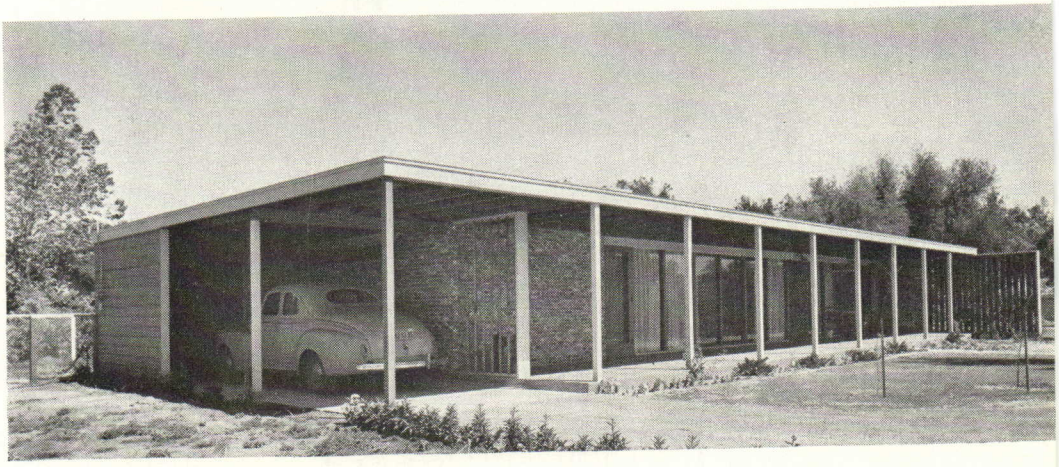


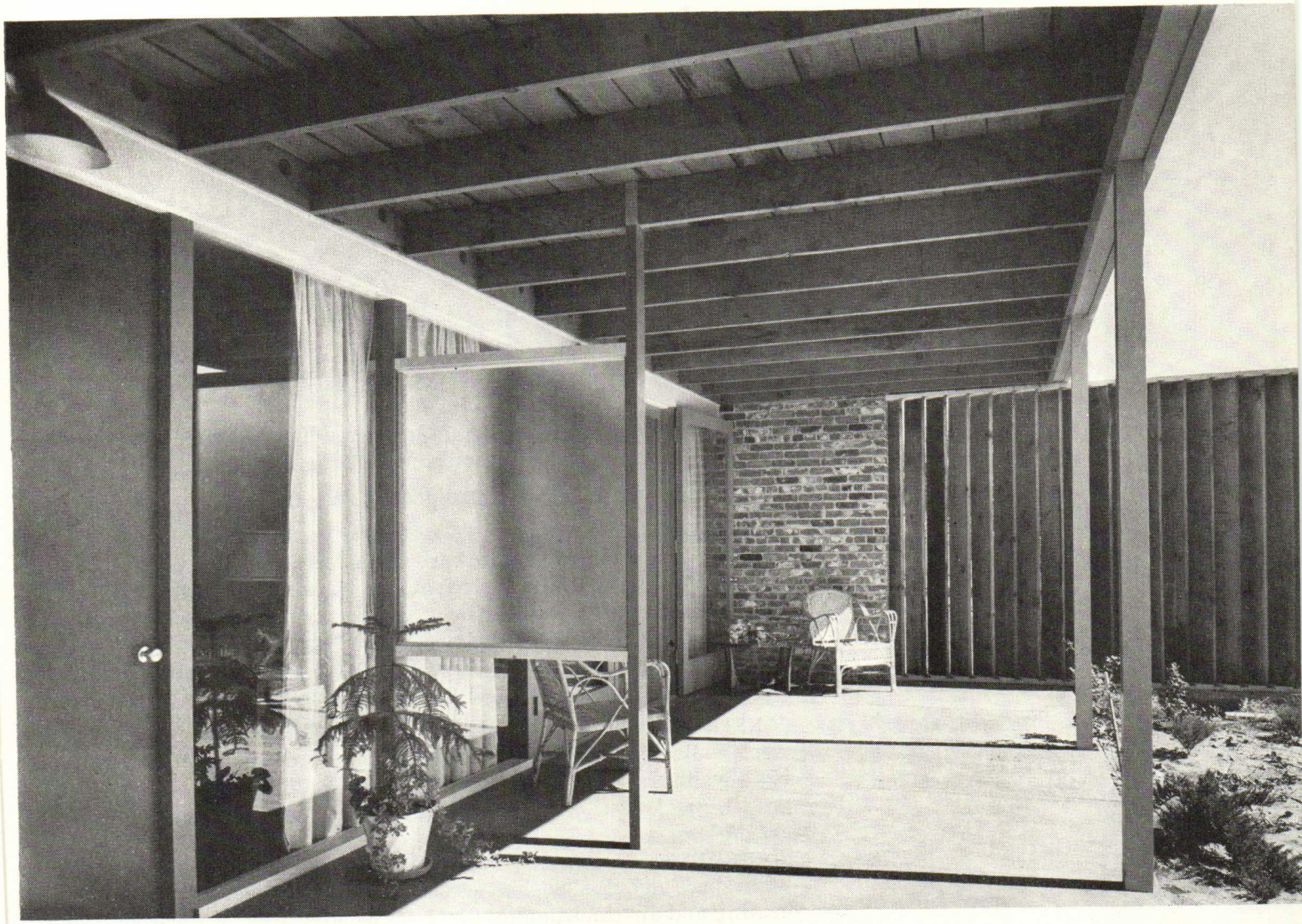
Plan of Bedroom Partition

HOTEL: FORT FAIRFIELD, MAINE

House: Fresno, California

HENRY HILL, DESIGNER

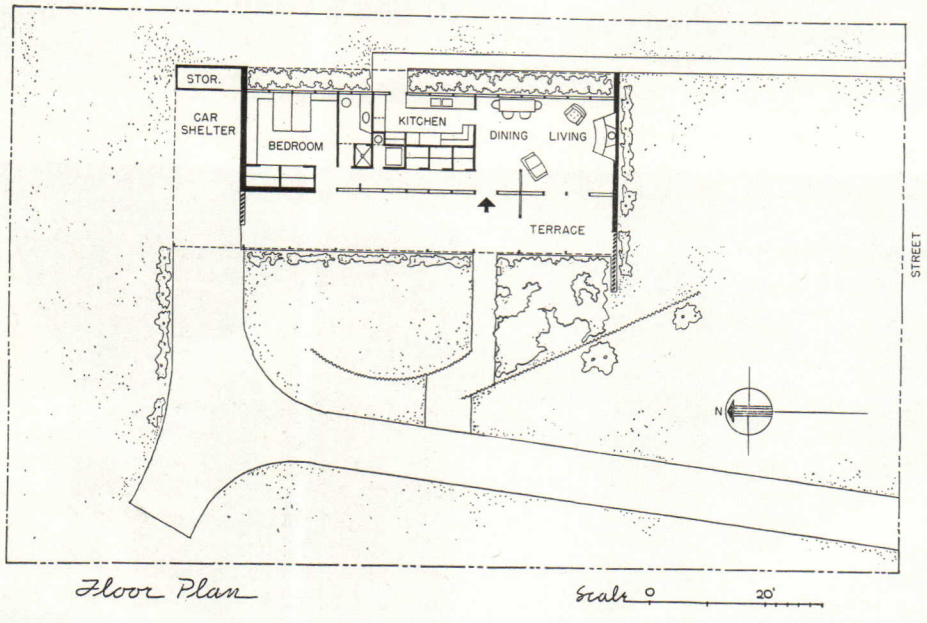




Top: view from the northwest—the direction from which the prevailing breeze derives.

Bottom: detail of western terrace, protected by 10-foot overhang, that also acts as a breeze trap.

Photos: Roger Sturtevant



program: Economical house for a veteran and his wife, designed to cope with the sometimes intensive summer heat of the area.

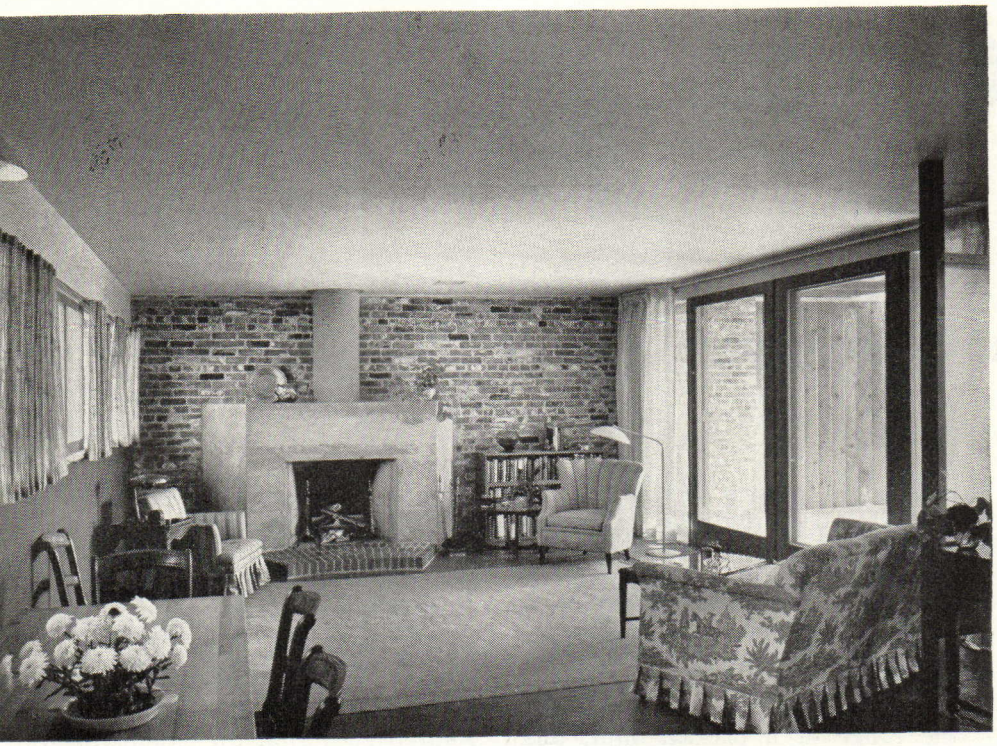
site: Flat property, north side of residential street.

solution: House organized within simple rectangle (cost came to less than $10 a square foot) with its end toward the street, and the western garden screened by redwood beanpole fencing. To take advantage of the prevailing northwest breeze, a 10-foot roof overhang extends along both north and west sides (on the north end forming the carport) which acts as a breeze trap. A screened slot 1'-6" high (see bedroom photo) is provided in the north wall to draw the breeze through the room.

materials and methods: CONSTRUCTION: Reinforced concrete slab. *Frame:* wood for east and west walls; end walls of brick. Exterior—redwood; inside walls—rigid wallboard, painted. *Floors:* concrete and brick. *Roofing:* tar and gravel. *Insulation:* wool batts. *Fenestration:* wood casements; crystal sheet glass.

EQUIPMENT: *Heating:* gas-fired furnace serving hot-air system, with space above 6'-8" hall closet and shower enclosure serving as heating and air-conditioning duct. *Air conditioning:* water-cooled unit installed on roof, above the furnace.

the architect: *Henry Hill:* U. of Calif. (A. B.); Harvard U. (M. Arch.). Prior to war, partnership with John Dinwiddie; immediately post-war, member of Mendelssohn, Dinwiddie & Hill; own practice, past two years.

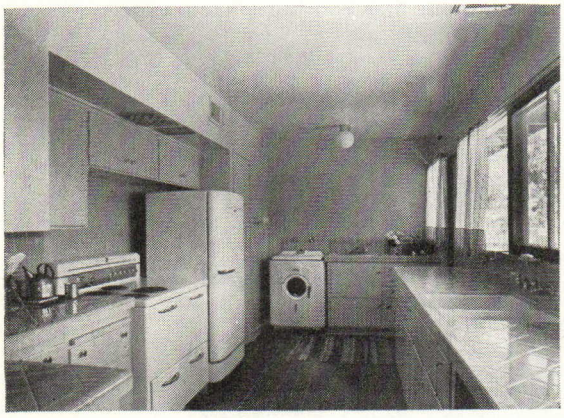


End walls of the house are natural, second-hand brick; wood walls, oil-finished; front door, gray-blue; car shelter post and thin line of gravel stop, salmon red.

At left: the living-dining room with full-height doors and windows on west wall (right) and higher, alternating fixed and casement sash along east wall. Together, they create something of a venturi effect in breeze luring.

Below: northeast corner of bedroom; note screened breeze slots (one open, one closed) at top of north brick wall.

HOUSE: FRESNO, CALIFORNIA



Above: the efficient kitchen has a door out to the rear and a view through the eastern windows across the valley to the Sierras.

Right: the walls of the hallway are surfaced with striated plywood. Left-hand wall made up of storage closets, furnace room and (above them) the heating and air-conditioning plenum.

How to Choose a Comfort Cooling System

BY ROBERT H. EMERICK*

To make a reasonable choice in any field one must understand the alternates available. For comfort cooling these alternates include: mechanical compression systems, absorption cycles, steam jet arrangements, designs with ice, and plain cold water from the nearest well. Let's see what we can expect from each.

the case for mechanical compression

These systems, currently dominating the market, employ the basic arrangement of compressor, condenser, evaporator, expansion valve, and air moving fan. These are illustrated by Figure 1.

For small loads, say up to 15 tons, most of the mechanical compression circuits are concealed within the smartly finished cabinets of the familiar package coolers. These units are push-button controlled, uncomplicated in appearance, and notably flexible in their application. We can use them to supply cool air to a duct distributing system or simply allow them to discharge into the room wherein they stand. Service too, is quite simple—hardly more difficult than for a domestic refrigerator—a skilled service man can replace an entire compressor in two hours or less.

Wherever we have a load within the range of a package unit, and most retail specialty stores and professional offices are within such a range, this solution is likely to be the simplest and best. Some installations will use city water for condensing the refrigerant; however, at a rate of 1½ gallons per minute for *every* ton of capacity, the expense may become an item to be reckoned with. If we can't stand the cost of water then we must install a cooling tower which enables us to use the same condensing water over and over again. Air for condensing is not practical for units larger than 1½ tons, under average summer conditions.

Table 1 indicates the floor space and headroom we should provide for these package coolers, although some variation from these dimensions must be expected.

The installed costs will range from $300 to $600 per rated ton of capacity, depending on the need for ducts, cooling tower, structural changes and reinforcements for the building, and finally, the status of local competition. Operating costs of course, depend on the hours of use and existing electric rates; within the range of 5 to 15 tons capacity an estimate of $6.00 per ton, per peak month, might be a reasonable average.

package units for large loads

By grouping a number of small cabinets we have a means, although not always the best one, of meeting a large load. The advantage of this plan is an obvious one: all units are not likely to break down simultaneously. On the other hand two serious disadvantages are incurred: first,

* *Consulting Mechanical Engineer, North Charleston, South Carolina.*

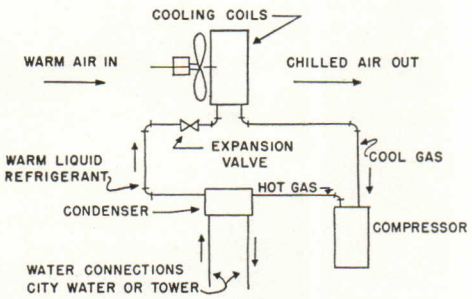


Figure 1, above: mechanical compression circuit.

Table 1: Small Package Coolers

Rating tons or hp	Width inches	Depth inches	Height inches	Air cfm
1*	38	20	40½	360
3	46	24	73	1200
5	49	20½	95½	2000
7½	73	38	73	3000
10	73	38	73	4000
15	102½	28	104	6000

* Air-cooled condenser, all others water cooled.

Figure 2, below: dispersed central plant arrangement.

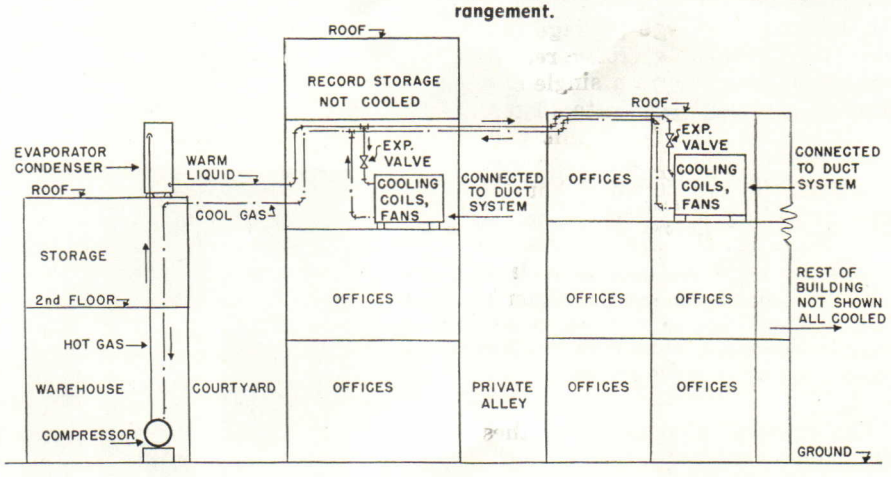


Table 2: Large Package Coolers With Built-In Evaporative Condensers

Ratings tons or hp	Width inches	Depth inches	Height inches	Air handled by conditioning fan, cfm	Air handled by condenser fan, cfm
15	110	42	74	7000	4400
20	110	42	74	8000	5000
25	122	48	77	10,000	6000
30	130	54	85	12,000	7500
40	140	60	90	16,000	10,000

Table 3: Component Parts Data

	Rating	Length inches	Width inches	Height inches	Weight pounds
Compressors	15 Tons or hp	82	36	49	2100
	20	82	37	49	2180
	25	82	37	49	2200
	30	82	37	49	2240
	40	82	37	50	2650
	60	106	44	52	4240
	75	106	44	54	4700
Air Mover and Filter Units	3-8 Tons	95	44	29	Variable, from about 300 to 2,000 pounds, depending on number of coils, inclusion of dampers, etc.
	8-16	102	71	29	
	16-24	102	71	39	
	16-33	102	71	49	
Cooling Towers	2½ Tons—80F wet bulb	66	30	40	500
	4	102	30	40	650
	6	102	30	52	800
	8	102	30	64	950
	10	102	30	78	1100
Evaporative Condensers	10 Tons	74	30	55	1550
	15	61	30	88	1900
	20	61	30	94	2100
	25	70	30	97	2500
	50	98	30	116	4300
	75	100	30	129	5500
	100	110	30	142	7200

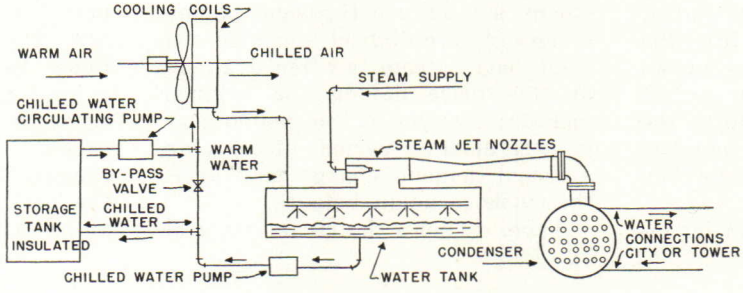


Figure 3, left: steam jet circuit.

if we can obtain equal capacity in a single unit, we are paying a premium in space for the multiple arrangement; second, the duct, damper, and control arrangements are likely to become quite complicated. Economically a multiple installation is unfavorable under most conditions.

Instead of the multiple plan we can substitute a large package unit. This type is available, from a reduced number of builders, in a single cabinet and in capacities up to 40 tons. An important feature of this package is the inclusion of an evaporative condenser in the common housing, thus providing a system all in one unit. However, the evaporative condenser requires fresh air in large volumes; we must bear its warmed bulk to the wide open spaces in even greater volumes, a feat that sometimes involves considerable duct work.

The physical dimensions of these big plants can make their location quite a problem, as emphasized by Table 2. In short, they find themselves competing with the "tailor-made," or dispersed type of central plant in which we locate the compressor in one place, the air mover unit or units in another, the cooling tower or evaporative condenser in still another.

the "tailor-made" or dispersed central plant

Figure 2 illustrates the procedure of lifting components of a system from the cabinet, for assignment to suitable areas often widely separated.

The practice enables us to set our machinery in the least essential areas and offers a way to reduce or eliminate long duct runs. This arrangement is common for very large systems since it is applicable to one building, or to several. If our load is much above 15 tons we certainly should study this possibility; the building features and the nature of its occupancy will provide a guide.

In these preliminary studies the data in Table 3, which indicate dimensions of component parts, should be quite helpful. By cutting paper templates and laying them on a drawing or sketch, we may see at once the wisdom of further investigation or abandonment of the idea.

From the investment standpoint we can expect to pay from $250 to $450 per rated ton for a dispersed central plant arrangement, depending on the situation encountered. These prices will include everything.

Operating costs, once we go beyond 15 tons capacity, begin to be affected by the demand factor that commonly appears in the rate structure for electric service. Consequently, a large comfort cooling installation, although operated but a few months in the summer, may impose on the owner a demand charge that is assessed every month throughout the year. This possibility deserves particular atten-

tion for structures of irregular or limited use, such as churches.

the steam jet picture

A dispersed central plant can be formed with somewhat less facility by using steam jets on a water tank, instead of the mechanical, motor-driven compressor. With this arrangement the condenser by necessity must be mounted contiguous to the jets but the cold water, which serves as the refrigerant, can be pumped to coils and air moving fans located anywhere.

The functioning of the steam jet system is illustrated by Figure 3. The steam jets create a vacuum above the surface of the water, and since water boils right down to 32F if the vacuum is great enough, the steam jet system is suitable for all installations above freezing. The heat of boiling, or vaporization, separates from the main body of water at a rate of 1000 Btu or more (depending on the vacuum) for every pound of water evaporated; consequently the water under the steam jets grows colder and colder and we can control the temperature by controlling the vacuum. The cold water is pumped to the air cooling coils wherever they are.

The appearance of a steam jet installation is illustrated by Figure 4. Here we see the jets on the tank, the condenser, and the pump for circulating the cold water. We do not see the cooling tower nor the cold water storage tank that, insulated with cork, frequently is a necessary auxiliary for a steam jet system.

The space requirements for the equipment shown in Figure 4 appear in Table 4. The dimensions of the storage tank can be whatever we wish.

Steam jet installations, complete, will cost from $150 to $300 per rated ton, the unit cost descending as the capacity increases.

Considering both space and initial cost factors, the steam jet system compares favorably with the conventional mechanical compressor installations. It is simple to operate; except for the chilled water pumps, it has no moving parts. However, its economical operation depends entirely on the availability of low cost steam, say $1 per thousand pounds or less. Where district steam service is at hand, steam is often available at this price during the summer months; however, if the system must be used at other periods of the year, a steam demand charge may upset the whole economic balance.

Table 5 shows the steam required per ton of steam jet refrigeration, at various pressures, and the quantity of condensing water needed. Obviously, the higher the pressure, the better the economy of operation. Higher pressures, however, tend to increase the rate of erosion on the steam jet nozzles; for superheated steam, nozzles of stainless steel or monel offer good resistance. Maintenance costs generally are low for there is little to wear out; this is one of the steam jet system's notable advantages.

what about absorption systems?

Figure 5 is a refresher diagram of the absorption circuit.

For comfort cooling, the application of the absorption principle is encountered mostly in small cabinet units of 3 to 5 tons capacity, generally fired with gas, and similar in their combustion features to the gas fired refrigerator.

Compared with mechanical compression package plants of the same size, these absorption designs are likely to have a higher purchase price, but over a period of 20 years or so their low operating costs often produce a lower over-all owning charge. This is particularly true if the local gas rate averages less than 90 cents per 1000 cubic feet, for the

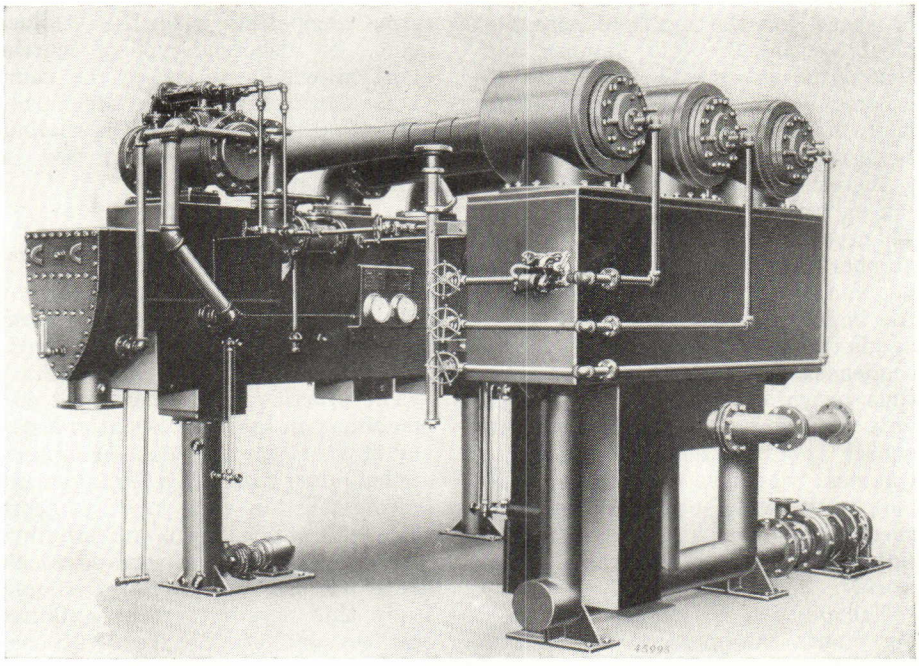
Table 4: Dimensions of Steam Jet Plants

Rating tons	Length inches	Width inches	Height inches
20	72	120	108
40	114	150	120
75	144	150	132
100	150	180	132
200	180	216	156

Table 5: Steam for Steam Jet Systems

Steam pressure psi. gage	Pounds of steam per hour per ton	Condensing water gpm per ton
Under 10	45	9.0
20	38	7.8
30	35	7.3
40	33	7.0
50	32	6.8
60	31	6.7
70 and above	30	6.5

Figure 4, below: steam jet cooling plant.



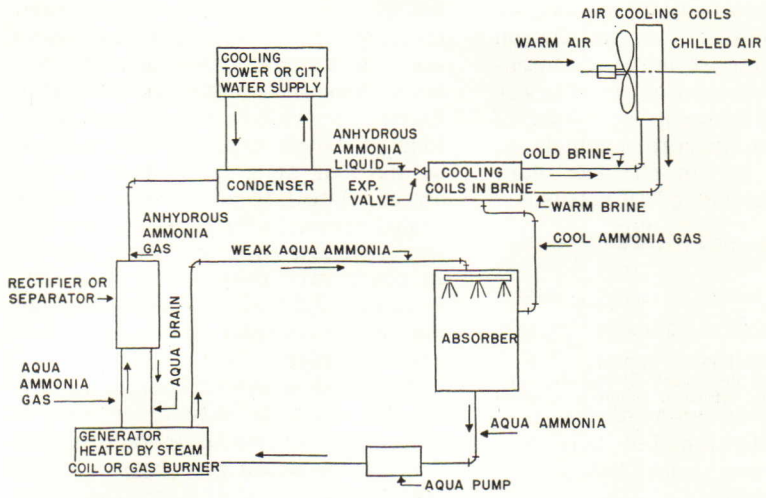


Figure 5, above: ammonia absorption circuit.

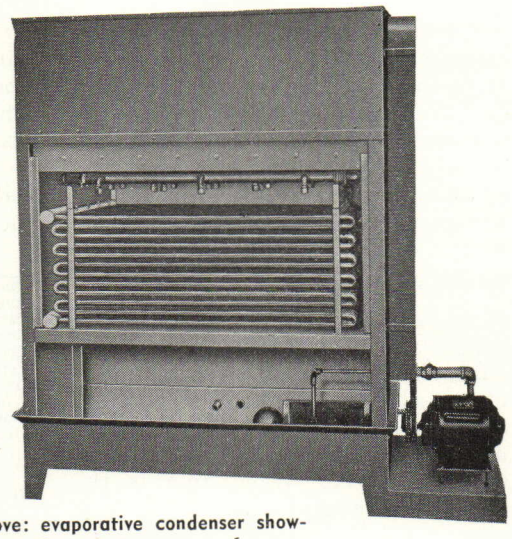


Figure 6, above: evaporative condenser showing refrigerant coils and water sump; fans are in top.

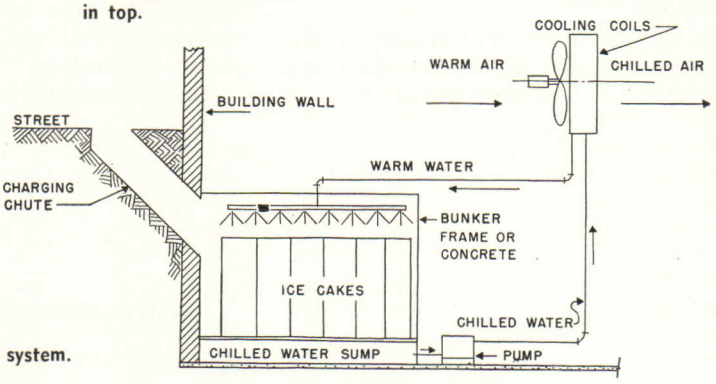


Figure 7, right: ice bunker system.

first 10,000 cubic feet used each month.

Since both cooling and heating facilities are housed in the same cabinet of an absorption conditioner, a direct comparison with other forms of conditioning requires us to evaluate the over-all picture. That is, we should add the costs of a heating plant to the conventional mechanical compression arrangement and thus strike a figure for all year operation.

The advantages of the absorption cabinets are these: a probable lowest lifetime owning cost; a reduction of moving parts by eliminating the compressor; a somewhat lower noise index, due to the absence of the compressor.

The disadvantages are these: in many communities service will be non-existent or haphazard; as with other systems of cooling, they require pumps and a cooling tower; their small unit capacity soon introduces the need for multiple installations.

Below are the physical dimensions of the absorption cabinets:

Capacity in Tons	Width (Front)	Depth (Side)	Height	Weight
3	66¼"	57½"	84½"	2150 lbs.
5	66¼"	57½"	84½"	2485 lbs.

Minimum room dimensions acceptable for maintenance: 7'-0" x 8'-0"; 7'-4" ceiling.

The cost of these all-year conditioning units, if charged against cooling capacity only, runs around $1100 per ton; if assessed against the heating cycle, $38 per thousand Btu. These figures show the fallacy of using anything less than a full year's service when attempting an evaluation of a bid.

the towers and evaporative condensers

Since one or the other of these apparatus is needed for the mechanical compression, steam jet, and absorption circuits, some idea of their sizes and weights is desirable.

Most of these units are seen on roofs; actually we can locate them everywhere, on the ground, even indoors, provided we give them enough air. In the tower the condenser water is cooled by simply spraying it into a stream of air where six or eight percent evaporates and cools the remainder. The evaporative condenser works similarly except that the cooled water falls over a coil into which the refrigerant enters as a gas and leaves as a liquid, minus its heat of evaporation. The advantage of the evaporative condenser is a physical one, as it combines the condenser and cooling tower in a single housing. It is not applicable to the package coolers which contain their own built-in condensers, and we must use towers for these.

In either case, the water is recirculated again and again and only that lost by evaporation, a rather negligible quantity in most installations, must be supplied.

Natural draft towers are the cheapest to buy; however in humid climates they are not satisfactory as the relatively small volume of air passing through them is quickly saturated and thus checks their cooling. Forced draft towers with fans and motors are essential, therefore, in such climates. Fans are standard equipment with evaporative condensers.

Table 3 presents physical facts for this group of apparatus; Figure 6 is typical of the evaporator condenser.

comfort from ice

Figure 7 illustrates an arrangement that cools by co-operation of the iceman.

As ice melts very fast when sprayed with warm water, we can obtain a great deal of cooling for a short period. For example, one ton of ice will absorb 288,000 Btu in melting; if our spray water melts it in an hour we have accomplished 24 tons of cooling since 12,000 Btu is the measure of a single ton in a single hour.

Churches, theaters, and similar centers of short occupancy have used the iceman system with considerable satisfaction. Installation expense is not heavy, since we can build the ice bunker of any size we wish. Ice costs vary with location but $8 per ton might be used as an average.

the cold water way

If we have a well handy that delivers cold water abundantly or even a chilly lake or river we can forget other schemes for summer comfort and simply pump the cold water into our cooling coils. When nature furnishes the cold water, this is the cheapest scheme of all.

first cost is not all

In considering a comfort cooling system a crucial question is: which one actually is best economically?

First price can be quite misleading since the economics of an installation include operating expenses, maintenance costs, amortization, even space assessments if space is available.

Here is an analysis for example, of bids received for an all year plant in a large residence of 18 rooms:

Item	Lowest Bid	Next Low Bid	3rd Low
Quoted Price	$9532.95	$9649.50	$10,082.96
Annual Operating Cost*	1609.96	1507.95	1465.16
Total Owning Cost, 20 Yr. Life	41,732.15	39,808.50	39,386.16
Extra Cost of Owning	2345.99	422.34	0

* Includes interest on investment @ 4%, electricity at 5 cents per kwh, estimated maintenance based on judgment and records and amortization.

Obviously the low bid here was not the most economical bid, not by more than $2000.

Another factor of importance in evaluating bids is the item of excess capacity; we might call it a factor of safety. In one large job recently analyzed by the writer, the low bid was remarkable by its exact meeting of the specifications, there was no leeway anywhere. On the other hand, the next low bid, $500 higher, provided more than three tons of excess capacity which could be devoted at a later date, if the owner wished, to an extension of the cooled areas. In 20 years the low bid was still low, but by less than $20 so the owner decided those 3 tons were certainly worth $20 to him and placed the contract with the next to lowest bidder.

The final choice of cooling system should be made only after careful evaluation of two basic factors, the first factor being the physical characteristics of the system, the other the economic. The latter must be calculated from the bids received but for the first the chart of characteristics, Table 6 should offer some initial help.

Table 6: Characteristics of Systems

System	Especially suited	Less suitable	Condenser water cooler	Remarks
Small Package Coolers, Mechanical Compression	(a) Homes, offices, small stores (b) Loads under 15 tons (c) Space or duct arrangement	(a) Large loads (b) Multiple arrangement	Tower or city water	Commonest of comfort coolers. Wide choice of manufacturers. Easy service
Large Package Coolers, Mechanical Compression	(a) Central plant duty (b) Loads from 15 to 40 tons (c) Where owner wants a big plant in a single housing	(a) Space may be unfavorable (b) Condenser ducts may complicate installation	May have built-in evaporation condenser. Otherwise uses tower	Competes with tailor-made installations
The Tailor-Made or Dispersed Central Plants, Mechanical Compression	(a) Loads above 15 tons (b) Minimizing duct runs (c) Supplies scattered load requirements (d) Excellent for large buildings or multiple buildings (e) Easily assembled with components from various manufacturers	(a) Small loads (b) If units are scattered supervision is difficult	Tower or evaporative condenser	Now serving the bulk of all installations over 15 tons
Steam Jet	(a) Medium to large loads, above 20 tons (b) Cheap steam (c) Tailor-made or dispersed central plants	(a) Economic justification needs cheap steam (b) Headroom may be a problem (c) Large water storage tank may be hard to work in	Tower	Many installations along district steam mains, especially for large loads
Absorption Package Cooler Gas Fired	(a) Homes, offices, small stores (b) Loads under 10 tons (c) Low gas rates (d) Provides all-year conditioning from a single cabinet	(a) In areas where skilled service not available (b) Initial costs tend to be relatively high	Tower	Choice of models and makers quite limited
Ice Bunkers	(a) Heavy loads for short periods (b) Buildings with irregular usage	(a) Costly for long and steady loads (b) Ice handling is sometimes messy (c) Must be built to order	No condenser	One of the early arrangements for comfort cooling
Natural Cold Water	(a) Cheapest cooling where available	(a) Cooling range limited by temperature of water	No condenser	Usable in few areas

Sun Control Methods: PART I

BY GROFF CONKLIN

This open type structural overhang, on a British school, illustrates both the merits and faults of such a sun control method. If the louvers are adjustable, the sun's *heat* will be successfully barred from the room during the hottest part of the day, when the sun is high. But the overhang is valueless in controlling glare when the sun's *light* is most uncomfortable, during the early morning and late afternoon hours. *Arcon, Chartered Architects Photo: Sidney W. Newbery*

There is no doubt that we are entering an era in which the use of large expanses of glass in all types of buildings is going to become increasingly accepted practice. The advantages of window walls from the various points of daylighting, winter heating economy, and the sense of freedom and good health which the openness of a large window gives to people, are enormous. In the words of Architect Charles Goodman, of Washington, D.C., the large glass area provides the individual with a kind of "multiple spatial magnetism: open, airy, visually unrestricted space that allows the human eye the freedom and variety of focus necessary to restfulness and psychological relaxation at all ages of the human mechanism and in all its stages of health."

Along with the glass wall, so-called, trails the problem of controlling the uninhibited sun which immediately floods the rooms in buildings so provided. It is a truism that completely satisfactory control of solar radiation and sunlight inside a structure with large glass areas is impossible, since the solution requires a compromise between diametrically opposite situations. One enlarges glass areas to increase daylighting efficiency and home livability, and then shades or drapes the openings to reduce glare and achieve privacy. One orients buildings for maximum sunlight reception in winter, and then builds in heat-absorbing glass to reduce excess summer radiation—which, in turn, considerably reduces solar heating efficiencies in the winter! One builds overhangs above and at the sides of windows, carefully designed to admit maximum sun in the winter and minimum light in the summer and finds that unfortunately the sun's rays still creep in no matter how effective the overhang, and window coverings are still essential. Though the sun is our friend, without whom we could not live, it is also something of a persistent nuisance from whom we need at least a minimum amount of protection for our own comfort.

problems of sun control

That "sun control" is not a simple matter susceptible of easy solutions is made obvious when one summarizes the more important problems which are encompassed by the phrase. Here is a list of them:

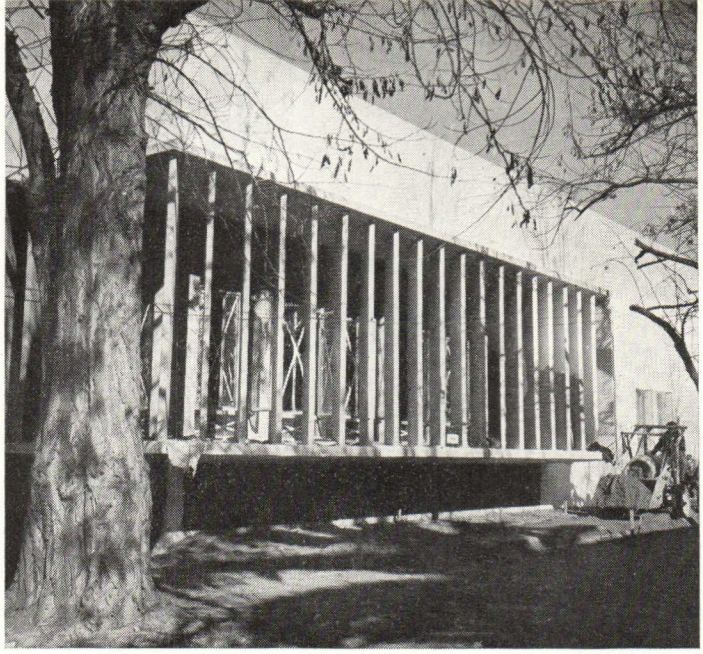
1. Minimization of glare, summer as well as winter.
2. Minimization of glare and reduction of eyestrain at all hours of the day in an exposed room.
3. Minimization of solar heat entering rooms in summer.
4. Maximization of solar heat entering rooms in winter.
5. Adjustment of solar heat to maximum operating efficiency of heating and cooling systems.
6. Control of condensation at windows in wintertime.
7. Insect, dirt, and dust control at openings.
8. Protection against rain, snow, and wind at openings.
9. Provision of adequate ventilation at all times.
10. Arrangements for privacy when needed.
11. Maintenance costs versus original costs of sun control devices.
12. Provision of adequate exterior vision; restful and non-distracting outside environments in non-residential buildings.
13. Exterior appearance: the architectural or esthetic factor.

Every building will present a complex of many or all of these problems, and no solutions will be automatic. They will take a good deal of careful thought, particularly in view of the highly technical physics of solar radiation, optics of various glasses, and psychology of daylighting. Wise indeed was the young architect who recently said: "Whenever I have a job which requires a large-scale analysis of the effect of solar radiation and glare on livability or working efficiency I call on the technical staffs of the companies manufacturing sun control devices, or on independent consulting engineers in the fields of daylighting, heating and air conditioning, for expert advice. I early realized that the field is much too specialized for the average architect, except in the case of very simple problems. I have neither the time nor the training to be an expert in daylighting, so I use the technicians as a sort of extension of my own office whenever a problem in sun control comes up. Thank God for them—if they were not in business, I probably wouldn't be, either."

methods and devices for sun control

This special statement should not be taken to mean that every small job calls for the special attention of the experts. It does, however, underline the complexities of the question; and the following list of techniques for controlling solar heat and glare makes even more clear the fact that a solution to the problem of sun control is not one to be worked out in an afternoon.

The most important techniques for sun control are as follows:



These deep vertical louvers, slanted to intercept the sun during the hottest season of the year, not only control both heat and glare effectively, but also give the building distinction. They would be most effective, of course, were the louvers either manually or automatically adjustable to the varying angles of the sun's radiation from season to season.
Clark and Buettler, Architects

Natural devices: building orientation, trees and shrubbery, shade of other buildings and projecting wings, geographical elements such as hills.
Around windows, outside: balconies, arcades, canopies and overhangs, arbors, eggcrate overhangs, solid horizontal and vertical fins, deep reveals, awnings of cloth or metal.
Over windows, outside: shutters, fixed or movable louvers, fixed exterior Venetian blinds, heat-absorbent storm windows or glass jalousies in addition to the regular window, Venetian screening, paint or whitewash (used mainly in greenhouses and, rarely, in factories where glare has proved an annoying problem).
The window itself: heat-absorbing glass, double glazing, glass jalousies and awnings, glass block, frosted glasses, elimination of windows entirely.
Over windows, inside: single or double cloth roller shades, slatted bamboo shades, Venetian blinds either horizontal or vertical, draperies, glass curtains, venetian screens inside casement windows.
Interiors: scientifically planned interior decoration and furnishing to reduce glare.

the windowless building

Of the above solutions or devices, only one is absolutely perfect; that is the building without any windows at all. Perhaps the time will come when—as the result of factors very different from those an architect considers in designing a building—the windowless structure will be home for all of us—probably under ground, at that. But until that time, buildings without windows are for most uses bad in every way. They tend to give their occupants a permanent feeling of claustrophobia which, in commercial and industrial structures, reduces efficiency and probably increases labor turnover.

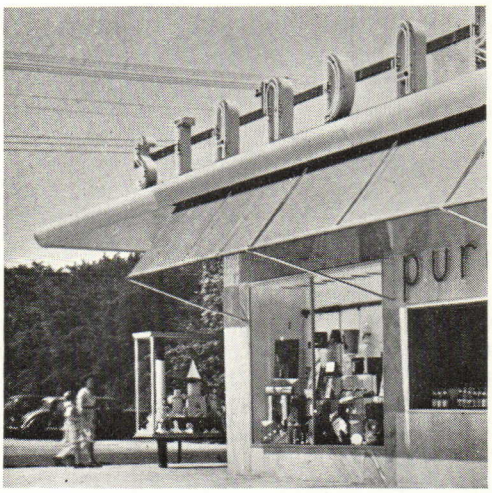
Of course, certain types of buildings, such as storage warehouses, are naturally windowless, and certain other types, such as modern department stores, can be windowless without serious side effects. Furthermore, some manufacturing processes, particularly chemical, require minutely controlled temperatures and lighting intensities which can be provided only in windowless areas. But in the case of these manufacturing plants, the processes requiring such careful controls usually can be segregated in the interior of the building, while the offices, hallways, recreation and dining rooms and even work areas not requiring such controls can be daylighted. In general, the windowless building in which human beings are supposed to work is a stupid and inhuman solution to the problem of sun control.

orientation

Buildings without windows cannot even be considered under usual circumstances. Consequently the sun itself must be faced and controlled by the architect from the very start of the design of the building. And this can best be done by beginning with intelligent orientation of the structure on its site, together with placement of wall openings in logical relationship to this orientation.

The purpose of orientation is to control by geographic means the entry of the sun into necessary wall openings. Practical orientation depends not only on the fixed angles of solar radiation at various hours of the day and various seasons of the year, but also on prevailing winds, site shape and contour, zoning and building code restrictions, relative humidities at various times of the year, relation to other buildings and to natural cover such as trees and shrubberies, and local microclimatic conditions such as air currents due to adjacent hills or slopes, humidities arising from nearby bodies of water, and so on. The average number of bright days compared with cloudy or rainy days will also be a factor in specific areas, as will the question whether summer heat or winter cold will be the most serious problem. Finally, orientation and its relation to architectural treatment, engineering costs and use of extensive substructures will be affected by the type of building use, the budgetary limitations, the personal tastes or advertising requirements of the client, and the special predilections of the architect himself.

Much help on the macroclimatic aspects of building orientation can be obtained from the United States Department of Agriculture's Yearbook for 1941, which is called *Climate And Man.* Maps showing the distribution of clear and cloudy or rainy days for various areas in the nation are included in this book, as well as much valuable data on temperature ranges winter and summer, frost dates, rainfall and snowfall averages, number of foggy days, and lengthy reports on general weather conditions for each state. For more specific data on the weather in an indi-



Left: a canvas awning supplements and becomes part of the roof overhang on this drug store in northern Ohio. *Ernst Payer, Architect; Photo by Rodney McCay Morgan.* Above: display windows in the peristyle of this clothing store are sheltered from the sun at all times by these adjustable exterior venetians. *Gruen & Krummeck, Architects Photo: Roger Sturtevant*

vidual community, the assistance of local governmental agencies concerned with the problem should be obtained. Quite probably a good deal of original research by the architect himself will have to be undertaken if a thorough job is to be done.

In view of the decisive economic and psychological gains derived from scientific building orientation, it seems obvious that much care should be taken to assure the client the best possible location of his structure and the most effective placement of wall openings in that structure. More detailed discussions of the actual problems of building orientation can be found in "Regional Climate Analyses," a series of articles inaugurated by the *Bulletin of The American Institute of Architects,* September 1949, in collaboration with *House Beautiful.*

the best sun control is from the outside

Once a building is effectively located on its site, the problem then arises as to what device or combination of devices to control solar radiation and glare should be used at its windows and window walls. The selection of methods will depend on a wide variety of factors, of course; but as far as the relative merits of any particular device goes, technically speaking, it must be realized that none is perfect. All have their defects which must be compensated for. It is the architect's job to choose those devices which will do the job he wants done best and with the least trouble and expense.

One basic principle can, however, be applied to all solar control in buildings in any part of the country: and that is, if a solar radiation control device is to control heat effectively, it must be located outside rather than inside the window. Inside devices that are useful for eliminating glare have little or no effect on heat. Indeed, many of them have a tendency to store and reradiate the sun's heat which comes through the window glass. Drapes and roller shades may or may not reduce heat, depending on the materials from which they are made, but only by eliminating or at least drastically reducing light entering the room, thus defeating half the purpose of a well-windowed building. Shades tend to store heat and reradiate it into the rooms, no matter how they are regulated. Careful interior decoration schemes, based on colors and surfaces designed to diffuse rather than reflect light, will materially reduce glare but will have little or no effect on radiant heat from the sun.

Consequently the most effective sun control devices are those which are placed on the outside of a building, or—in special cases—as parts of the outer surface of the window itself. Most important of these exterior sun control devices are structural overhangs of various sorts, heat-absorbing glass, jalousies, awnings, exterior venetian blinds, double windows, and natural planting of trees or, perhaps, vines growing on arbors.

structural sunshades

The use of structural projections over or at the sides of windows and glass walls to serve as sun control devices is most common in buildings erected in very warm climates, as in Brazil and Tel Aviv, and more recently in the so-called "solar houses" which have large walls of glass needing protection from the sun's rays, and which seem to have originated far north in Wisconsin or Minnesota. Actually, overhangs are no more and no less efficient in the north than they are in the south. They may consist of cantilevered overhangs or balconies, open eggcrate sun deflectors, deep reveals, and vertical or horizontal fins or visors, slatted or solid. To the architect the use of these devices presents a complex problem, the answer to which must be compounded out of economics, esthetics, and technology. Structural sun control devices in general add considerably to the cost of a building. On the other hand they are architecturally attractive if well used and may be included if the client can afford them and likes their appearance.

Technically, however, their value is dubious. No structural sunshade is really efficient. It cannot, by its very nature, function perfectly for more than two or three days a year, since it is designed in accordance with some optimum angle of solar radiation. When the solar angle is nearer horizontal than that, too much sun enters; when nearer vertical, the room may become gloomy. Even semi-perfect operation can be expected for only three to four weeks a year, around the time when the sun's relation to the overhang is at its most effective.

In other words, no matter how carefully the structural sun control device is designed, other devices will be necessary for a large part of every working day on the openings in walls most exposed to the sun's rays. The experience of the Longfellow Building in Washington is proof of that. Most of the overhang-protected windows in that building have in recent years also been pro-

vided with Venetian blinds—a significant comment on the general usefulness of the cantilevered sunshade.

Perhaps the only place in the building field where the structural overhang has a high esthetic value which is commensurate with its cost is in the private residence. Here the overhang can be achieved merely by extending the rafters as far out over the window area as desirable, often by means of secondary members firmly attached to the rafter itself. Though this may bring the level of daylight below the minimum required for reading fine print, it still means that the rooms so protected will be relatively cool and shaded in the summer when the sun rides high, and flooded with sunlight in the winter when it is lower in the heavens. As experience has shown, drapes, glass curtains, interior venetians or bamboo roll screens are usually installed in this type of house not entirely for sun control but also for the privacy they afford.

Similar overhangs often prove efficient and relatively inexpensive on single-story or, at most, two-story non-residential buildings, such as schools, hospitals, and commercial structures such as shopping centers.

A frequently effective type of overhang for sun protection in small buildings is the horizontal eggcrate canopy or terrace arbor which can be covered with a roll-up canvas or over which greenery can be grown for summer sun protection. Obviously this sort of overhang is ill-suited to large multi-storied buildings, but its relative inexpensiveness makes it particularly suitable for the small-budget, low structure, no matter what its use.

Most structural overhangs can only be effectively worked into the design of new buildings; they frequently stick out like sore thumbs when added to old ones. All other methods of sun control discussed below, however, can be applied either to new or old structures, although even with many of them a better effect can be achieved if the devices are planned along with the building.

awnings

One of the oldest sun control devices is the canvas awning. There are still hundreds of thousands of homes and office buildings in which individual windows are shaded from the sun by adjustable awnings, usually made of a brightly striped cloth which strikes a jarring note against the quieter background of the building itself. This type of device has decreased in popularity of recent years, not only because of the fact that its original installation becomes rather costly when it is used over the wide "picture windows" and glass walls of modern structures, but also because of the comparatively short life and high maintenance and repair costs of canvas exposed to the weather. Furthermore, if cloth awnings are dismantled at the end of each warm season, the cost of doing so in commercial buildings becomes a sizable factor. There are, of course, special situations in which canvas awnings are still acceptable, particularly in view of their relatively low first cost.

Replacing the cloth awning in many parts of the country are wood or metal fixed awnings with movable slats, or metal awnings with nonadjustable surface units which can be retracted or rolled up against the wall. The first type provides effective control of the sun since the slats can be tilted to any desired angle, admitting as much light as wanted while eliminating glare and furnishing ample ventilation. The roll-up metal awning is obviously more flexible even though minute control of the sun's rays is not as easily accomplished as with the fixed, movable-slat type. A nonretractable awning will always be a difficult element to cope with, architecturally; the retractable type does not present this problem.

Metal or wood slat awnings obviously have a much longer life than those made of canvas, which more than compensates for their original higher cost. Furthermore, they tend to reflect the sun's heat outside the room from the upper surface and to reradiate heat penetrating the material from the bottom surface, thus keeping the rooms much cooler. Canvas awnings, though fairly effective heat barriers, keep air within the room from circulating and consequently help to build up a real heat load on hot summer days.

exterior venetian blinds

Fixed exterior venetians, usually of metal but sometimes of wood, are permanently fastened over the outside surface of the window. They are quite common in the south and southwest. These devices combine good ventilation control with adequate solar heat and glare management, store protection, and burglar insurance. On the other hand, they interfere with daylighting and the view from the window, since the blind itself is fixed and cannot be pulled to the top as can interior venetians. Consequently the exterior venetian is somewhat awkward to deal with ar-

Here the old-fashioned window shutter is put to a new and attractive use, both as a sun control device and as an architectural accent. Combined with the uniquely designed roof overhang, these wood jalousies with adjustable louvers provide an inexpensive, handsome solution to the problem of controlling solar glare and heat at all times of the day.

Igor B. Polevitsky, Architect
Photo: Rada Photography

chitecturally, in terms of exterior appearance, and has its disadvantages from the interior as well, since even when the slats are absolutely horizontal they are definitely visible and turn the window area into a series of lateral stripes which are damaging to a handsome view. For this reason it seems likely that this type of venetian blind, which has only recently been introduced north of the Mason-Dixon line, will be more or less limited in application in regions of more moderate temperatures to industrial and commercial buildings where exterior appearance is not of such great importance and interior views are not as essential as comfortable and airy working conditions. One important aspect of the exterior venetian is that it much more effectively bars solar radiation on hot days than the interior type because of the fact that the heat reradiated from the bottom surfaces of the slats escapes into the outer air rather than into the room. In this they have much the same value as the awning, though, since the whole installation is right next to the window rather than away from it as is the awning, some of the reradiated heat may get into the room by mere propinquity.

This problem was solved by an excellent type of exterior venetian blind which was available before the war but which now seems to be off the market. This venetian, which was held away from the window by a metal frame so that at the bottom there was up to about three feet between it and the wall surface, could be pulled up to the top of the window when it was not wanted. When in use its slats could be controlled from inside the house to direct the solar radiation away from the room. Thus every problem of solar heat and glare control could be handled by simple manipulation of the blind. It would seem logical that a retractable outside venetian blind of the awning type with adjustable slats would find a large market if it were available today.

venetian screens

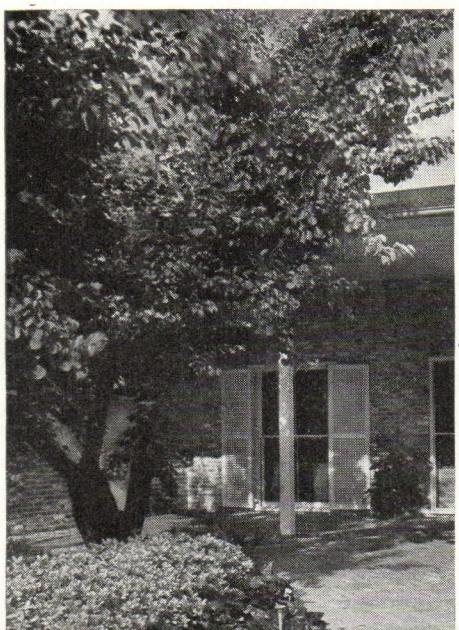
One of the newer developments in sun control from the outside of the house is the venetian screen or "shading screen" as it sometimes is called. This is a screen-like product made of very narrow strips (less than 1/16″) of extremely thin bronze or aluminum, spaced 16 to 20 strips per inch and held rigid by vertical reinforcement spaced ½″ to 1″ apart. The horizontal strips are permanently slanted outwards and downwards at an angle approximately 20° from the horizontal, so that they block a large part of the sun's direct radiation and provide a diffusion of light that prevents glare as well. Though it is several times more costly than regular screening, Venetian screens, by killing two birds with one stone (insect control and sun control) often turn out to be a real economy. It is true that they reduce visibility inside the room to some extent—more than ordinary screens—so that the view through them seems somewhat fuzzy. This of course is no defect in nonresidential installations, and even in homes can be borne with, in view of the high degree of control of the sun's heat and glare which they provide.

trees

From many points of view the best method of controlling the sun, when it can be made use of, is practically free. Never was there a better sun-control than a tree, which needs no painting, washing, adjustment, seasonal removal or replacement, or repair. Plant it wisely, tend its growth when necessary and you have an ideal natural sunshade for low buildings. Many architects recently have been proving to their own satisfaction and that of their clients that a broad-leafed, deciduous tree provides better sun control than any type of manufactured device, particularly the structural sunshade. Such a tree affords ample shade in the summer when it is most needed, permits practically all of the winter sunlight and sun heat to enter the building through the leafless branches, and—perhaps as important as anything else—gives the building a human, natural, livable environment far pleasanter and more restful than the mechanical, chilly efficiencies of masonry, metal or painted wood.

Particularly for institutional and residential buildings sufficiently low to take advantage of natural shade, sun control should be provided by trees whenever possible. Indeed, many commercial and industrial buildings now in existence gain a high degree of sun control around the lower floors from the oaks, elms, and maples which a previous generation planted. The major difficulty with the tree as an immediate means of sun control in new buildings is that small ones do not actually control, and large ones are likely to be expensive. Even so, the cost of trees large enough to shade a low building will in all likelihood be less than the cost of efficient manufactured sun control devices.

"Sun Control Methods: Part 2" will be published in the June 1950 issue of P/A.



Visible proof that nature can create the most effective of all sun control devices in the form of foliage. It is true that the architects have provided a wide roof overhang, but note that the tree completes the solar control which the overhang achieves for only about two-thirds of the window's height.
Wurster, Bernardi & Emmons, Architects
Thomas D. Church, Landscape Architect
Photo: Roger Sturtevant

Photos: Philip Boyer, Jr.; courtesy of The Preload Corporation

Prestressed Concrete Bridge
Philadelphia, Pennsylvania

Figure 1, below.

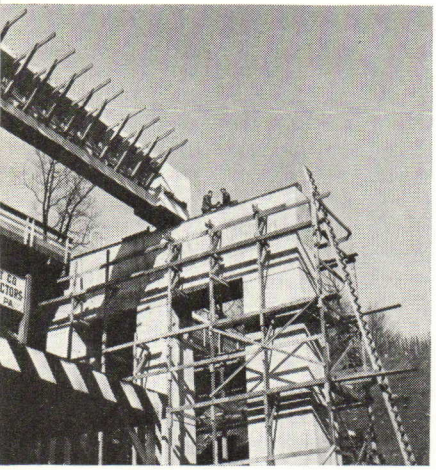


Figure 2, above.

The twenty-seven girder super-structure of Philadelphia's new Walnut Lane Bridge, first prestressed concrete bridge in North America, is about 70 percent completed. In addition to conducting an extensive testing program and the construction of falsework and formwork, four of 13 girders of the principal 160 foot span are in place and eight members of the two 74 foot approaches have been permanently anchored. Although periods of adverse weather have somewhat retarded the erection of this structure, several advances in construction methods have produced significant savings in time. The most dramatic development has been in the method employed to move the girders to their permanent locations. Contrary to conventional bridge construction systems where structural ribs are cast and the *falsework* moved to a new position, at Walnut Lane the falsework remains fixed and the *girders* are moved into position. Such a procedure is permissible, as all members are simply supported. Having been prestressed and the forms removed, the girders are slid along greased timber runways mounted atop the piers of the bridge. Steamboat ratchets whose ends are attached to greased base plates under the ends of the girders have also facilitated this movement. Figure 1 shows a principal girder being "launched" along the top of a pier; a workman operates a ratchet in Figure 2. All of these prestressed members are extremely flexible considering their size; Belgian engineers, advisors to the builders, had warned of intense vibrations set up during movement. On some European jobs, it was reported that laborers refused to work on or near similar girders because of the magnitude of these vibrations. However, by employing the greased base plate and timber runway method, the co-efficient of friction was reduced to one-half of one percent and practically no vibration was experienced.

Remarkable improvements were also accomplished in the method of stressing the wires. As the girders were poured, steel bolts which would later support a jig-plate were placed around each wire cavity opening. When the concrete gained strength, a steel frame was bolted to this plate. The frame supports a hydraulic jack whose piston can be forced forward or backward with equal ease, either to stretch a pair of wires or to compress the jack quickly in order to prepare it for a subsequent stretching operation. A movable plate on the rear of the frame supports the jack and allows it to be adjusted easily to receive any pair of wires within the core. All wires in one cavity could be stressed without removal of the frame from the jig plate. It has been estimated that this improvement has made the stretching process about six times faster. In Figure 3, one observes two cores of stressed wires held in place by sandwich plates and wedges. Grout will cover these cores.

Another important advance was in the method developed to grout the stressed wires, both to protect them from corrosion and to develop bond within the girder itself. Easily accessible vent holes were strategically placed along the sides and ends of the girders, paralleling the paths of the cavities. Working from the center out, each cavity was filled with grout; as the air was vented and grout appeared at each opening, the vent hole was plugged.

A different method was devised to space the wires within the cavities. The many holes in the original spacer plates required countless threading operations. A system of perpendicular combs, which permitted wires to be layed in position rather than threaded, speeded this work by as much as eight times. Figure 4 shows a group of the original spacer plates contrasted with one spacer comb standing in vertical position.

In addition to designing this bridge in collaboration with the Engineering Department of the City of Philadelphia, The Preload Enterprises, Incorporated, New York, are also the subcontractors for the superstructure.

B.H.H.

Below: close-up of girder for principal span.

Figure 3.

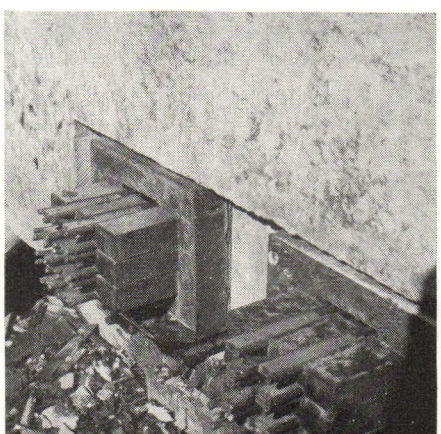
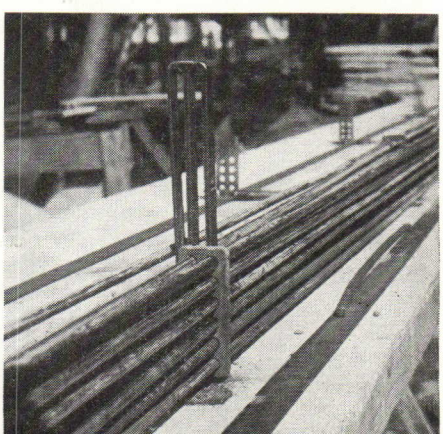


Figure 4.



p/a products

air and temperature control

Reciprocating Compressors: large, flexible units, developed to meet commercial air conditioning and refrigeration application needs from 100 to 150 hp. in single units, and designed to operate with variety of refrigerants. Can be used direct or belt driven, powered by motor, gas, or Diesel engine. Minimum weight and vibration permit units to be mounted on upper floors without massive foundation. Carrier Corp., Syracuse, N.Y.

Axial-Flo Roof Exhauster: low, streamlined unit of welded heavy steel plate construction, for all types of commercial and industrial ventilation. Motor-driven fan in weatherproof housing with hinged cover permitting easy access for inspection and maintenance. Completely assembled, with motor, frame, housing, and safety switch. Chicago Blower Corp., 4558 W. Congress St., Chicago 24, Ill.

Electric Radiant Heating Panel Systems: panels made from non-deteriorating, resin-bonded asbestos with embedded and hermetically sealed nickel-chrome element wires; units being introduced for space heating, commercial, and industrial uses including drying and heating in pottery, paint, glass, photography, and other fields. Temperature control by individual thermostat in each room. Portable screen panels available in decorative designs to fit any motif. General Radiant Heater Co., Inc., 101 Park Ave., New York, N.Y.

Low Cost Heating System: new oil and gas heating unit for small homes. Fully automatic forced circulated warm air; takes only 22-1/16" x 20-1/4" floor space; inexpensive to install, economical in fuel consumption. International Oil Burner Co., Furnace Div., 3800 Park Ave., St. Louis, Mo.

Filter Breez: all-metal portable cooling unit filters dust, dirt, pollen; brings cool air into room; efficient operation accomplished by means of twin blowers; air flow controlled by turn of variable speed switch; uses standard replaceable filters. Lau Blower Co., Dayton 7, Ohio.

Filter-Fan: eliminates kitchen cooking vapors and smoke. Unit, for use in residences and apartments, utilizes principles and equipment proven effective in railroad dining car installations. Consists of two main units; lifetime washable filter and centrifugal blower powered by 1/30 hp. air-cooled electric motor. Available in four styles. Marvin Mfg. Co., 3071 E. 12 St., Los Angeles 23, Calif.

National Packet: automatic heating unit includes steel boiler of new design, tankless heater of 180 gal. per hr. capacity for domestic hot water supply, controls for steam or hot water heating, and other regulating devices. For installation in homes, stores, motels, and wherever small-to-medium heating load and economy are necessary. National Radiator Co., Johnstown, Pa.

Cooling Towers: "induced draft" type claimed to save up to 95% in use of water in air conditioning; equipped with outside flange-type bearings for easy servicing; available with separate direct-drive pump motors for special job requirements. Units completely hot-dipped galvanized for permanent rust resistance. In 3, 5, 7½, and 10 ton capacities. U.S. Air Conditioning Corp., Como Ave., S.E. at 33 St., Minneapolis, Minn.

doors and windows

Auburn Window Visors and Door Canopies: constructed of 24 gage steel waterproofed with rust resistant compound. Window visors designed in stock sizes to fit all width windows as well as windows in continuous row; aligning device attached to supporting arms of awning; louvers between steel panels admit air and light. Canopies match visors, are 48" wide by 39" long, require no flashing or caulking. Auburn Shank Co., Auburn, N.Y.

Hollow Metal Doors, Frames, and Sliding Closet Doors: welded steel construction throughout, in wide range of standard sizes and styles. No need for trimming or mortising; shipped in single pieces, requiring no assembly on site; quick, accurate installation. Styled for low-cost, modern housing. Diebold, Inc., 1411 Fifth St., S.W., Canton, Ohio.

Tutch Latch: improved, concealed door latch; light pressure from finger or elbow on door panel releases latch, permitting compression spring to swing door open. No handles, knobs, or other bulky hardware required; easily installed. Phillips Tutch Latch Co., 40 Exchange Pl., New York 5, N.Y.

electrical equipment, lighting

Incandescent Lamp: completely new type employing unique mushroom shape and enamel finish to form combined light source and fixture in one unit. "Revolutionary" shape directs two-thirds light upward, creating pleasing indirect lighting effect; soft-toned enamel finish on under-portion mellows light directed downward. Available only in 50w size. General Electric Co., Nela Park, Cleveland 12, Ohio.

Recessed Incandescent Fixtures: new method of mounting claimed to reduce installation costs more than $2 per fixture. NE code minimum of 4' of asbestos wire not required, thus permitting rubber covered wire to be run directly to fixture. Carpentry work eliminated by mounting ears on boxes and use of bar-hangers stapled to joists. Fixtures shipped complete, with junction boxes, bar-hangers, and all items needed for proper installation. Kirlin Co., 3435 E. Jefferson Ave., Detroit 7, Mich.

Portable Electric Plant: 400w, 60 cycle, a-c electric generating unit will operate for 5 hours on single gallon of gasoline. For homes, trailers, small farms, stores, and shops. Available in manual or remote starting models. D. W. Onan & Sons, Inc., 498 Royalston Ave., Minneapolis, Minn.

Weatherproof Column Light: for gas stations, parking places, playgrounds, and other installations needing high lighting intensities over wide area. Heavy steel porcelain-enameled reflector, 20½" in diameter, with overhanging skirt to cut glare to minimum; all wiring fully enclosed; built-in weatherproof aluminum splice box to which supplementary spots or floods can be added. Stone Mfg. Co., 489 Henry St., Elizabeth, N.J.

Trimline: new commercial series of matching fluorescent lighting fixtures, providing flexibility, simplified maintenance in offices, schools, stores, etc. Each fixture equipped with louver shielding, decorative end pieces, and plastic shielding panels running full length on both sides of fixture. Available in 2- and 4-lamp units, with either standard or instant start lamps, in 4- and 8-foot lengths. Series can be mounted individually or in continuous rows. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N.Y.

insulation

Fiberglas Textured and Perforated Acoustical Tiles: both products, naturally beveled, rated "incombustible" when tested by procedure outlined in Federal specifications. Noise reduction co-efficients range up to 85%; light weight, dimensionally stable, high thermal insulating efficiency; easy to clean and maintain. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo, N.Y.

interior furnishings

Hosken Coffee Table and Serving Trays: table size: 20" x 30"; black, red, gray, or yellow alcohol resistant lacquer on pressed wood; light wood edging, birch legs. Serving trays exactly half table size, same color, finish, wood edging; each tray has 4 small rubber feet and fits neatly onto table frame. Hosken, Inc., 10 Roanoke Ave., Boston 30, Mass.

Stadium Chair: for use in arenas, field houses, drive-in theaters, etc. Wood slats in back and seat in natural color or durable enamel finish; baked enamel finish on iron standards. Chair so constructed as to eliminate all tearing and pinching hazards. Ideal Seating Co., 555 Ann St., N.W., Grand Rapids, Mich.

Laneux Carpeting: unusual pebbled-effect weave, deep pile, hand-woven fabric available in any color, size, shape; hand-carved designs of customer's own choosing reproduced on order. Nye-Wait Co., Inc., Auburn, N.Y.

Rock-a-File Modular Office Furniture and Equipment: integrated units—desks, file cabinets, bookcases, cabinets, waste receptacles—of all-steel, modern construction and design. Rockwell-Barnes Co., 35 E. Wacker Dr., Chicago, Ill.

sanitary equipment, water supply drainage

Deep Well Centrifugal Pumps: recently improved to simplify replacement of rotary seal. Seal now contained in single cartridge easily and quickly removable and replaceable as complete unit without removing pump from well, breaking pipe connections, or disassembling pump. Flint & Walling Mfg. Co., Inc., Kendallville, Ind.

M-VB #16 Float Valve: provides unusually fast refill, putting 4 gal. water in tank in just over one minute, at pressures ranging from 25 lbs. to as high as 150 lbs. with positive valve shutoff throughout entire pressure range. Will fit most plumbing installation requirements. Scoville Mfg. Co., Waterville 14, Conn.

Act-O-Matic: automatic self-cleaning shower head, incorporating especially designed spray disc that delivers shower of maximum efficiency, at same time washing out all sand particles and other water-borne substances that clog ordinary shower heads. Chrome-plated unit, with ball joint and volume control. Vandal-proof models available. Sloan Valve Co., 4300 W. Lake St., Chicago 24, Ill.

Stonesteel Electric Water Heaters: made with steel tanks lined with hydraulic stone, offering maximum protection against tank rust and corrosion. Available in both round and table top models, in suitable sizes for industrial, home, and other building uses, for localities where corrosive water conditions cause rust and subsequent leaks in ordinary tanks. Stone lining does not affect taste or color of water. Sepco Corp., Pottstown, Pa.

Packaged Bathroom: compact, all-steel unit combines storage cabinet, generous-sized lavatory, and dressing table; cabinet finished in baked enamel, either white or one of three pastel colors; wash basin finished in acid-resistant, triple-coated porcelain enamel; top is laminated Formica plastic. Size: 45" wide, 20" deep, 32" high. U.S. Porcelain Enamel Co., 4635 E. 52 Dr., Los Angeles 22, Calif.

Child's Drinking Fountain: can be mounted halfway down either side of standard water cooler for convenience of small children. Made of white vitreous china, with automatic stream height regulator and antisquirt bubbler. Westinghouse Electric Corp., Box 2099, Pittsburgh, Pa.

specialized equipment

Alert Alarm: inexpensive but effective burglar alarm, powered by self-contained electrical device and requiring no wiring. Unit easily attached to door or window, will sound continuous shrill alarm at slightest tampering or opening of door or window. Plastic casing in ivory or walnut finish. Electromagic Co., 1003 Penn Ave., Pittsburgh 22, Pa.

"Plug-In" Automatic Electric Clothes Dryer: low-voltage (115v) tumble-action dryer designed to operate as plug-in appliance in conjunction with Frigidaire's automatic clothes washer. Equipped with special timer to eliminate redialing for extra drying time. General Motors Corp., Frigidaire Div., Dayton 1, Ohio.

surfacing materials

Wonder Wall: vinyl wall covering available in 8 colors, in 2 reproductions of wood grains: prima vera in blonde, gray, tan, dark, and mahogany; walnut in blonde, dark, and gray; also in ten pastel shades. Resistant to abrasion, alcohol, alkali, and general wear; flexible and easy to handle; especially suitable for homes, offices, restaurants, and hotels. Pulpaper Co., Plastic Div., 52 Vanderbilt Ave., New York 17, N.Y.

p/a

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

Bulletin describing suspended and floor types of all-year-round air conditioners. Capacities, ratings, descriptions of parts, illustrations. Also price list and data bulletin for steam coils. Marlo Coil Co.:

1-17. Marlo Air Conditioning Units (Bul. 409)

1-18. Marlo Steam Coils (234a)

1-19. Zephair Fans, AIA 30-D-1 (925), 12-p. booklet covering line of fans for home and industry. Types, applications, capacity requirements, dimensions tables, specifications. Hunter Fan & Ventilating Co., Inc.

1-20. Hydrotherm, AIA 30-C-1, 4-p. bulletin on automatic gas heating plant for residential hot water heating systems. Construction, operation, capacity range, applications to hot water heating systems, specifications, diagrammatic drawings. Hook & Ackerman, Inc.

1-21. A Million Dollar Idea (300), 4-p. illus. folder and loose sheet describing combination radiant and forced warm air system designed exclusively for basementless houses. Advantages, specifications, comparisons chart. International Oil Burner Co.

1-22. Kewanee Square-Heat Type "R", AIA 30-C-1 (Cat. 88-8), 8-p. illus. booklet on redesigned and simplified boiler, made in 8 sizes to heat 900 to 3000 sq. ft. of steam radiation with mechanical firing, or 740 to 2480 sq. ft. with hand-fired coal; additional reserve capacity for sub-zero weather. Construction, advantages, dimensions, specifications charts. Kewanee Boiler Corp.

★ **1-23. The Herman Nelson Unit Ventilator** (Bul. 2853), 16-p. illus. booklet describing ventilating unit consisting of fan and motor assembly, heating assembly, recirculating and outdoor air dampers, filter, cabinet, and outdoor air intake; especially designed for classrooms. Method of operation, cross-section views, advantages. Herman Nelson Corp.

1-24. Kitchen-Type Oil Burners (AD 772), 6-p. illus. folder illustrating kitchen cabinet type oil burner containing all necessary equipment and controls for automatic residential heating and water heating; unit also provides added counter space. Advantages, cut-away views, outline dimensions, ratings, specifications. Timken-Detroit Axle Co., Timken Silent Automatic Div.

CONSTRUCTION

3-11. Metal Lath and Accessories for Fire-safe Construction, AIA 20-B-1, 48-p. illus. manual. Advantages and uses of metal lath, corner bead, other accessories; furring, fireproofing, solid and hollow partitioning systems, metal trim and bases, steel roof deck, access doors, louvers, roof ventilators, and miscellaneous products. Specifications, application methods and photos, installation sketches. Inland Steel Products Co.

Catalog illustrating structural light diffusing glass, both wired and plain. Maximum sizes and approximate weights, patterns, photos. Booklet offering typical installations of structural corrugated glass. Specifications, installation methods, details, technical data. Mississippi Glass Co.:

3-12. Specify Mississippi Glass, AIA 26a-3-5-6 (Cat. 50)
3-13. Structural Corrugated and Structuralite Glass

★ **3-14. Built-Up Roofs and Flashings,** AIA 12-B-1 (Cat. 50), 124-p. illus. catalog reviewing five main types of bonded built-up roofing construction, materials for each type, giving specifications to meet any conditions. Application drawings, suggested construction details, requirements for applying bonded roofs, thumb index, contents table. Ruberoid Co.

3-15. Sanymetal Toilet Compartments, AIA 35-H-6 (Cat. 87), 20-p. illus. catalog showing five types of toilet compartments and toilet room environments. Construction details, specifications, hardware, description of materials used, color chart. Other products include hospital cubicles, shower cabinets and stalls, and dressing room compartments. Sanymetal Products Co.

3-16. Symons Forming System of Wall Form Construction, 4-p. illus. folder. Describes wall-forming system utilizing panel forms, with tie rods anchored at sides and acting as spreaders, eliminating 75% of bracing required by old type of forms. Advantages, method of operation, brief descriptions of other products for concrete work. Symons Clamp & Mfg. Co.

3-17. Clear Span Teco Trussed Rafters, AIA 19B, 8-p. illus. booklet on advantages of clear-span trussed rafter construction for modern homes as compared with conventional roof and ceiling framing. Fabrication, assembly, description of materials used in rafter construction, typical installations. Timber Engineering Co.

DOORS AND WINDOWS

4-18. Aralum, 6-p. illus. folder presenting aluminum storm and screen window unit for all-weather service throughout year. Advantages. Alumatic Corp. of America.

Two illus. folders, one giving types, advantages, and specifications for clock spring sash balances, the other describing improved features of spiral sash balance. Caldwell Mfg. Co.:

4-19. Clock Spring Sash Balances, AIA 27A1
4-20. Introducing Spirex

4-21. Diebold (AL-2454-849), 4-p. pamphlet containing fire ratings and architect's specifications for fire-insulated vault doors and file room doors. Diebold, Inc.

Two illus. folders on improved recessed door for residences, commercial and institutional buildings; noiseless, fingertip action; steel-scissor mechanism does away with floor tracks and overhead hangers. Advantages, diagrams, installation directions. Dorflo Mfg. Corp.:

4-22. Floating Doors, AIA 27-A
4-23. The Improved Recessed Door

4-24. Woodco Windows, AIA 19-E-1, 11-p. illus. booklet on weather-stripped wood windows operating without weights, cords, or pulleys. Advantages, specifications, details, styles. General Woodcraft Co., Inc.

4-25. The New Morrison Roly-Door (Bul. D50-1-A), 4-p. pamphlet describing all-steel overhead residential garage door; design should conform to all styles of architecture. Advantages, specifications. Morrison Steel Products, Inc.

4-26. Shower Doors, Tub Enclosures, Shower Enclosures (Vol. I-XLVIX), 6-p. illus. brochure and two installation instruction sheets. Units constructed of Permalume (electrolytic process combining durability of Alumilite process with bright mirrorlike finish) and highest grade of glass rubber-mounted at all points of contact. Styles, sand-carved glass designs, price list. Shower Door Co. of America.

4-27. Weslock, AIA 27-B (Cat. 4902), 4-p. illus. folder presenting line of brass or bronze finished, cylindrical door locks, cabinet pulls and knobs. General specifications, shipping weights. Westwood Mfg. Co.

ELECTRICAL EQUIPMENT, LIGHTING

5-12. Lighting Up the Little Red Schoolhouse! Portfolio containing technical data sheet and photos of typical classroom fluorescent lighting installations. Day-Brite Lighting, Inc.

Bulletin describing automatic dead-end for use with neutral-supported type of service drop for tensions up to 1200 lbs. Other bulletin offers line of automatic insulating line splice sectionalizers for copper conductors. Construction, types. Electroline Co.:

5-13. Electroline Anchorage
5-14. Automatic Insulating Line Splice Sectionalizers

5-15. A New School and Office Luminaire, AIA 31-F2 (A 5-1), 8-p. illus. bulletin on fluorescent lighting fixtures with aluminum, plastic, or steel side panels, available in 4′ or 8′ sections. Photometric data, specifications, description and uses, room index, contents table. Pittsburgh Reflector Co.

5-16. The A, B, C Plan for School Lighting (B-4556), 20-p. illus. booklet offering solutions to problems in planning of school lighting. Sample lighting layouts, selection of fluorescent and incandescent fixtures, approximate area per luminaire. Westinghouse Electric Corp.

FINISHERS AND PROTECTORS

6-4. Sight Perfection (F247-ONM-845-A.C.), 12-p. illus. booklet on selection of interior color schemes for classrooms. Typical examples in color, specifications, list of paints for all uses. Glidden Co.

6-5. Modern Maintenance, 38-p. illus. booklet covering line of floor finishes, wood seals, waxes, hand soaps and soap dispensers, disinfectants, spray insecticides, roof maintenance coatings, special paints, floor scrubbing and polishing machines; other maintenance equipment. Descriptions, uses. The Hillyard Co.

INSULATION (THERMAL, ACOUSTIC)

9-14. How to Select an Acoustical Material (AD-21-1249 B), 14-p. illus. booklet. Discusses problems of acoustical treatment, special requirements, types and characteristics of different sound-conditioning materials, methods of installation. Armstrong Cork Co.

9-15. Fissuretone (5114), 12-p. illus. booklet on two types of incombustible mineral fiber tile for sound absorbing purposes. Typical installation photos, absorption co-efficients and specifications of test samples. Celotex Corp.

9-16. How to Have Year 'Round Comfort (A-51), 24-p. illus. booklet on advantages and properties of mineral wool insulation for home application. Eagle-Picher Co.

9-17. Lockport Lo-K, 4-p. illus. folder describing insulating material made of flameproofed cotton backed with tough, water-resistant paper acting as vapor barrier; low thermal conductivity, with "K" factor of .24. Advantages, installation, commercial and special uses, laboratory tests. Lockport Cotton Batting Co.

★ **9-18. Sisalkraft Products,** portfolio containing 28 specification sheets and 4 folders with samples of building paper, including heavy kraft paper backed with copper for use in concealed flashing, and reflective insulation material reinforced with steel-like sisal fiber serving also as moisture vapor barrier. Uses, application drawings, availability. Sisalkraft Co.

SANITATION, WATER SUPPLY, DRAINAGE

19-14. Waste King Pulverator (A 34822-CF), 4-p. illus. folder describing electrically operated garbage disposer that eliminates all food waste, including bones, fruit pits, etc. General information, advantages, dimensions, installation views. Given Mfg. Co.

19-15. Dependable Hot Water at Less Cost (F554), 4-p. illus. folder. Describes two types of automatic electric water heaters, available in wide range of sizes for every requirement. Construction features, capacities, dimensions. Sepco Corp.

SPECIALIZED EQUIPMENT

19-16. School Wardrobe, AIA 28B 33, 8-p. illus. booklet on all-steel school wardrobe unit consisting of five-doored wardrobe, adequate for 40 pupils, teacher's locker, supply closet, and bookcase; cork, slate, or process slate may be applied to all except bookcase doors. General data, working drawings, specifications. Austral Sales Corp.

19-17. Playground Equipment (Cat. J), 59-p. illus. catalog. Comprehensive line of standard playground equipment includes many types of swings, merry-go-rounds, parallel bars, slides, trapeze sets, sand boxes, volleyball and tennis nets, etc. General information, dimensions, parts and fittings, freight rates, contents table. J. E. Burke Co.

19-18. Proscenium Treatments, AIA 35-A-1 (Bul. 25), 12-p. illus. bulletin on stage equipment, including contour curtains, curtain controls and tracks, motorized band cars, orchestra lifts, disappearing microphones, other standard items. J. R. Clancy, Inc.

19-19. Frigidaire (GA-2205), 8-p. illus. brochure covering line of refrigerators, electric ranges and water heaters, kitchen cabinets and sinks, window air-conditioners, automatic washers, and other home appliances; also self-contained store-type air conditioners, electric dehumidifiers, and water coolers. Exterior dimensions. General Motors Corp., Frigidaire Div.

SURFACING MATERIALS

19-20. Picture Your Floors and Walls in Tile-Tex (C-9), 18-p. illus. catalog. Full color photographic illustrations of both asphalt and plastic-asbestos floor and wall tile in model home installations. Color chart, tile dimensions, brief descriptions of cove base and maintenance products for tile floors and walls. Flintkote Co., Tile-Tex Div.

19-21. Wood and Marble Patterns (75491), 4-p. illus. folder showing new line of plastic-finished wall paneling in wood and marble patterns for residential, commercial, and public buildings. Pattern charts in color, typical installation photos, moldings, installation accessories. Marsh Wall Products, Inc.

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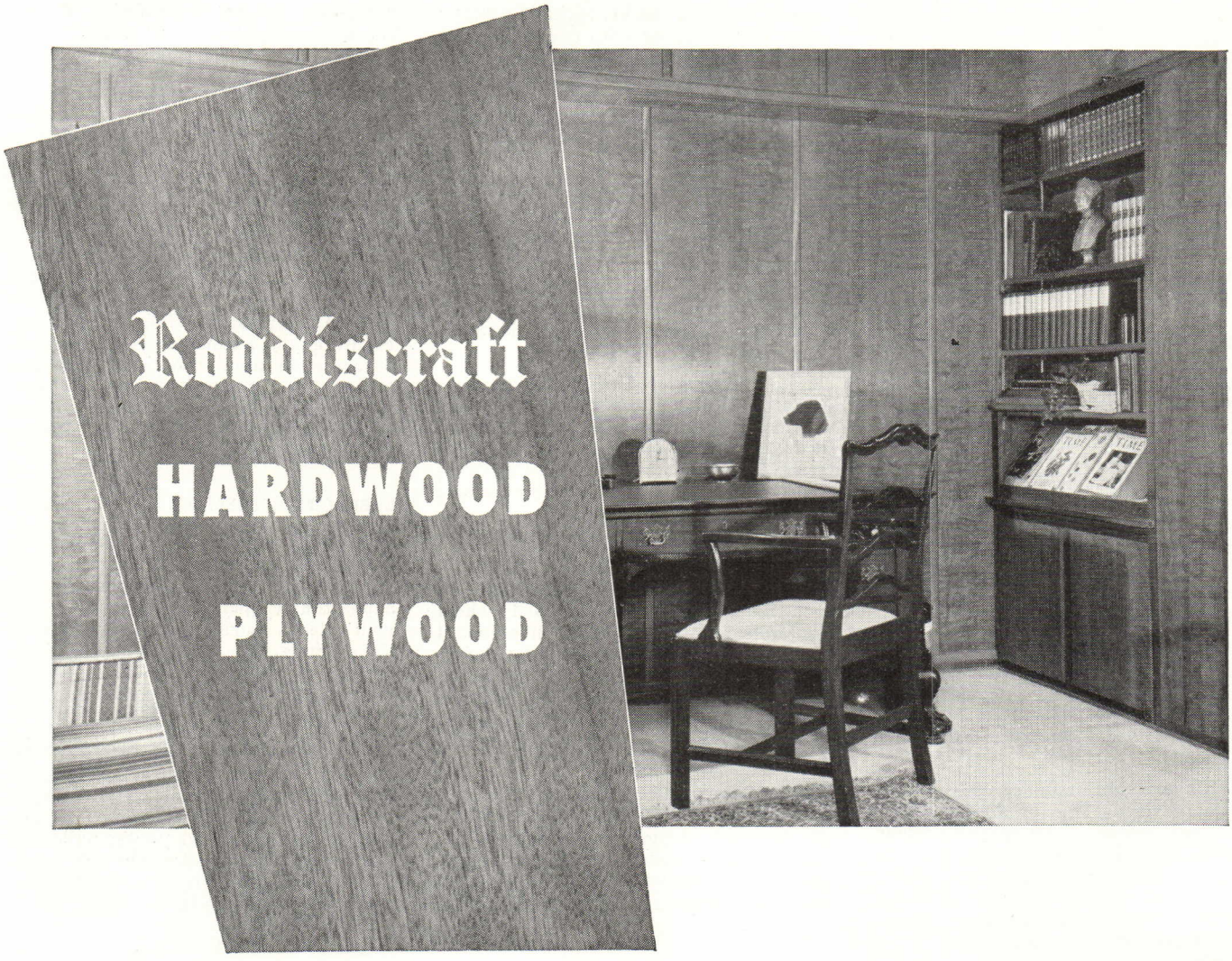

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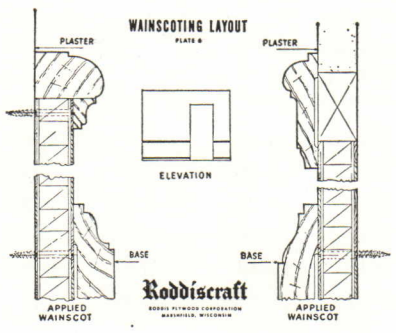

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Roddiscraft

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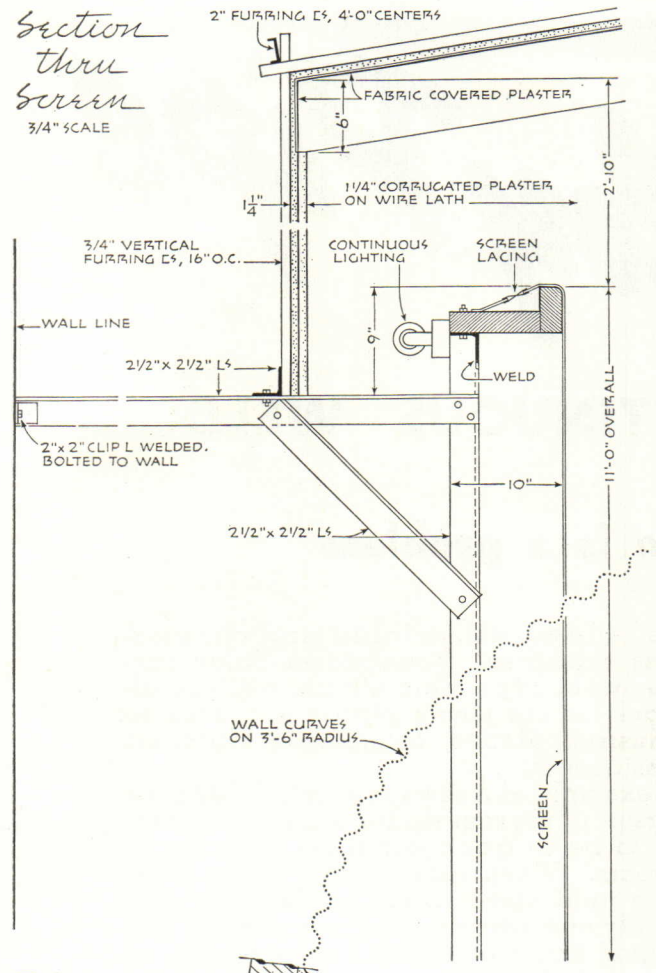
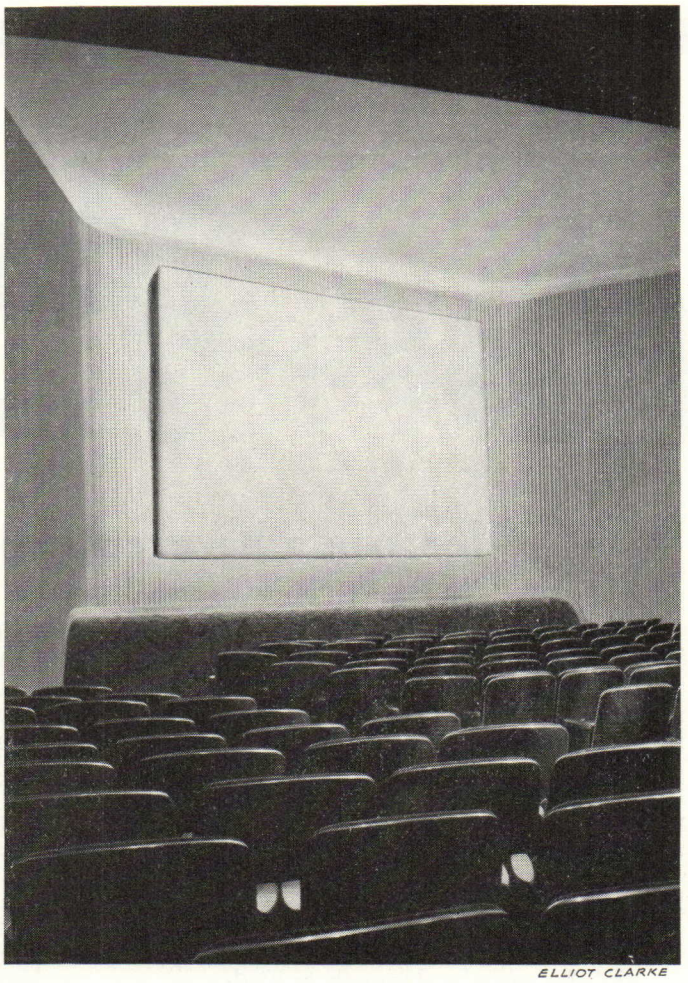
Marshfield, Wisconsin

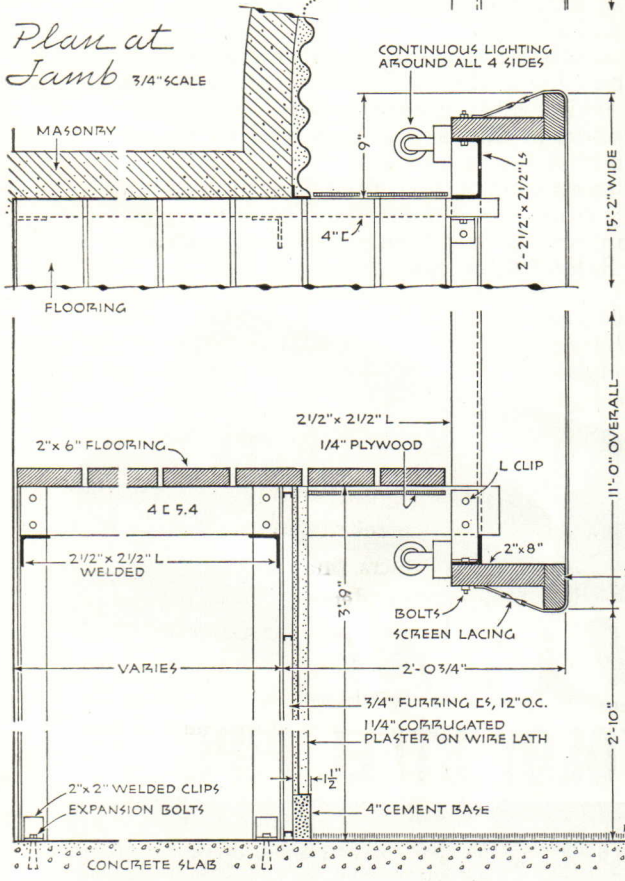
Section thru Screen
3/4" SCALE

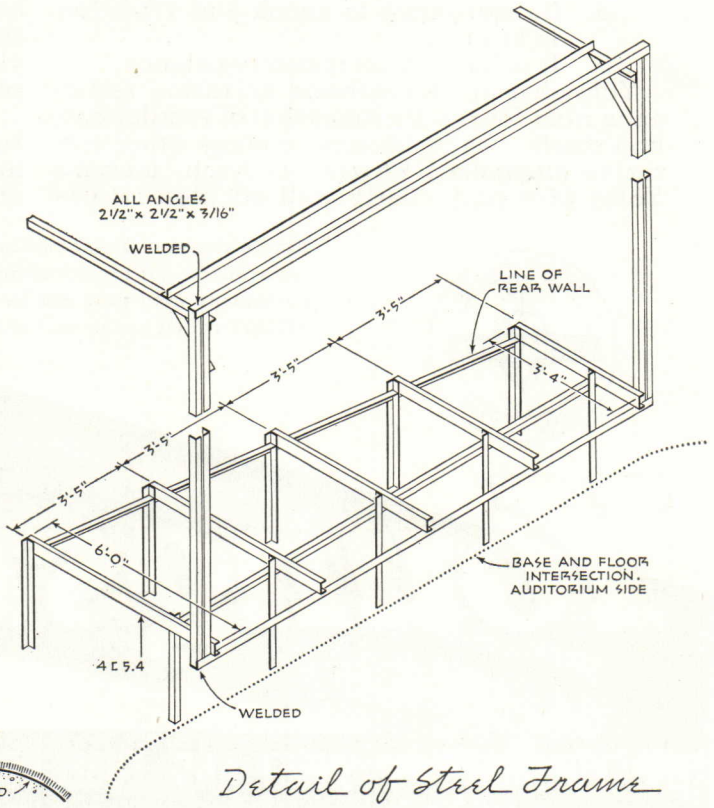




ELLIOT CLARKE

Plan at Jamb 3/4" SCALE





Detail of Steel Frame

ISLAND THEATER, Bermuda

SCHLANGER, HOFFBERG, REISNER & URBAHN ARCHITECTS

Now... Yoloy Pipe

CONTINUOUS WELD

for use where corrosion is a problem

FOR fifteen years, Yoloy steel has been manufactured as Seamless pipe, sheets, plates and structural members. Yoloy is used in the oil, mining, railroad, chemical, trucking and other industries where resistance to corrosion and abrasion are a problem and lighter weight construction is important. Now this same unique nickel-copper low-alloy steel is available as continuous weld pipe.

Yoloy continuous weld pipe has these outstanding characteristics:

1. It is easy to weld,
2. It bends and fabricates readily,
3. Its tensile strength is high,
4. It is resistant to abrasion,
5. Its resistance to shock and vibration is high,
6. It is high in corrosion resistance.

Yoloy has an atmospheric corrosion resistance from four to six times that of regular carbon steels. Its resistance to many other corrosive elements likewise is high, making Yoloy pipe particularly well adapted for use in the railroad, oil, mining and chemical process industries. Youngstown Yoloy continuous weld pipe also affords distinct advantages for use where piping is concealed in industrial plants, commercial buildings and residences.

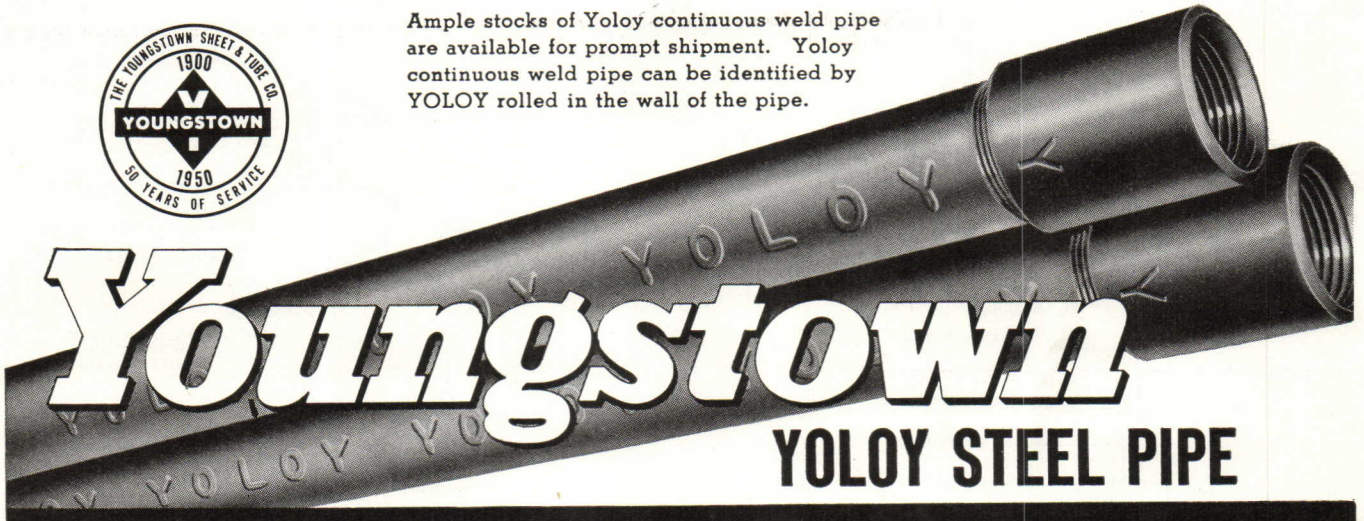
For example, at a sewage plant, Yoloy pipe immersed in the sour sludge of a digester was found to be in good condition after nearly four years. When repairs were made to replace a mild steel tripod holding the pipe after only one year's service, it was found that the tripod had been almost entirely eaten up by the acid sludge.

Yoloy continuous weld pipe installed in brine lines from the wells at a salt plant is still in service after several years. Pipe previously used in this same line had to be replaced 3 or 4 times a year.

Other examples of the unusual service given by Yoloy pipe can be cited. For further information, write or phone the Youngstown District Sales Office nearest you.

THE YOUNGSTOWN SHEET & TUBE CO. 1900 YOUNGSTOWN 1950 50 YEARS OF SERVICE

Ample stocks of Yoloy continuous weld pipe are available for prompt shipment. Yoloy continuous weld pipe can be identified by YOLOY rolled in the wall of the pipe.



Youngstown

YOLOY STEEL PIPE

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy 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 homes in all price ranges can have pegged oak floors

For years, pegged oak floors laid in random-widths have meant luxury and quality to style-conscious home owners. But the high cost of installation has limited their use to higher priced homes.

Now Bruce has developed the new Ranch Plank Floor that is moderate in cost because it's pegged and completely finished at the factory and is installed exactly like strip flooring. The alternate 2¼″ and 3¼″ strips give the beautiful decorative effect of a random-width plank floor. But Ranch Planks have none of the installation problems and expansion hazards of wide oak planks.

Architects and interior decorators praise the new Ranch Plank Floor for all types of homes and apartments. Owners say it's one of the most admired features of their homes.

Give *your* homes this plus value that lifts them out of the ordinary class. See our catalog in Sweet's 1950 File. For complete data and new booklet with color photographs of Ranch Plank Floors, write: E. L. BRUCE CO., MEMPHIS 1, TENN.

Bruce Ranch Plank Floor

BRUCE

IT'S PEGGED AND FINISHED AT THE FACTORY

How to save money for your clients on ROOFING and SHEET METAL WORK

This chart is designed as a time-saver for you, a money-saver for your clients. You can determine at a glance the suggested gauges of Monel® Roofing Sheet for principal sheet metal building applications.

Keep this chart for ready reference

APPLICATION	U.S.S. GAUGE	THICKNESS IN INCHES
Flat Seam Roofing	25	.021″
Standing Seam Roofing		
Pans (20″ Wide)[1]	26	.018″
(24″ Wide)[1]	25	.021″
Valleys	26	.018″
Eaves	24	.025″
Batten Seam Roofing		
Pans (20″ Wide)[1]	26	.018″
(24″ Wide)[1]	25	.021″
Cover Strips	26	.018″
Valleys	26	.018″
Eaves	24	.025″
Cleats	26	.018″

[1] *Indicates width of Sheets not width of Pans.*

APPLICATION	U.S.S. GAUGE	THICKNESS IN INCHES
Thru Wall Flashings[2]		
Flashings	26	.018″
Counter, Base and Cap Flashings		
Counter Flashings	26	.018″
Cap Flashings	26	.018″
Base, over 10″ width	25	.021″
Base, 10″ and under	26	.018″
Gutters[3]		
Gutter Linings		
36″ Girth and smaller	25	.021″ min.
36″ to 48″ Girth	24	.025″ min.
48″ Girth and larger	22	.031″ min.
Molded Gutters	25	.021″
Hung Gutters	26	.018″
Gutter Expansion Joints	26	.018″

[2] *A patented, interlocking thru-wall flashing is available from Keystone Flashing Co., Philadelphia, Pa.*

[3] *Thicknesses suggested are minimum and heavier gauges may be indicated depending upon design and proposed method of installation.*

(NOTE: For replacement work where expansion joints and downspouts are more than 40 feet apart, 22 ga. (.031″) Monel should be considered.)

APPLICATION	U.S.S. GAUGE	THICKNESS IN INCHES
Leaders		
Downspouts	26	.018″
Heads	26	.018″
Straps	26	.018″

APPLICATION	U.S.S. GAUGE	THICKNESS IN INCHES
Valley Flashings		
With Wood or Asphalt Shingles	26	.018″
With Slate or Tile Roofing	24	.025″
Expansion Joints		
Exterior Walls	26	.018″
Roof Curbs	25	.021″
'V' Cover and Floors	26	.018″
Eaves Flashings	26	.018″
Louvers (Stationary)[4]		
Frame Covering	26	.018″ min.
Louver Slats (under 6 ft.)	25	.021″ min.
(over 6 ft.)	24	.025″ min.
Vertical Strips	24	.025″ min.
Gravel Stops		
Stops	25	.021″
Edge Strips	24	.025″
Coping Cover		
Edge Strips on Wood Copings	24	.025″
Edge Strips on Stone Copings	22	.031″
Standing Seam	26	.018″
Flat Sheet Coping	25	.021″
Cornices and Belt Courses		
Edge Strip on Wood Cornices	24	.025″
Edge Strip on Stone Cornices	22	.031″
Belt Courses	22	.031″
Flat Covering	25	.021″

[4] *Gauges recommended are minimum and heavier gauges might be indicated depending upon design, number of structural supports and method of joining called for.*

APPLICATION	U.S.S. GAUGE	THICKNESS IN INCHES
Skylights		
Caps	25	.021″
Condensation Gutter	26	.018″
Sidings (Bulkheads—Elevator, Penthouse and Staircase Shafts)		
Flat Sheets	25	.021″
Crimped, Keyed and/or Corrugated	26	.018″

These gauges, you'll note, are somewhat lighter than you might ordinarily specify. But service records prove that relatively light gauge Monel can safely be used—even under such severe conditions as are often found in many coastal cities and industrial areas.

Among the important reasons for this are the high corrosion-resistance and mechanical properties of Monel. This dependable Nickel Alloy withstands attack by smoke, rain and chemical fumes. It endures heat and cold with less buckling and no cracking. It has the strength to stand snow, ice and tearing winds. It takes years of flexing without showing signs of fatigue.

Keep Monel in mind—not only for entire roofs—but also for drainage systems, flashings, ventilators, louvers, skylight frames, siding, expansion joints, coping, gutters and downspouts. Its initial cost is low, its maintenance expense negligible.

When you need help

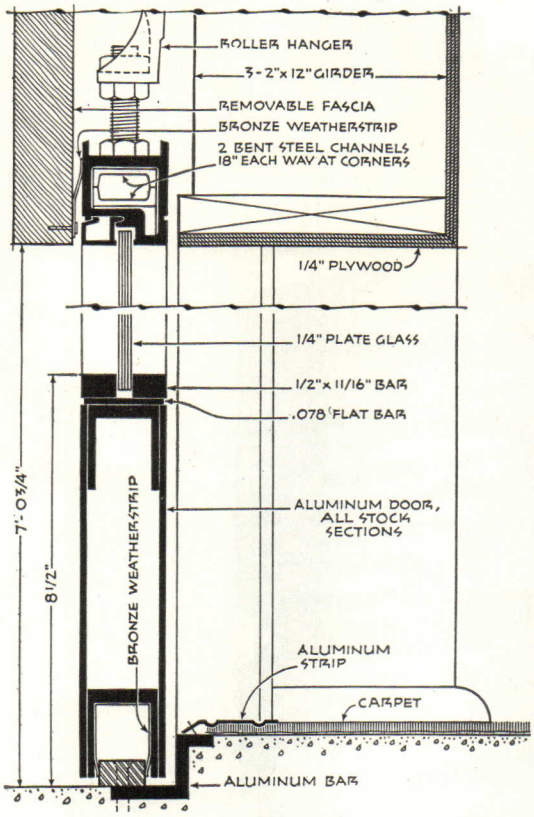
On request, The International Nickel Company will send you detailed information on the use of Monel Roofing Sheet. There is no charge or obligation for this service. If you want samples of Monel Roofing Sheet, or profusely illustrated booklets for your clients, you need only ask for them.

The particularly useful bulletin, *Monel Roofing Sheet — Basic Application Data,* from which the above chart was adapted, contains a full review of the properties and characteristics of Monel, a discussion of installation procedures, and a sample specification wording. A copy deserves a place in your file. May we send it to you?

MONEL... *for the life of the building*

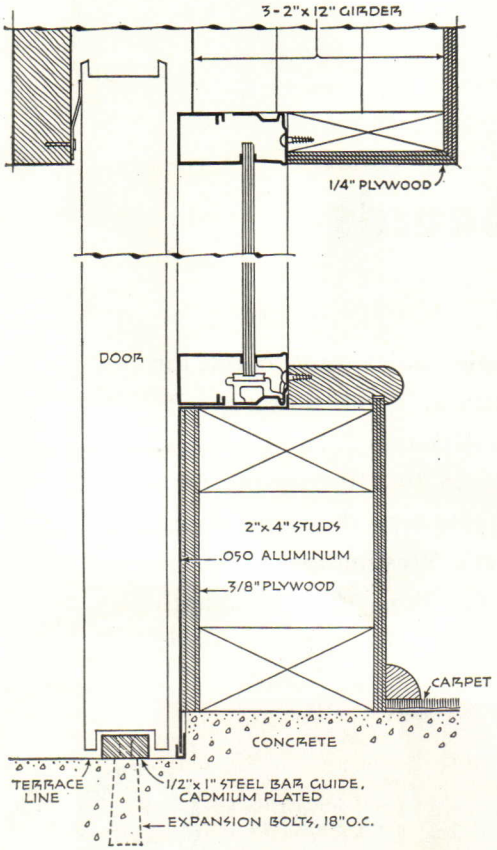
EMBLEM OF SERVICE INCO TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

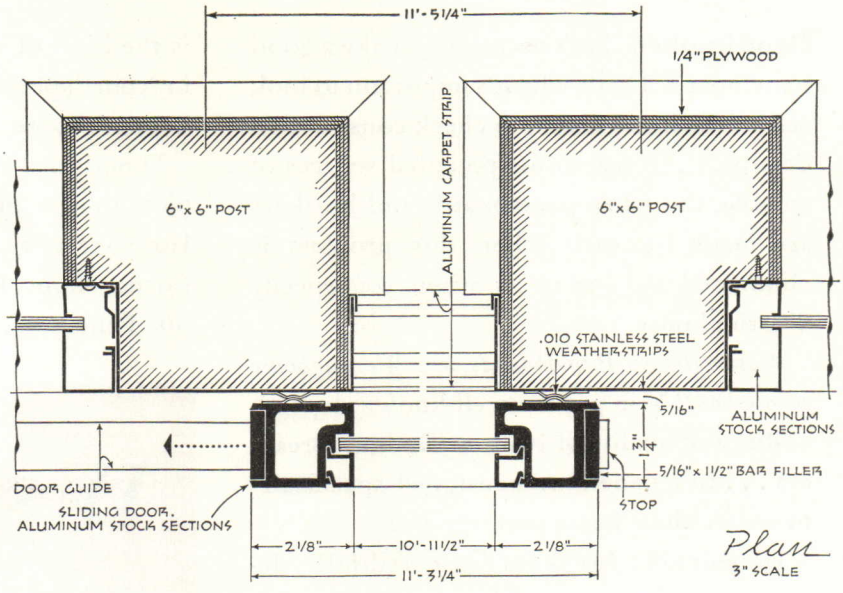


Doorway Section 3" SCALE

JULIUS SHULMAN



Window Section 3" SCALE



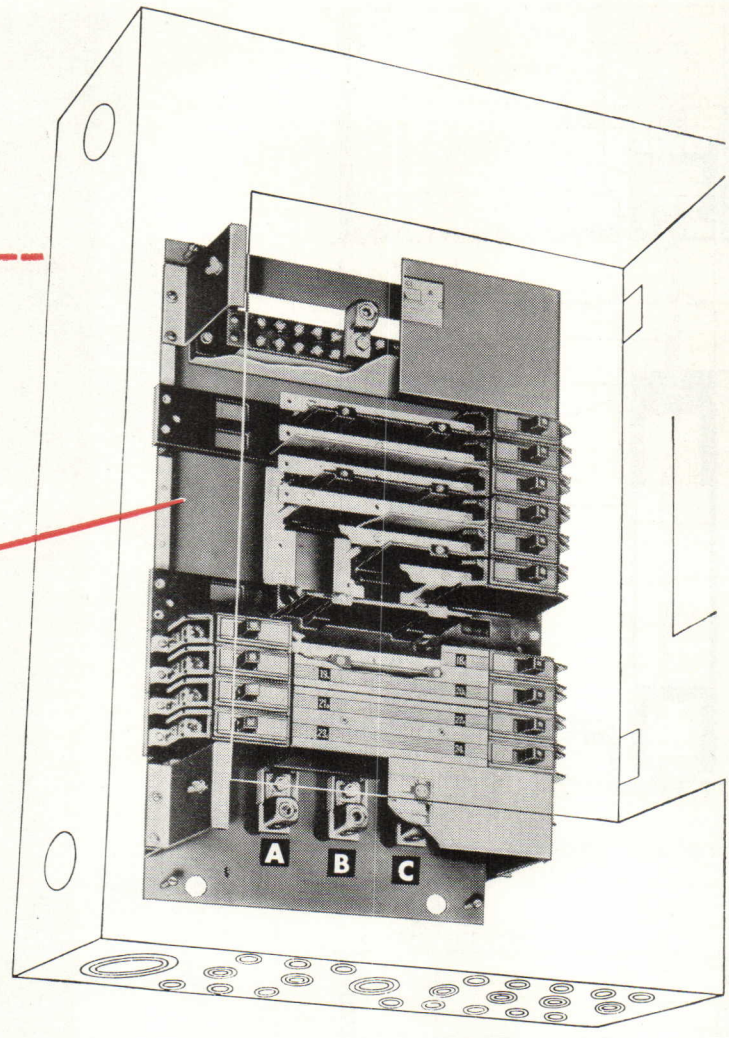
Plan 3" SCALE

STEWART BAILEY RESIDENCE, Santa Monica, California

RICHARD J. NEUTRA ARCHITECT

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



You've got to LOOK INSIDE

. . . to check FITNESS in panelboards

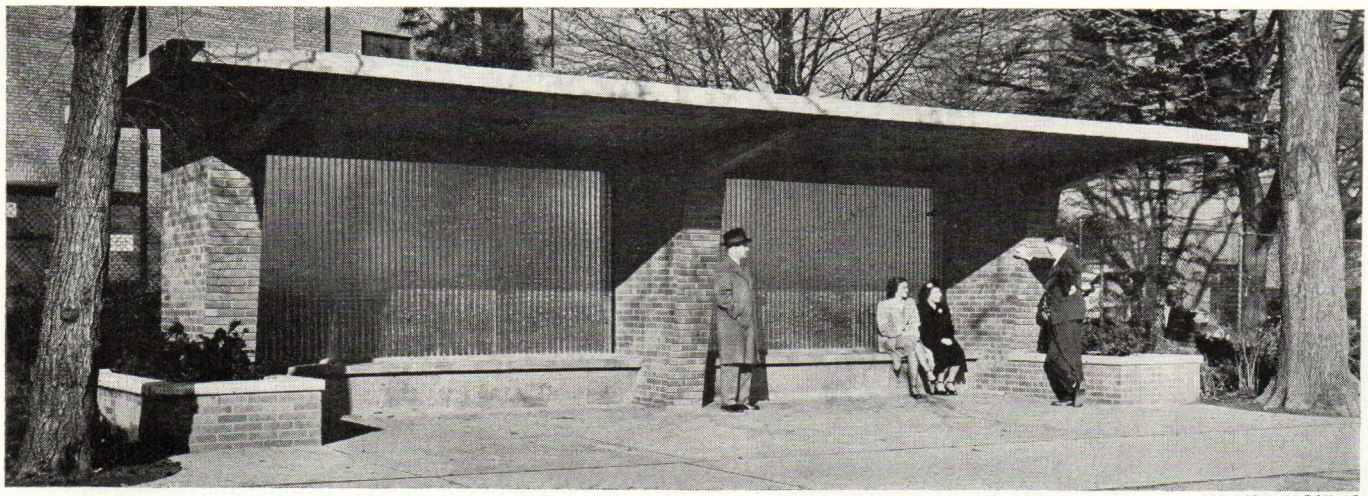
Good breakers don't necessarily make a good panelboard. That's why it's important to look *behind* the breakers . . . to check construction details . . . to search for potential sources of trouble. But when panelboards and breakers are made for each other, this problem is eliminated . . . as it is when you specify Westinghouse.

Westinghouse Panelboards are Westinghouse throughout! You get the well-known dependability and quality of Nofuze "De-ion" Breakers . . . in a panelboard designed specifically to assure their finest performance.

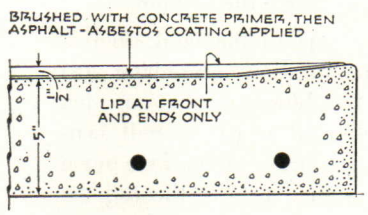
Dependable breakers in a skillfully designed, well-constructed panelboard—this is the kind of quality you'll want to call for in your specifications. Next time, specify Westinghouse Panelboards . . . and be *sure!*

Descriptive Bulletin 30-930 contains complete information plus typical specifications. For your copy, write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-40382

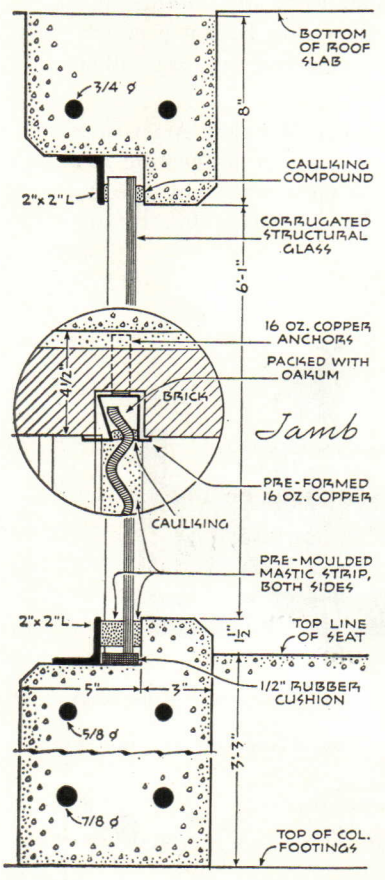
Westinghouse
PANELBOARDS



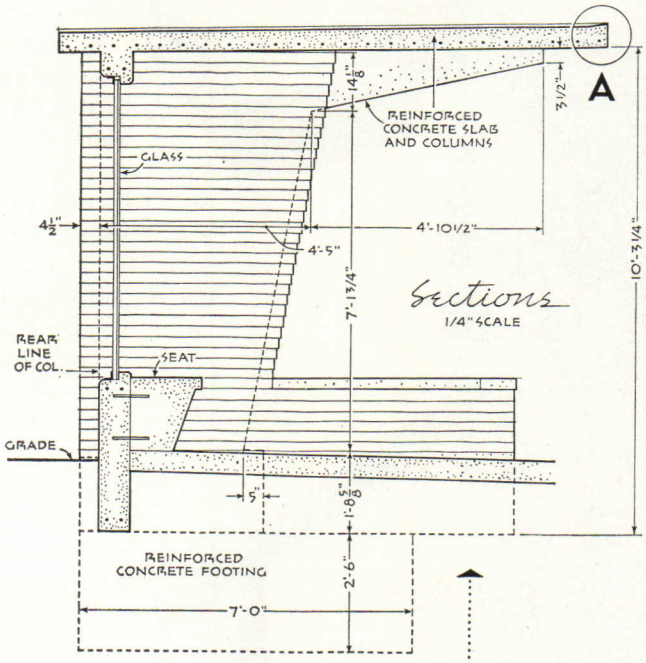
EASTMAN KODAK CO.

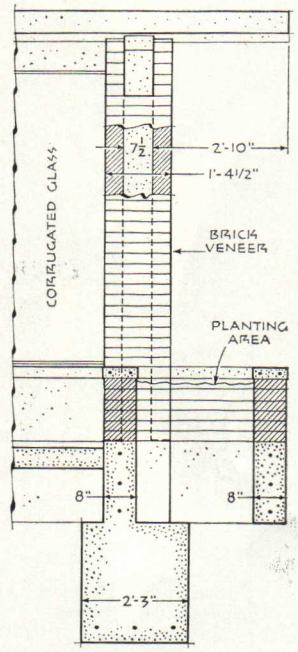


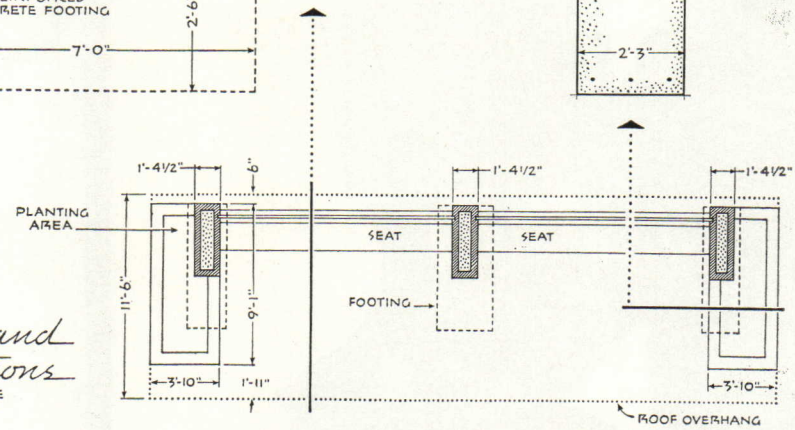
Detail at A 1 1/2" SCALE



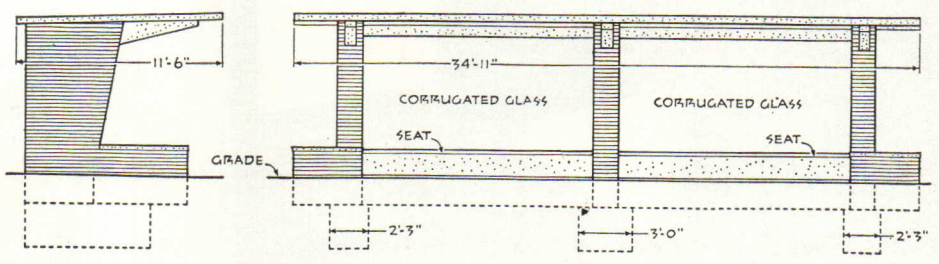
Glass Wall Section
1 1/2" SCALE







Plan and Elevations
3/32" SCALE



EASTMAN KODAK COMPANY, Rochester, New York

ENGINEERING DEPARTMENT EASTMAN KODAK COMPANY

Notice how *more* folks notice heating *more*?

She had been impressed by the modern kitchen. He had grinned as he surveyed the spacious recreation room. But, it was when both eyed the Bryant automatic gas heating installation that they knew *this* was *their* house . . . a quality home throughout!

In most every part of the land, there's growing excitement about automatic gas heating. It is the blooming of an idea which Bryant planted nearly a half century ago with installation of the first home heating truly designed to "let the pup be furnace man!"

Four modern factories now hum day and night to supply the demand for this famous equipment. Fifty distributors and thousands of dealers offer Bryant products in a selection unmatched by any other single brand.

Bet your bottom dollar that Americans want the *best* in automatic gas heating . . . the kind you give them when you specify or install equipment bearing the Bryant nameplate.

Let the pup be furnace man
. . . and water boy, too!

bryant

AUTOMATIC HEATING

The most complete line of gas heating equipment in the nation

Bryant Heater, Dept. 242,
17825 St. Clair, Cleveland, Ohio

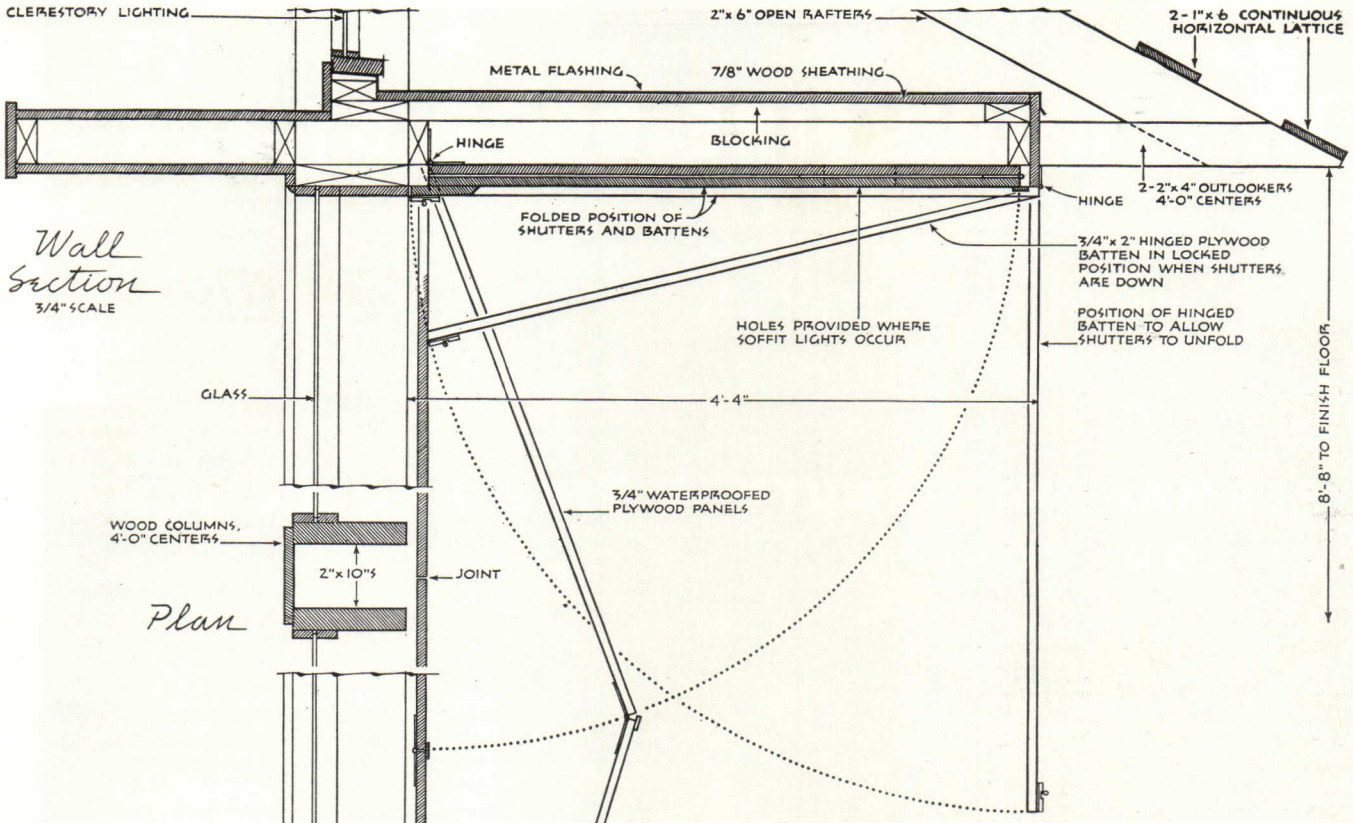
( ) Send me the new booklet that tells the Bryant story. ( ) Have your distributor call on me.

Name_____

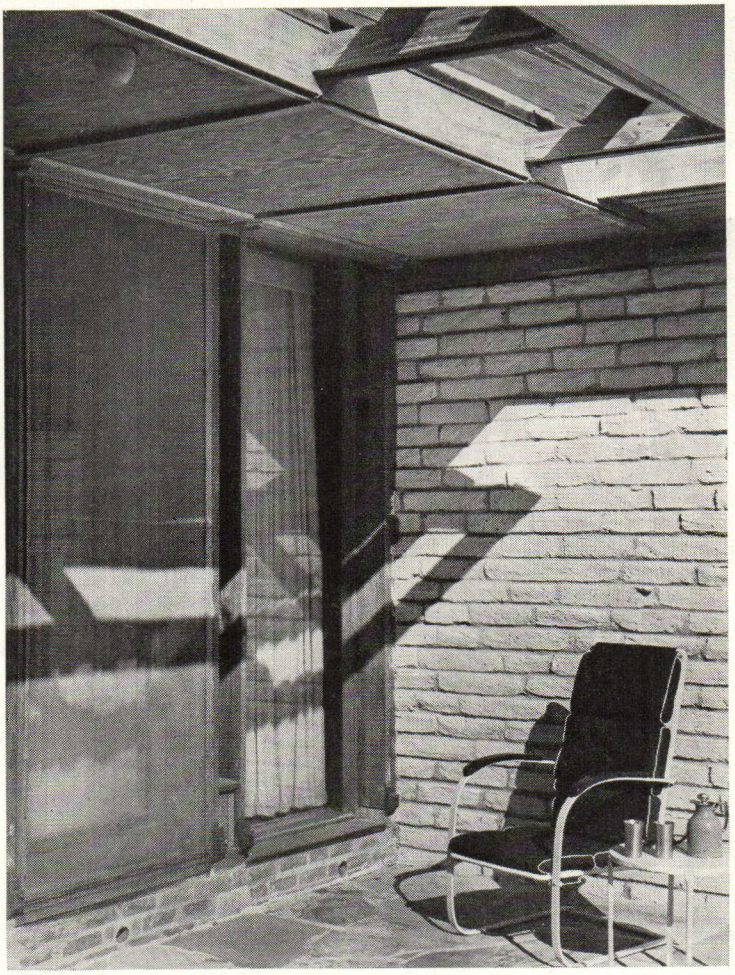
Company_____

Address_____

City_____ State_____

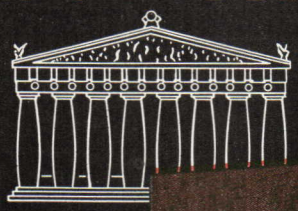


RADA PHOTOGRAPHY



ALBERT E. HOUCK RESIDENCE, Coral Gables, Florida — **IGOR POLEVITZKY ARCHITECT**

NEW WOOD FIRE DOOR BY FOX



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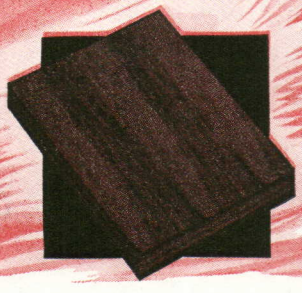
PERMANENT BEAUTY + FIRE PROTECTION AT LOW COST

MELAMINE RESIN VENEER

Provides a beautiful pre-finished laminate in natural or simulated wood finishes that resists scratches, burns, acids and water . . . will retain original beauty throughout the years—and never need refinishing.

PROTEXOL IMPREGNATED WOOD CORE

Gives complete safety from the spread of fire . . . and assures dimensional stability and freedom from damage by rot or vermin. Fox wood fire doors have been tested and approved by national fire authorities—and are available in 45, 60 and 90 minute ratings.



MELAMINE PRE-FINISHED FIREPROOFED PANELING ALSO AVAILABLE

Fox Bros. furnishes this beautiful material either in custom millwork to your specification, or as a basic material. SEND THIS COUPON for a free sample and complete information.

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FOX BROS. MFG. CO. ☆*75 Years Experience*

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technical press

By JOHN RANNELLS

public health

Temperature and Human Life. *C-E. A. Winslow and L. P. Herrington. Princeton University Press, Princeton, N.J., 1949. 272 pp., illus.*

The basic data for current practice has to be re-examined from time to time in all fields. This is in addition to continuing refinements in practice. What must happen at intervals is a shake-up; where current practice proves to be unrealistic in terms of the broader theory it has to be revised or replaced —like the old standards of 30 cu. ft. of fresh air per person per minute which was the basis of school heating and ventilating design for so long. That one cost us a lot of money before it was replaced—several million a year on a nation-wide basis—and yet the expensive equipment was frequently not operated at all or else managed so badly that it produced objectionable rather than desirable results.

The Society of Heating and Ventilating Engineers has been carrying on sound research for years, in the field of comfort especially, but their methods have been largely empirical. Now the authors, working in the John B. Pierce Laboratory of Hygiene, at New Haven, set the stage for further developments with a penetrating analysis of the problems and a new powerful tool for investigation. The analysis benefits from a combined approach encompassing physics, physiology, and environmental hygiene and lays the basis for sound solution of the problems of air conditioning and related fields.

The new experimental techniques called "partitional calorimetry" have made it possible to determine the interchanges between the body and the environment as they occur, instead of summing up total results in a "heat trap" calorimeter. Heat transfer by various physical avenues (evaporation, radiation, convection) can be determined separately and the process of adaptation to varying proportions of heat transfer by radiation and convection can be studied. The techniques can be adapted to many problems, such as prediction of influence of certain atmospheric conditions on individuals operating at various metabolic rates.

This research does not cancel out the previous findings. Rather, it enriches the older material, rendering it more understandable and making it possible to set up and solve new problems. (The technique was used during the war for research in clothing for extreme climates.) Much of the results has already found its way into the A.S.H.V.E. Guide. A series of articles in *Heating, Piping and Air Conditioning* starting in October '49 on "The Physical Side of Comfort," brings much of this material into the current literature of the engineers.

This book gives us a broader and more detailed understanding of the physiological problems of radiant heating and cooling than we get from the "practical" engineering approach. The last chapter, "Influence of Climate and Season upon Health," opens up possibilities for better utilization of the world's resources. Winter heating of houses (only general since Tudor times)

(Continued on page 116)

technical press

(Continued from page 115)

has been a great factor in the spread of western culture. "May not vast areas in the sub-tropics," say the authors "become the seat of mighty civilizations, as summer air conditioning meets human physiological needs with similar efficiency."

Public Health Engineering. *Earle B. Phelps. John Wiley & Sons, 440 Fourth Ave., New York, N.Y., 1948. 655 pp., illus. $7.50*

The coverage of the civil engineering field is not so broad as it was in Roman times. Even "sanitary engineering" has come to mean not the engineering of sanitary science but the limited fields of water supply and sewage disposal. The present work, which is subtitled "Textbook of the Principles of Environmental Sanitation," broadens the view again, recognizing that nothing less than man's whole relationship to his environment can form the basis for so all-embracing a field as public health.

The outline is disarmingly simple: Part One, The Air Contact; Part Two, The Water Contact. Yet, Part One covers weather and climate and housing, thermal environment of the human body, heating, ventilating, air conditioning, illumination and lighting, atmospheric pollution, noise, insects, and insect control. Part Two (in collaboration with Clarence J. Velz) is not quite so broad in outline but considerably more detailed in its engineering applications.

The book is written primarily for the engineer who already knows how to build in order to tell him *what* to build and *why*. It is as unified and informing a work as you will find on this broad subject for the general education of related professions — medicine, architecture, planning.

cross references

The Public Health approach is a convenient one for understanding the interrelationships of the engineering of architecture.

A recent article in *Illuminating Engineering*, "Heat, a Problem of Fluorescent Lighting," October '49, carries this explanation under the title: "This problem too frequently is overlooked by the illuminating engineer, is beyond the field of operation of the electrical engineer, and, though it is of vital interest sometimes to the air-conditioning engineer he may not be in possession of all the facts concerning it."

An article in *Heating and Ventilating* for November '49, "Estimating Heat Gain from Lights," gives approximate data for making heating and air conditioning estimates in the early stages of project planning when actual data on lighting are not yet available.

Another application—the venting of domestic gas appliances—is best under-

(Continued on page 118)

PERMANENTLY FORTIFIED
for Life-Time Wiring Protection

Unlike ordinary rigid steel conduit, SHERARDUCT is fortified—*permanently fortified*—against rust and corrosion by the Sherardizing Process of dry galvanizing. A pure zinc coating, driven into the pores of the steel, becomes an integral part of the tube itself because it's *alloyed with the steel.* Furthermore, SHERARDUCT will not split or peel, and although it can be bent easily, it will not crack!

SHERARDUCT is still further protected against acids and other corrosive agents by the clear "Shera-Solution" coating, baked on for added endurance. The smooth inside surface makes fishing easy.

Specify SHERARDUCT—full weight, threaded, rigid steel conduit—*fortified* to give wiring *life-time protection.*

Sold through leading electrical wholesalers.
Listed by Underwriters' Laboratories, Inc.

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PRODUCTS CORPORATION

1328 CHAMBER OF COMMERCE BUILDING, PITTSBURGH 19, PA.

EVERYTHING IN WIRING POINTS TO NE

technical press

(Continued from page 116)

stood against the background of Winslow and Herrington's book. The change in ventilating theory and practice which established the adequacy of smaller quantities of fresh air (and the fact that infiltration generally supplies the need in houses) also recognized the importance of removing unwanted gases, particularly products of combustion. There isn't yet a clear-cut policy of the gas industries on this subject, however. In a series of articles in the *American Gas Journal* (July through October 1949) Carl H. Dean brings the problem into focus in the hope of hastening the establishment of venting standards.

In the words of Dr. Winslow, "All planning and architecture is public health." Without conceding any of architecture's unique position, that is a pretty thought-provoking way to look at it.

Radiant Heating. *T. Napier Adlam. The Industrial Press, 148 Lafayette St., New York, N.Y. Second Edition, 1949. 504 pp., charts, tables, details, etc. $6*

This is a very full, detailed, practical work on application of radiant heating and cooling by one of the most experienced men in the business (vice-president and general manager of Sarco Mfg. Co., makers of all types of controls). The new edition adds material on various panel types, especially electric conductors and snow-melting installations. A very thorough text and reference volume. (See full review of first edition in April 1947 P/A.)

Materials of Construction—*Woods, Plastics, Fabrics. Albert G. H. Dietz. D. Van Nostrand Co., Inc., 250 Fourth Ave., New York, N.Y. 1949. 347 pp.*

Here at least is a group of materials that we use in combination, all in the same book. About half is wood—a very thorough handling of it, especially veneers and adhesives, plywood and laminated wood. Textiles as such are treated very briefly. They give fuller treatment as components of plastic laminates or as woven plastics. The material on plastics includes chemistry, physical and structural properties, molding methods, combinations, building boards, and sandwiches, etc.

The book is one of a technical series on building construction.

Kitchen Planning Standards. *Small Homes Council, University of Illinois Bulletin C5.32, Urbana, Ill. 10 cents*

A score-card method of judging existing kitchens is developed as well as criteria for planning good ones. An earlier bulletin, No. C5.31, developed the requirements for cabinet space. Analysis of 103 plans of moderate-cost houses revealed that inadequate cabinet and counter space (in most cases no

(Continued on page 120)

MENGEL

means QUALITY in Hollow-Core

FLUSH DOORS

1 Balanced seven-ply construction to provide controlled reaction in changing weather conditions.

2 Hardwood construction throughout—stronger, more durable, free from grain-raising, more easily and economically finished.

3 Exclusive Insulok grid core material has inherent resiliency, cannot cause warping, nor transfer grid pattern to faces.

4 Greater strength. Adequate core stock surface area provides maximum gluing surface and resistance to warpage.

5 Precision key-locked dove-tail joinings of stiles and rails add strength and stability.

6 Ready to finish. Door faces are smoothly belt-sanded. Stiles are machine-planed at factory—prefit to standard book sizes.

7 Fully guaranteed. Each door must meet rigid quality control standards and constant inspection throughout manufacture.

8 Mengel Flush Doors are economical—no mouldings to paint—no corners to collect dirt. Smooth hardwood surfaces are less absorbent and less costly to finish—easier to clean and longer-lived.

Write for complete specifications. Use the coupon.

Also see—
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technical press

(Continued from page 118)

counter at all alongside the range or refrigerator) was the most general fault. But worse yet, the space itself was generally laid out so badly that the faults could not be corrected.

So it is vital to get the kitchen properly laid out in the first place, with adequate accommodations in correct sequence and compactly arranged. One measure of efficiency is the "work triangle" (refrigerator to sink to range) the sides of which should not exceed 22 feet total and traffic through which should be avoided.

CORRECTION

The italicized paragraphs which appeared in last month's TECHNICAL PRESS were all quotations from "Psychology and Scientific Research" which was published in *Science*, November 4, 11, and 18, 1949.

BOOKS

DESIGN REFERENCE

Modern Furniture. *Mario Dal Fabbro. Reinhold Publishing Corp., 330 W. 42 St., New York 18, N.Y., 174 pp., illus. $5.00*

If I had known what I was getting into when I agreed to "write a few words" about Mario Dal Fabbro's book, if I could have foreseen the time spent, the headaches (literally), the number of sheets of paper scribbled on and torn up—I would still welcome the experience.

Because in studying *Modern Furniture, Its Construction and Design* I've gotten a lot of things clear in my mind about furniture. Any discussion of the merits of a book is bound to be almost as much a reflection of the person discussing as it is of the book itself. This book will appeal to (and reflect) at least four distinct groups:

(a) the architect, who provides space for pieces of furniture in his design;
(b) the decorator, who guides the selection of pieces;
(c) the client, who pays for them, and lives with them;
(d) the designer-craftsman-manufacturer, who makes them for a living.

Since I found myself represented in each of these groups about equally, my problem was to match Dal Fabbro's honesty and forthrightness with a point of view equally clear. I was thrown off a little at first by the introduction and foreword. "The architect may be interested"; "The Decorator will find much"; "The average man should." But in my final opinion this book is meant primarily for none of these. It is assembled for the man who visualizes and creates furniture with his own hands, in his own shop.

It is written specifically for those who are impelled by a desire to create "good" furniture, whether "neo", "modern", or undated.

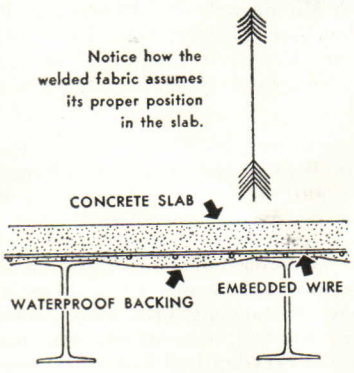
It is presented in such a way that the creator of new designs can page through it to find out what has been done, what can be done, what is being done, and by whom.

There is no discussion, as evaluation, as personal opinion, or individual point of view, except of course Dal Fabbro's taste in selection, which I find excellent. There are details only where they are considered essential to explain the working of a piece. There is no color, no finish, no settings, no attempt to sell a single design or solution.

But the form and function of furniture from the humble footstool to the folding table and the disappearing bed are clearly shown, in examples from two continents. The great value of this book lies in its comprehensiveness. It is, to my knowledge, the first book on the live and broad subject of contemporary furniture. And it is just the sort of "first book" we need.

(Continued on page 122)

You speed construction and cut costs with Pittsburgh Steeltex Floor Lath



Pittsburgh Steeltex Floor Lath speeds construction and cuts costs because it permits you to pour your floors while continuing complete operations on the floor below. You get a stronger slab because it is properly reinforced with welded wire mesh—properly cured because the moisture is retained by waterproof backing. For further detailed reasons for specifying *Steeltex,* see Sweet's or write for catalog D. S. 133, Dept. PA, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Penna.

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p/a REVIEWS

(Continued from page 120)

Shortly there will be others with words, essays, color reproductions, and what not. The architect, the decorator, and the client will queue up for these.

But for the man primarily responsible for the existence of good furniture, it is hard to imagine a more useful reference book. There is a series of diagrams in the back of the book labeled "easy to build" pieces for the "hobbyist."

My reaction to this—all of it—is that no piece of furniture worth having is going to be "easy to build." I know from experience that, to make mortised, splined, and doweled joints you don't "putter with nails and a saw." You use precision and power tools, and it's pretty nearly a fulltime job.

Then, as a footnote to each design, it says, in fine print, "a natural finish is recommended." No matter what finish is used, the sanding and sealing of a surface is a slow and laborious process for which there are no quick substitutes. Let no hobbyist be deceived by these free recommendations! Let him also "facilitate his work by examining drawers in furniture at home" as Dal Fabbro suggests.

Such a loose rein in a book on modern furniture may have very interesting results. In my case a good look and several unsuccessful tugs at drawers at home were what sent me down to the workshop in the first place. However, if a study of this chapter results only in pleasure for the hobbyist then the cost of the advice is very little.

ROBERT HENRI MUTRUX

RESEARCH NEEDED

Production of New Housing: A Research Monograph on Efficiency in Production. *Leo Grebler, New York Social Science Research Council, 230 Park Ave., New York 17, N. Y., 1950. 186 pp., $1.75*

This is a cool, objective, and penetrating analysis of the problems of housing.

The author states that he is not willing to accept the generalities that are so commonly used for criticism of the house building industry. Then he proceeds to analyze every phase of activity involved in housing production, including technology, economics, and many common everyday building and business procedures. Each analysis is accompanied by statements of "suggested research" which accumulate into the definition of a tremendous research task. One of the biggest jobs to do for housing appears to be to learn through research *why* house building functions as it does.

This volume also has value simply as

(Continued on page 124)

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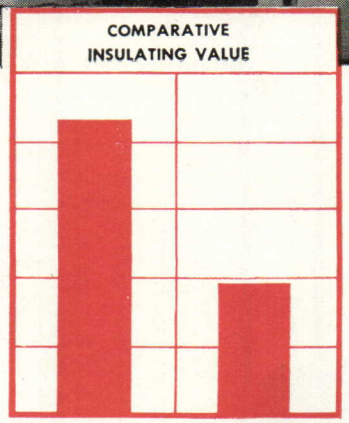

IT'S 10° below zero in that laboratory "cold room." On the other side of the test panel it's 70° above zero—average room temperature. This was a test to re-create actual living conditions in an average home. We wanted to compare the insulating value of INSULITE Sheathing and wood sheathing.

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Refer to Sweet's File, Architectural Section 10a/8

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p/a REVIEWS

(Continued from page 122)

a bibliography of much of the best writing on the subject at this time. For the technical researcher who believes that he knows a great deal about the production of housing, this book might be a revelation. While the technologist has been swamped with problems in his special field, some social economists, apparently, have done some carefully organized thinking. W. H. SCHEICK

NEW QUARTERLY

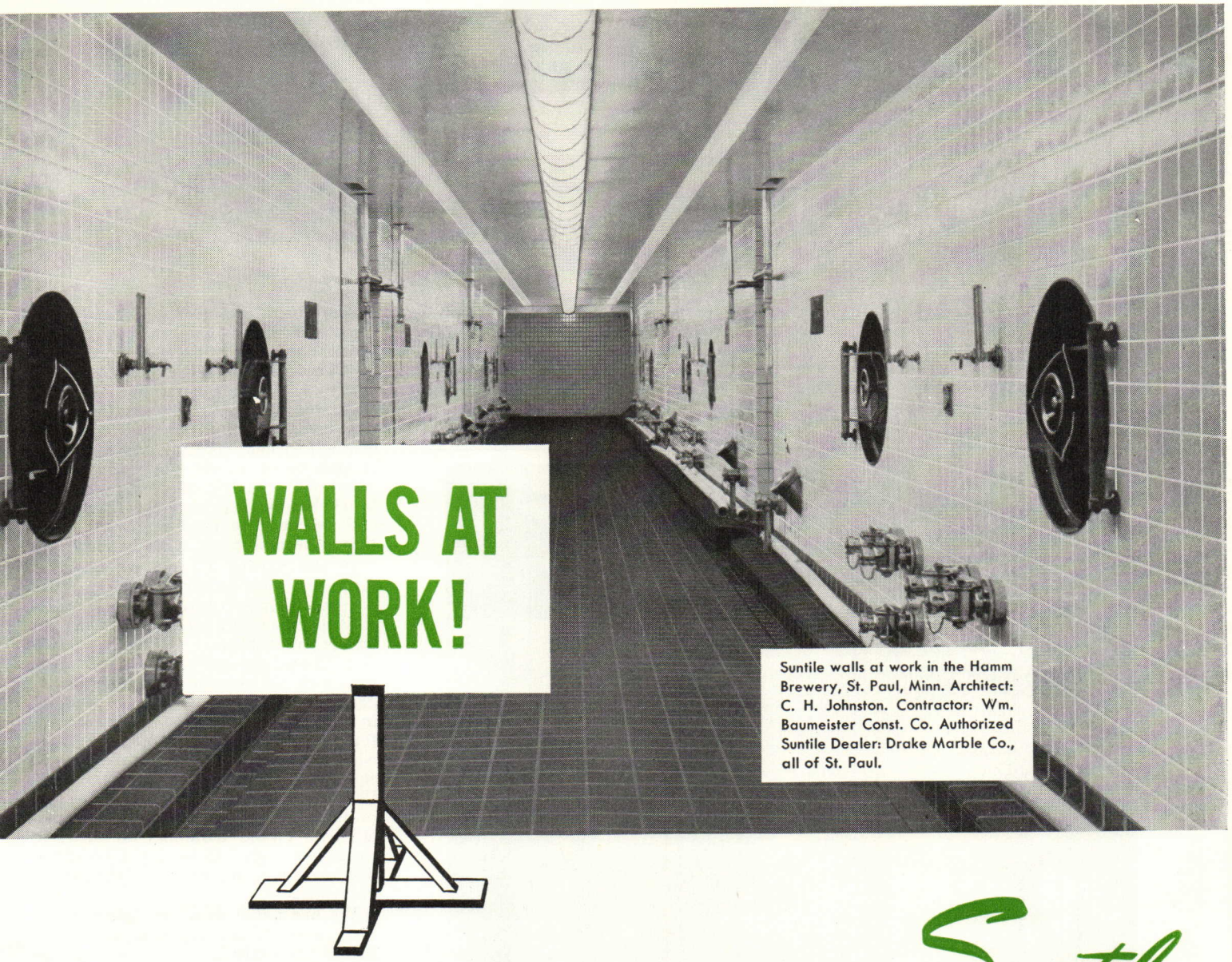
Modern Lamps. *Volume 1, Number 1, Spring, 1950. Quarterly published by Krieger Publications, Inc., 114 E. 32 St., New York 16, N.Y. Subscription $3.00 a year, single copy $1.00*

In forty-eight pages devoted to lamps, an amazing range of types, designs, and adaptations is shown in this specialized publication. Statements of theory by leading designers and critical discussion by several provide provocative reading. Thumbing through this new quarterly, the architect, decorator, or interior designer can do his armchair shopping for the lamp that is exactly right in that new room. C.M.

TROPICAL PROBLEMS

Design. *A quarterly magazine of tropical arts and architecture, Issue No. 1. Published by Arts and Design, Inc., 928 dePont Bldg., Miami 32, Fla. Yearly subscription: U.S., $3.50; foreign, $4.70*

This is the first issue of a new regional publication which has been awaited with great interest. The masthead lists Henry Wright as editor, Lee Childress as managing editor, Ezra Stoller as associate editor, and explains the purpose of the publication as being to "stimulate the interest of the greatest possible number of people in the building industry of the tropics and its achievements," and "to serve as an inspiration and refresher rather than a mirror of representative work." The first issue succeeds admirably in these intents. The editors have avoided presentation of the falsely regional clichés which have come to mean Florida Architecture to most observers, and have found buildings and articles which approach problems of living and problems of climate in a reasonably appropriate manner. Text by Al Parker, Rufus Nimms, and others discusses tropical design problems and their possible solution in simple, yet fresh and useful terms. The direction is obviously to the intelligent and interested layman rather than the blasé designer. Layout is fresh without being tricky; paper and printing are excellent. T.H.C.



Suntile walls at work in the Hamm Brewery, St. Paul, Minn. Architect: C. H. Johnston. Contractor: Wm. Baumeister Const. Co. Authorized Suntile Dealer: Drake Marble Co., all of St. Paul.

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out of school

By CARL FEISS

"Man lives by platitudes; our heritage of platitudes is the storehouse of all we know; it is part of human trial and tribulation that each generation must discover them for itself." Hamilton Basso in *The New Yorker* February 25, 1950

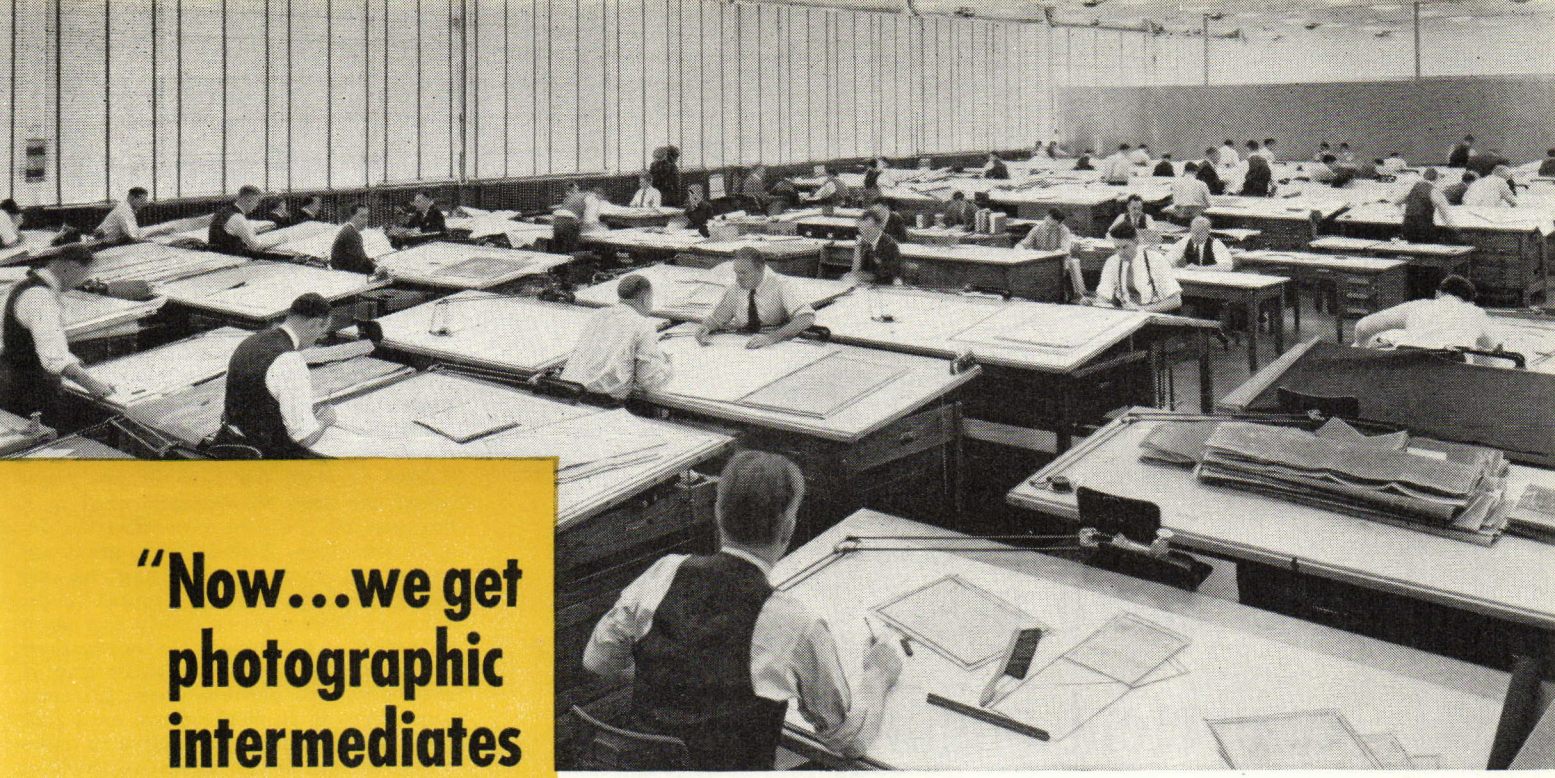
The above cynical blast has within it the reverberations of truth. In fact, truth itself, when universally recognized and accepted, though not necessarily adopted, becomes a platitude. Then the problem resolves itself into whether you are bored by platitudes, accept them as self-evident and with some grace, or whether you admire them. The dome of St. Peters, through no fault of its architect, became a platitude. Its admirers, by imitation, converted it into a cliché. By inept and irreverent imitation they debased the original without creating anything good enough to be adopted by society as a platitude. The list of such precursors to clichés begins with the Parthenon and descends to random ashlar walls that penetrate plate glass windows.

If the Sistine Chapel or Chartres Cathedral were destroyed, society would demand their reconstruction. Undoubtedly the time will come when some art loving philanthropist will build the Sistine Chapel in the U.S.A., full scale and with all murals accurately photographed and in place. But it wouldn't in the least bit obviate the real need for dozens of more Michelangelos in the world. And the fact that cheap and cheesy imitations of the Parthenon and Chartres have flooded our land does not in any way absolve us of the responsibility to create buildings as great in their own right as were the buildings which are now accepted as platitudes of greatness.

We are today in a trembling world. It is possible for cynicism as to our future to outweigh our creative impulses. "Let us put sandbags around our memories and dive underground. The ruins of Hiroshima are not as interesting as Pompeii." I place no value in these attitudes. The justification for wanting to prevent total destruction of ourselves is more than just the preservation of life; it is the preservation, also, of those creative impulses which are constantly directed towards bettering life. Without these latter, let the bomb fall.

I have been wondering philosophically about Cologne Cathedral, now standing, a great white shape above the vast reaches of rubble of a quondam city. What were the justifications for its preservation over and above the preservation of the lives of the many inhabitants of this once crowded place? What is the intrinsic value of such a structure that makes for a military command to save this one building above all others in a city of many buildings? What are the self-justifications of the farm boy from Iowa, who has never seen any building larger than the county courthouse or more beautiful than the First Presbyterian Church, as he opens the bomb-bay? Why the concern over the possible destruction of Rome or Paris? Caen and Bayeux and

(Continued on page 128)



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out of school

(Continued from page 126)

Dresden were caught. Who is the art jury that blows up the bridges on the Arno, all but the Ponte Vecchio? Perhaps our objectives now should be to build our cities so well and create such merit in all structures that even the hatred of man for man cannot transcend the urge to preserve what man has created. We then save ourselves despite ourselves. Architecture, great architecture, and city building become more binding than a moral code, stronger than a peace treaty and more universal as a covenant for safety than a United Nations. It's a queer line of reasoning, but perhaps there is merit somewhere in it. Perhaps we need just such an unobtainable objective to make a stab at real design again worthwhile. Think about Cologne Cathedral rising sharp, pointed, isolated, an island out of context with its sea, no longer valid as a mere medieval monument, saved by choice from the destruction meted out to its parishioners. There seems to have been no hesitancy in bombing the slums.

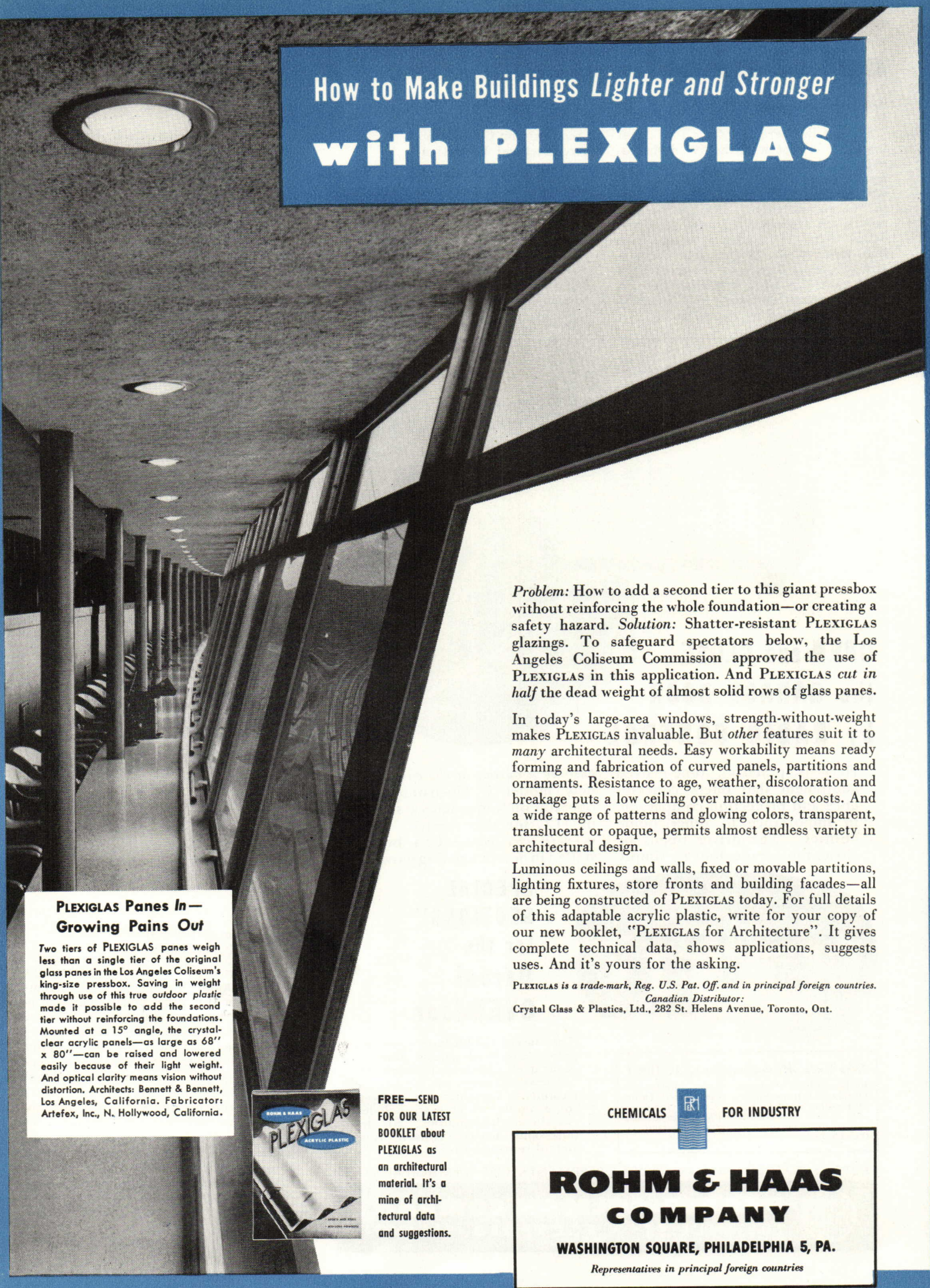
●

Even though you may not accept such romantic idealism as an objective, there must be an objective to education. Many of us have objectives too personal to discuss here in public, but we have been talking objectives for some time—some well disguised, others clearly defined. However, there is obviously no universal objective. Some men want to build pyramids to themselves, some want power and prestige, some have service goals, others still wish to create beauty for itself. Some men have no other desire than to vegetate. Objectives are personal choices, seldom attained and usually no one else's business. But once a man decides on being trained to reach an objective—whish! it's lots of people's business!

I was doing a check list the other day to try and line up a few general goals for OUT OF SCHOOL. Part of the check list has been covered to date, a very small part, and there seems to be a limitless list of subjects to discuss. In fact, the more I dive into this column, the more fun it gets—at least for me. The check list divides roughly into five parts:

1. Academic architectural education.
2. Education for apprentices, technicians, and college graduates in transition.
3. Adult education for the architectural practitioner.
4. Public architectural education, including public school children, realtors, building industrialists.
5. International education for practitioners, including UNESCO and Point Four.

(Continued on page 130)



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out of school

(Continued from page 128)

I won't list here all of the items that might fit into each of the five divisions, even if I had the ability to dream them up. However, for the sake of clarity, I will enlarge briefly on the five and then in subsequent issues pick out salient points, not necessarily in any order, and detail them. It should be emphasized that there is no dividing line between any of them. Plenty of dividing lines exist that shouldn't, but education on comprehensive architecture is needed *universally*—even by engineers.

Academic or Collegiate Architectural Education

Critical points to consider today in collegiate architectural education are now being studied in part by a special committee set up in the A.I.A. to evaluate the architectural schools. An evaluation of the schools can supply basic data on the status quo but does not solve problems. For instance, if it were to come up with the statement that there are too many schools, who is competent to decide which ones to eliminate, why, and how? The study, however, is needed and we wish the committee well.

Among a few of the to-be-solved problems are:

a. To whom to teach architecture. How to determine aptitudes.
b. How to teach architecture.
c. How long should an architectural education be?
d. How much should it cost?
e. How to integrate an architectural curriculum.
f. What are the boundaries of a training program and the relationships to other arts, sciences, and curricula?
g. What is architectural engineering?
h. Textbooks? How do you teach architectural history without them? Do you need to teach architectural history?
i. How do you teach "Design"? Do you bring the pot to the cup or the cup to the pot?
j. Terminal or Junior College Training.
k. How to teach teachers. How to pay salaries. Tenure.
l. Visual aids, libraries, overhead.
m. Relationships within a university; with professional societies; the world.
n. Placement.
o. Research.

I shan't go on with the list, which exceeds the alphabet in length once over and then is only partial. Try making your own: it's fun.

●

Education for Apprentices, Technicians, Draftsmen, and College Graduates in Transition

There is a half-world of men, inductees, or trainees, in the offices for whom there is little or no formal education. A few night schools in the large cities take the problem seriously but barely scratch the surface. The employer is *not* interested. In-service training is unknown even in the largest offices. The need is acute and no sound solution is known.

●

Architectural Education For the Practitioners

Aside from occasional speeches at A.I.A. Chapter Meetings and a few seminars at conventions, adult education is practically unknown in architecture. A few universities have held institutes or conferences on special subjects, usually to invited guests. The architectural periodicals serve in a quasi-educational capacity, though their lack of critical commentary, on the whole, limits their educational usefulness. Mumford, an occasional writer for a non-architectural periodical, *The New Yorker*, is often more instructive than some of our most flossy professional journalists. The practicing architect is assumed to be an educated man, even though he has

(Continued on page 132)

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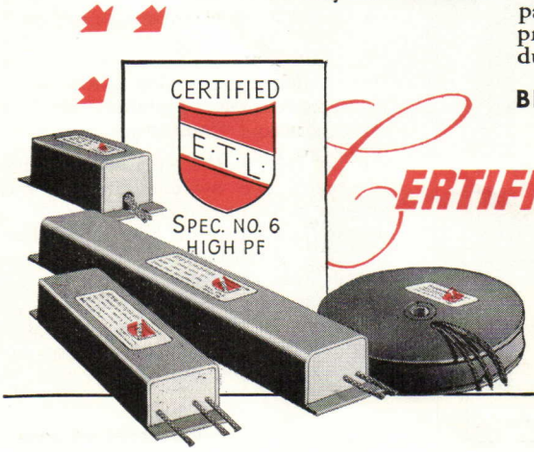

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out of school

(Continued from page 130)

often graduated from an architectural school.

There is a wide field of necessary endeavor for Divisions III and IV in gen-

grams. Where universities and local chapters exist side by side in the same city, there is a surprising lack of co-

kind or another, one would assume, if one were dropping in from Mars, that everybody would be taught something about architecture. In education, it is unwise to assume assumptions! Anyway, what the general public knows or cares about its man-made environment is abysmally little. If the general pub-

out of school

(Continued from page 132)

nological progress. I expect to find, shortly, FHA-type Colonial houses in the oily deserts of Arabia and marshes of Venezuela.

As the UNESCO and Point Four programs develop, great opportunities can arise to add to our responsibilities and to our worldwide usefulness. No training is now going on for this type of service, either in the schools or offices. We are going to be very shorthanded and inadequate to meet the variety of problems set before us when the time comes. This will limit our usefulness and effectiveness at a time when we should be in a position of sound leadership. Foresight in this field of education is sadly lacking.

●

I place no value on the above five divisions of the work to be done in and out of school during the next few years, but it is a partial answer to one reader who asked if I would not be running out of subject matter soon. Another reader asked if I might not be running out of ideas. That is, of course, more likely but it isn't apt to stop me from talking. By this time you know me well enough to know that's impossible.

To the schoolmen and the practitioner: In a few weeks now several hundred eager young beavers, their sheepskins under one arm and a portfolio of *projéts* and thesis under the other, will fare forth into the wild and wicked.

"Where, oh where, are the staid old Seniors?
Safe now in the wide, wide world?"

Remember, please, to mitigate their ordeal by disillusion if you can. Look at them not as cannon fodder or as potential rivals or as whippersnappers. Their crew cuts will grow out soon enough. I have had a number of letters from young job seekers wondering what is expected of them.

"I can't see how we can create architects in architectural schools *unless* they are immediately useful and unless they are ready for office work. Of course, they can't be very experienced, but they at least can be useful! Otherwise where do you put them? In the zoo? If neither the school nor the practicing architect wishes to take responsibility for the period of transition from one to the other, I feel that we are failing in a duty.

●

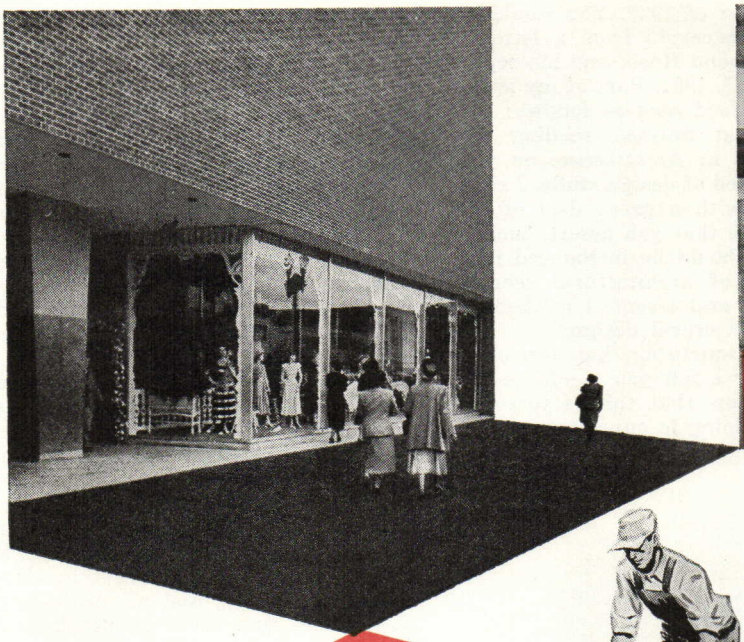
letters to the schoolmaster

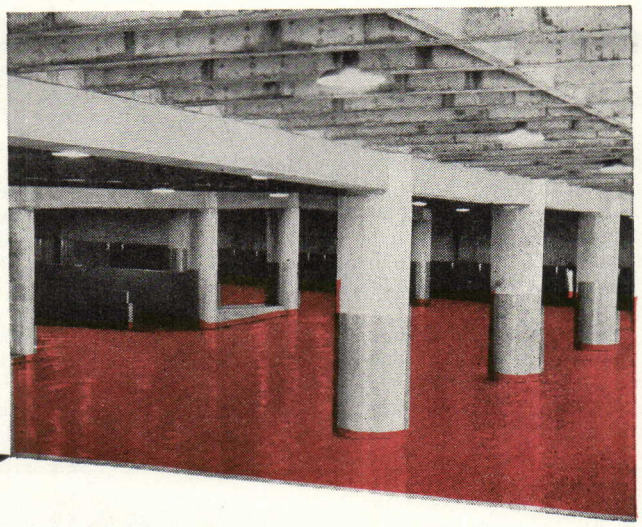
Dear Carl Feiss: I have enjoyed reading your monthly articles on the schools. This is the first time I have known what Weatherhead wrote in his Doctor's thesis. I remember he visited our department for a very short time during his studies at Columbia. You might enjoy a little more descriptive information of what happened at one school.

Even in the early 20's, University of Kansas was not an enthusiastic supporter of the Beaux Arts Program. Joe Kellogg came here in 1922 as senior design critic. He was not submitting problems in the Beaux Arts from A.&M. College in Texas, where he taught before joining the K.U. staff. We continued following the Beaux Arts only a few years after Kellogg arrived.

I started teaching the beginning and second-year design courses in 1923. I seem to have had at the time two objectives: (1) to eliminate copyism; (2) to study architecture in three dimensions without stylistic implications. The first step away from Beaux Arts and the Orders led to the study of lines in composition—contrast, rhythm, direction, etc. The results were not encouraging and this was done for only a semester. It was discarded for something more architectural. We then tried to design in perspective, buildings in simplified forms without ornament or style indication. The science of perspective drawing was not sufficiently accurate to be relied upon to tell the

(Continued on page 136)





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out of school

(Continued from page 134)

student what the true proportions of his design really were, especially when he looked up or down at the building. Consequently I wrote a book that gave accuracy to perspective drawings. (*Perspective, A Practical Development of the Basic Principles.*)

Perspective drawing as a base for the study of design soon gave way to the use of plasticine models. Here was architecture in the round, perspective and all, in one. This took place in the spring semester of 1929. You would be interested in excerpts from a letter I wrote to Raymond Hood, and his reply, dated March 17, 1931. Part of my letter to Raymond Hood read as follows:

"Having just finished reading the leading article in *Architecture* on you and your method of design study. I read this account with a great deal of interest and note that you assert, 'small-scale models should be introduced into the curricula of architectural schools as the proper and essential method of studying architectural design.'

"The above quotation has provoked this letter, for I felt you would be interested to know that this is just the thing we are doing in our architectural department at the University of Kansas."

Raymond Hood then replied:

"I was very glad to get your letter and know that at least one school is stressing the importance of flexible models. At several colleges I have seen paper models being made, but in my own practice I find a paper model takes too long to make and it cannot be changed with the freedom of plasticine. There is only one suggestion that I might make—instead of making model presentation optional, make it obligatory."

Your description of Prince Bauhaus, Corbu, et al, was most entertaining and there is much truth in your descriptions. Your comprehensiveness of architecture is fine.

I have been talking to the students recently about inclusive architecture, in much the same way, carrying the idea into three principal aspects—intellectual, emotional, and physical—in an attempt to find these connotations in all architectural problems, with an interrelationship that is well balanced and filled with human content.

GEORGE M. BEAL
Head, Department of Architecture
University of Kansas
Lawrence, Kansas

I am particularly glad to get supporting evidence to the statement I had made that the breakaway from the Beaux Arts began early, in the liberal universities of the Middle West. C.F.

●

Dear Mr. Feiss: Personally I think it a good idea if someone were to "whip the dead horse." (And another as well.)

This is: getting down to cases and finding out just what it is that the architects expect of newly graduated draftsmen. I sure as Hell can't! It is a good subject for your current series.

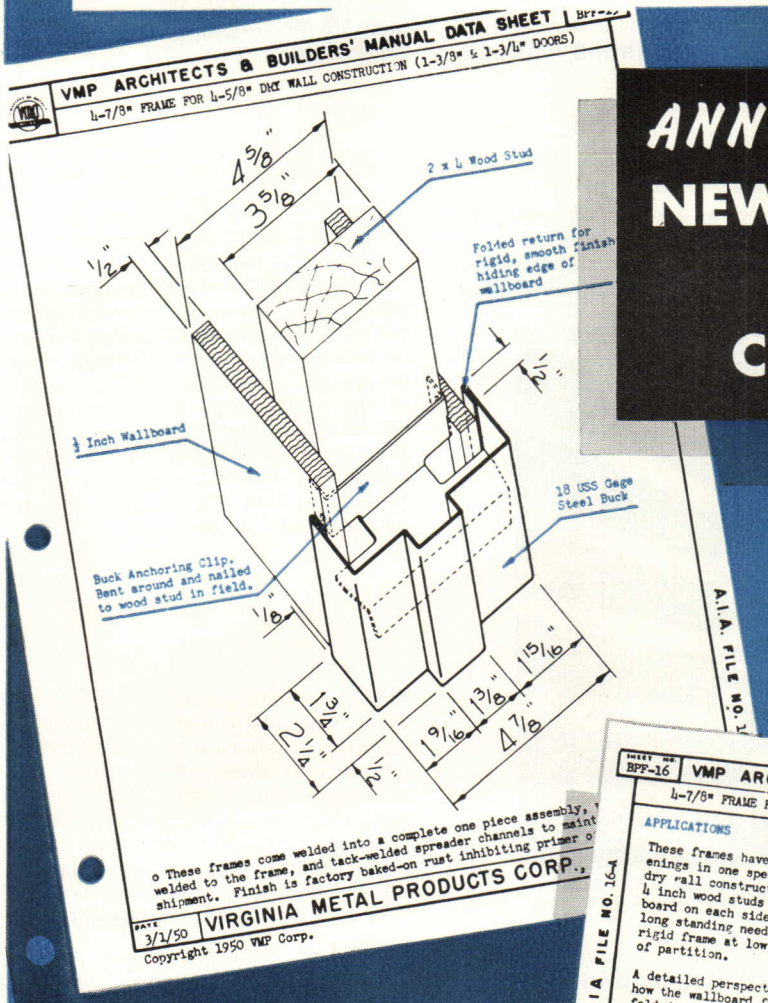
After seeing several dozen prospective employers—and having them drum a pencil against the desk while they tell you "it isn't just what we want" —I find they say you probably know nothing about the Code, then when you quote or show familiarity with it, they quickly bring up interior decorating.

Why don't you conduct a survey and find out just what it is they have this unabashed desire for in the young Corby Wright. (He was lucky to get to draw urinal details—and his story is mine!) I am positive you would be doing the young and perhaps too-eager draftsman a great service.

EDWARD K. SCHROEDER
Chicago, Ill.

I am afraid that I am in no position at this time to conduct a survey to find out what it is that the architects want of the young and eager draftsmen. There seems to be a great deal of confusion on this point in the minds of many of the educators, as well as the minds of the architects. You may remember that in my column in November, 1949, I stressed this point in discussing the "Ordeal by Disillusion." C.F.

Virginia Metal Products



ANNOUNCES...

NEW METAL FRAME for DRY WALL CONSTRUCTION

Frames, of 18 gage cold rolled steel, for either 1⅜" or 1¾" doors, are designed to fit 4⅝" thick dry walls. 3 stud anchor clips, floor anchor clip and non-template butt hinges come welded to unit. Frames are finished with factory baked-on rust inhibiting primer of red oxide.

A.I.A. FILE NO. 16-M

SHEET NO. BFF-16

VMP ARCHITECTS & BUILDERS' MANUAL DATA SHEET

4-7/8" FRAME FOR 4-5/8" DRY WALL CONSTRUCTION (1-3/8" & 1-3/4" DOORS)

APPLICATIONS

These frames have been designed for openings in one specific type of wall — dry wall construction made up of 2 by 4 inch wood studs with ½ inch of wallboard on each side. They thus meet a long standing need for a non-warping rigid frame at low cost for this type of partition.

A detailed perspective drawing showing how the wallboard fits snugly behind the folded return of the frame is on the other side of this sheet. Notice how the frame hides inaccurate cutting of the wallboard, saving time in installation. Grouting to smooth the joint is not necessary.

These frames are fabricated into one complete unit with rugged welds. NO ASSEMBLY ON THE SITE IS REQUIRED. Reinforced mortises for template or non-template hinges can be provided at slightly higher price if specified.

CONSTRUCTION (SPECIFICATION)

Frames shall be a complete welded assembly of 18 gage cold rolled steel designed to fit a 4-5/8" thick dry wall. Three stud anchor clips and one floor anchor clip shall be welded to each side jamb. 1 pair of 3½"x3½" non-template butt (4½"x4½" template for 1-3/4" doors) hinges shall be welded to the frame. (1½ pair for 3'-0" and 3'-4" jamb opening widths). Frames shall be cut out, reinforced and mortised for a Universal lock strike*.

Frames shall be finished with factory baked-on rust inhibiting primer of red oxide, and shipped with tack-welded channel spreaders to maintain shape. Jamb opening height shall be 80-5/16" and overall height 83-13/16" and jamb opening width (from table below).

* For Schlage Type A with 1-3/8" doors, and Schlage Type C or D with 1-3/4" doors unless otherwise specified.

CATALOG NUMBERS

STANDARD FRAMES FOR 4-5/8" DRY WALL CONSTRUCTION - IN STOCK

Jamb Opening Width	Left Hand, or Right Hand Reverse Bevel frames: For 1-3/8" x 6'-8" Doors	For 1-3/4" x 6'-8" Doors	For 1-3/4" x 7'-0" Doors	Right Hand, or Left Hand Reverse Bevel frames: For 1-3/8" x 6'-8" Doors	For 1-3/4" x 6'-8" Doors	For 1-3/4" x 7'-0" Doors
2'-0"	F-4781-1L	*	*	F-4782-1R	*	*
2'-4"	F-4781-2L	*	*	F-4782-2R	*	*
2'-6"	F-4781-3L	*	*	F-4782-3R	*	*
2'-8"	F-4791-4L	F-4783-2L	*	F-4782-4R	F-4784-2R	*
3'-0"	F-4791-5L	F-4783-4L	*	F-4782-5R	F-4784-4R	*

STANDARD FRAMES FOR 4-5/8" DRY WALL CONSTRUCTION - NOT STOCKED

1'-6"	F-4781-6L	*	*	F-4782-6R	*	*
1'-8"	F-4781-7L	*	*	F-4782-7R	*	*
1'-10"	F-4781-8L	*	*	F-4782-8R	*	*
2'-2"	F-4781-9L	F-4783-1L	F-4785-1L	F-4782-9R	*	*
2'-6"	*	*	F-4785-2L	*	*	*
2'-8"	*	F-4783-3L	F-4785-3L	*	F-4784-1R	F-4786-1R
2'-10"	*	*	F-4785-4L	*	*	F-4786-2R
3'-0"	*	F-4783-5L	F-4785-5L	*	F-4784-3R	F-4786-3R
3'-4"	F-4781-10L			F-4782-10R	F-4784-5R	F-4786-4R F-4786-5R

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it's the law

By BERNARD TOMSON

How far may a municipality go in limiting the minimum area upon which a residence may be constructed? This is a question which will assume increasing importance as a result of expanding activity in residential housing developments. There are a few cases in the United States which have touched upon the problem, but they by no means express uniformity in viewpoint.

Generally speaking, a municipality has the right to restrict the use of property in the exercise of its inherent police power. But such restriction must be reasonable and based upon the protection of the health, morals, and safety of the community. A zoning law may not be validly adopted where its purpose is esthetic, or artistic, or where its intent is to protect the value of large estates against the influx of persons with modest incomes.

●

The Appellate Division of the New York Supreme Court was called upon recently to determine the validity of a zoning ordinance which prescribed a minimum area of two acres for plots upon which residences were to be constructed. (Dillard et ano. vs. Village of North Hills). The court upheld the validity of this ordinance on the ground that it was neither unreasonable nor arbitrary.

The Village of North Hills is a residential community on Long Island in New York, containing, for the most part, homes of substantial character. The total number of property owners is 52 of whom 32 are resident property owners. The area of the Village is 1500 acres having an assessed valuation of $4,270,600.

There had not been any unusual real estate activity within the village at the time the suit was instituted. All of the property owners held at least two acres, with the exception of one who owned 1.9 acres on the outskirts of the village. He, however, had other adjoining property which was outside the incorporated village. The unincorporated area outside the village contained home developments on plots ranging from 8500 square feet to 15,000 square feet. Neighboring villages had developments on plots ranging from 12,000 square feet to one-half acre.

The plaintiffs purchased for $40,000 approximately 48 acres of land in the Village of North Hills. Two, two-acre plots were sold by the plaintiffs for the sum of $22,000. It was their desire to sub-divide the balance of their property into plots containing 10,000 square feet.

In their suit against the Village of North Hills, the plaintiffs contended

(Continued on page 140)

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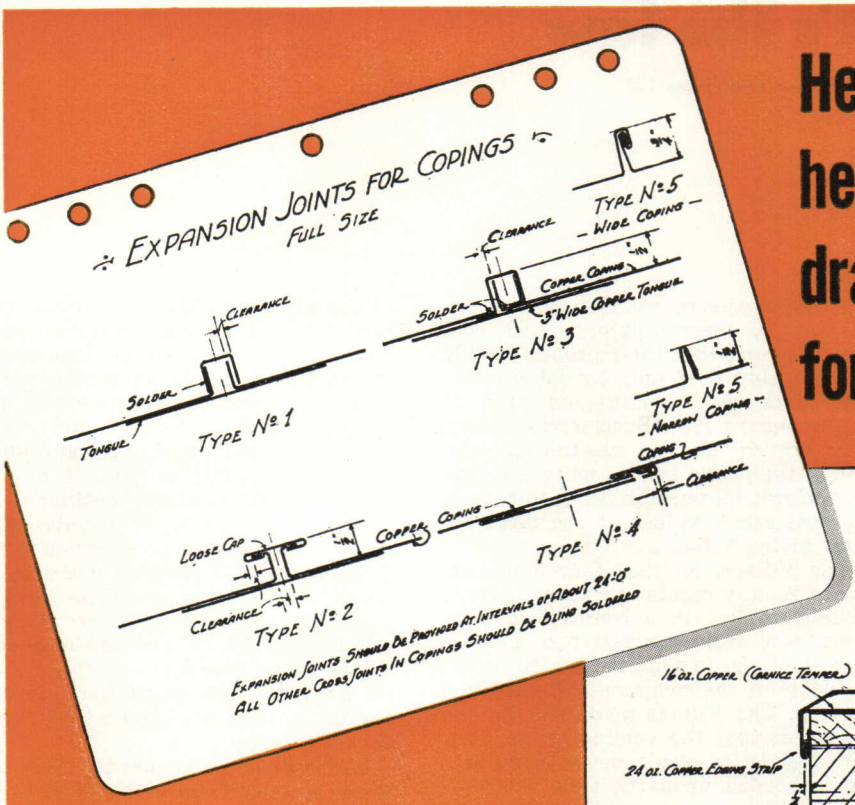

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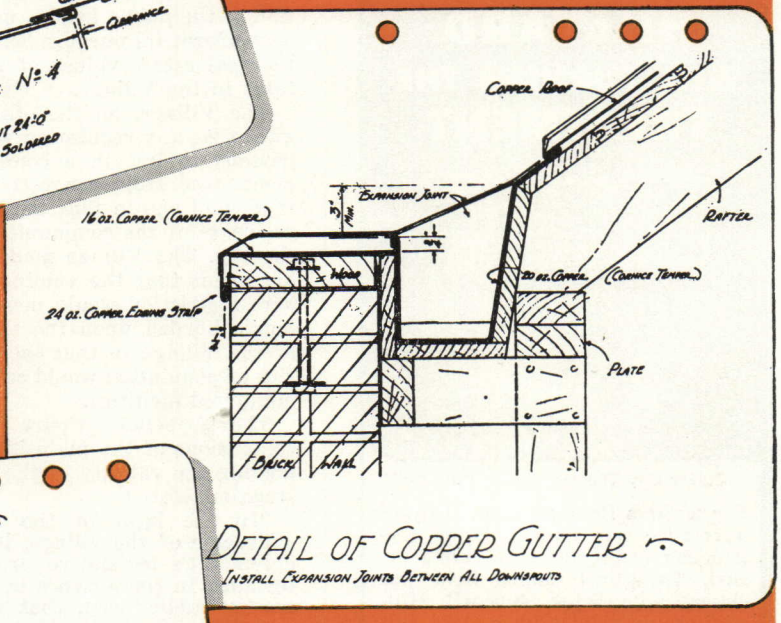

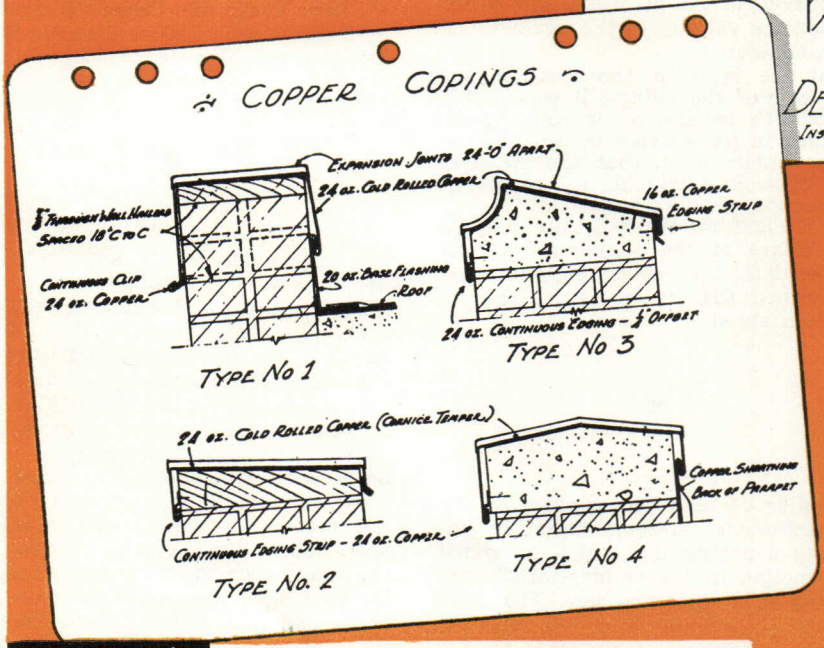

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(Continued from page 138)

that the two-acre restriction was unreasonable, discriminatory, and confiscatory, and that their property could be profitably used only by sub-division into plots with a minimum area of 10,000 square feet. Such a restriction, they argued, had no substantial relation to the public health, morals, safety or welfare; its purpose being to protect the real estate values of the large estates in the Village.

The Village, on the other hand, argued that any regulation which permits persons to live in a country environment, free from congestion and noise, is a valid one in that the health of the residents of the community is benefited thereby. The Village made the further argument that the voiding of the two-acre restriction would increase the economic burden upon the then residents of the Village in that the greater density of population would call for greater municipal facilities.

The Appellate Court rejected the contentions of the plaintiffs, and in upholding the validity of the two-acre restriction, stated:

"In the light of the location and character of the village, it was within defendant's legislative province to determine, in the absence of proof of superior public need, that the two-acre restriction is justifiable as an elastic application of police power . . ."

In the absence of proof that the public welfare of the residents was not enhanced by the restriction, the court determined that it would let the restriction stand.

●

A similar decision was reached by the Massachusetts Supreme Court in upholding a zoning law which restricted construction in the residential district to plots of at least one acre. The court in that case found that the town in question was particularly available for residential purposes because of its nearness to Boston, and was suitable for those "who desire the advantages of quiet and beauty of rural surroundings." The court further found that a one-acre restriction protected the health, safety, and welfare of the community by preventing noise, congestion, and overcrowding, and by permitting adequate air, sunshine, rest, and relaxation. In the opinion of the court these factors were sufficient to justify the ordinance and to prevent the court from substituting its judgment for that of the town legislature.

Yet many decisions in other cases pertaining to certain restrictive zoning have declared such restrictions invalid. It has been held that a zoning regulation which provided that more than 14 families could not be accommodated on an acre of land was invalid and unreasonable if applied to flats. It has also been held that a zoning ordinance regulating the density of population by limiting the use of property in a residence zone to 36 families per acre was invalid. Still other decisions have declared invalid regulations describing the minimum width of side and rear yards where no relationship was found to exist between such regulations and the health, morals, and general welfare of the community.

It should be noted that the New York Court in the Village of North Hills case has upheld a zoning restriction of greater area than any other reported judicial decision. This determination may be appealed to the highest court of New York, the Court of Appeals, and will be reported on if that court is asked to consider the appeal.

●

The reasonableness of any restriction upon use or size depends upon the nature, location, and characteristics of each individual community. The upholding of a one- or two-acre restriction for one community would not, of necessity, be a precedent for the validity of such an ordinance in another community.

There is an indistinct point at which an acreage restriction is no longer substantially related to health and welfare, but becomes arbitrary and unreasonable. Where this point is reached and the line drawn must be determined by the courts in each individual case. The only conclusion that can be ventured at this time is that the extent is indefinite and uncertain, to which a municipality may go in limiting acreage upon which a residence may be constructed.

To discuss a two-acre or a one-acre or even a substantially smaller acreage restriction in times of "health and welfare" is obvious sophistry. Such restriction can pragmatically be justified only on the ground of esthetics—whatever words the courts use. Until that word finds its place alongside "health and welfare," the validity of ordinances will be judged by the last phrase alone—even if its distortion beyond recognition is required to justify the results.

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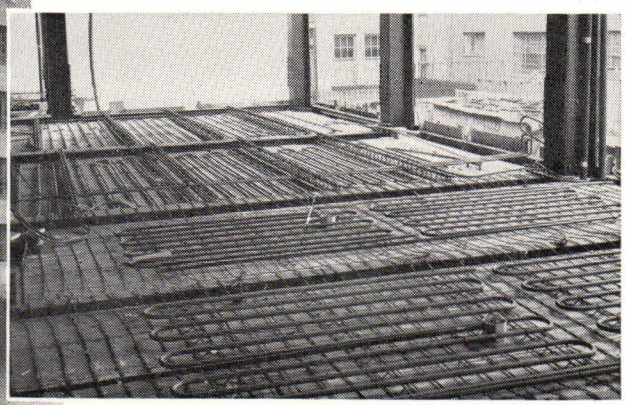

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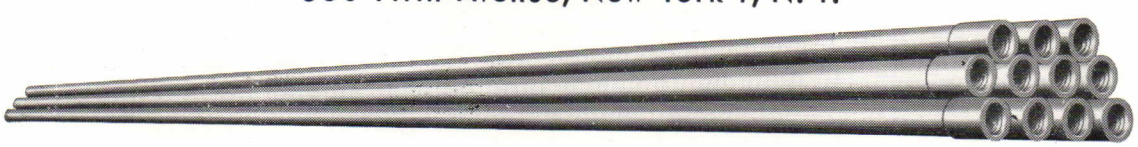

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DESIGNER DRAFTSMAN—man, 39, with excellent experience and ability in contemporary design desires position in medium-sized firm, Louisville or vicinity. Salary secondary to opportunity. All phases of work. Box 300, PROGRESSIVE ARCHITECTURE.

ARCHITECT AND ENGINEER—31, wants location in small office in friendly town within 3 rail hours of New York. Michigan graduate, good record with several offices doing contemporary school, hospital, church and commercial work. Skilled all phases. Box 305, PROGRESSIVE ARCHITECTURE.

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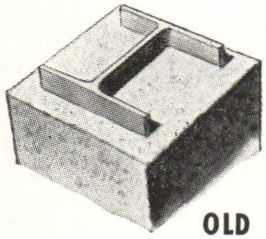
Cut Costs...Weight and WORK in Fireproofing STRUCTURAL STEEL

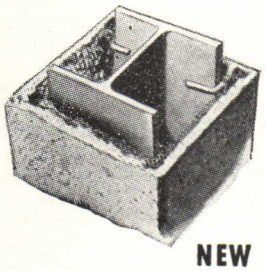
In recent Underwriters' Laboratories tests, columns fireproofed with Zonolite* vermiculite plaster as illustrated received a 4 hour rating for 1½" thickness and 3 hours for 1". Similar exceptional ratings have also been obtained for Zonolite plaster fireproofing for beams, trusses, floors and ceilings.



OLD WAY

SAVES WEIGHT

Weight saving as compared to ordinary fireproofing methods is enormous. Form construction is eliminated, lighter steel members can be used, and building time is reduced while rentable space is increased.



NEW WAY

MANY USES

For all other plastering needs, too, Zonolite offers many advantages. Only ⅓ the weight of sand plaster, it sticks better and with fewer droppings. The finished plaster is so tough a hammer blow only dents it and it doesn't chip even when nails are driven into it. For booklet showing uses, techniques, and fire-tests, mail coupon below.

ZONOLITE COMPANY
Dept. PA-50
135 S. La Salle St.
Chicago 3, Illinois

Fireproofing with Zonolite plaster calls for no new methods or skills. It is applied in a manner familiar to all plasterers.

ZONOLITE BRAND VERMICULITE INSULATION

Member of the Vermiculite Institute

MAIL COUPON FOR DETAILS

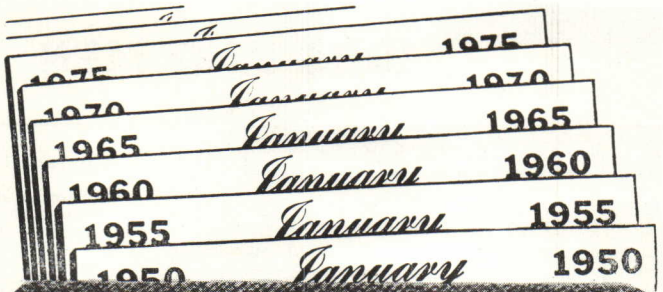
ZONOLITE COMPANY—DEPT. PA-50
135 S. LaSalle St., Chicago 3, Ill.
Gentlemen: Please send me booklet showing uses of Zonolite Vermiculite Plaster Aggregate for fireproofing.

Name.....

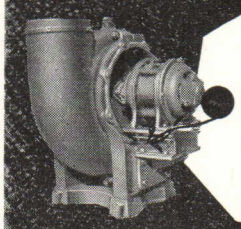
Address.....

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

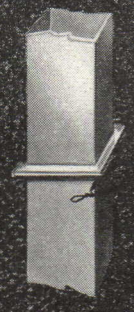
*Zonolite is a registered Trade Mark



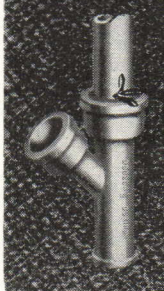
FOR TROUBLE-FREE YEARS OF CORROSIVE WASTE DISPOSAL



DURCO EXHAUST FANS — Made in Durco corrosion-resistant alloys, Duriron, Durichlor or Durimet. Capacities from 20 to 5,000 c.f.m. Write for Bulletin 1103.



DURIMET 20 SHEET—For Fume Ducts and Hoods. A special Durco stainless steel with far greater corrosion resistance than ordinary stainless. Write for Bulletin 502.



DURIRON BELL AND SPIGOT DRAIN PIPE—Made of Duriron, a high-silicon iron alloy that withstands the attack of all commonly used acids except hydrofluoric and sulfurous acids and oleum. Standard sizes 1½", 2", 3", 4", 5", 6" and 8". Write for Bulletin 703.

Here are two important facts about the service-life expectancy of corrosive-waste systems

1. An investigation of a large number of chemical laboratory waste systems showed that ordinary materials last an average of *less than two years* in this service.

2. Durco equipment has *permanent* corrosion-resistance as thick as the metal itself. As a result of this alloyed-in self-defense, *Durco equipment installed more than twenty years ago is still in service, today.*

Remember these two points when you specify the exit route for corrosive liquids or fumes.

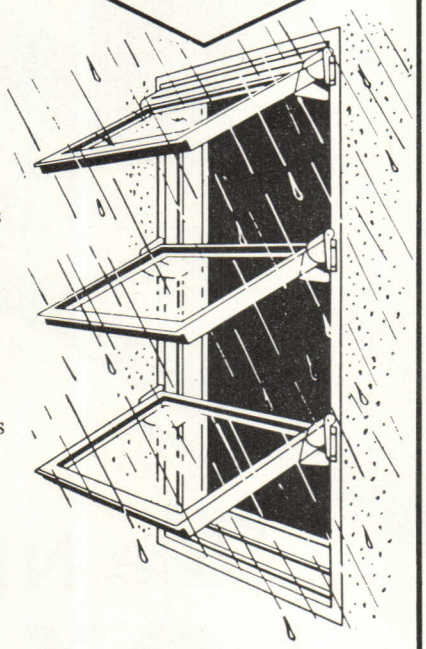
DURCO Adv. 109-GM

DURCO CORROSION RESISTING ALLOYS & EQUIPMENT

THE DURIRON CO., INC.
DAYTON 1, OHIO
Branch Offices In Principal Cities

ALWAYS RAIN-TIGHT HERE—

Head of top sash protects against rain even when window is open!



Well aware that dropping the top sash would allow rain to enter and ruin floors, furnishings and decoration, Gate City designed its awning windows with fixed hinges throughout.

This feature is one of the most important points to look for in the awning windows you specify or install. It symbolizes the careful attention Gate City gives to all requirements of service.

Add to this weathertightness the other Gate City advantages of easy weatherstripping, elimination of condensation, economy of maintenance, factory-applied toxic treatment—all proved by more than 10 years of satisfactory service on countless installations, and you have *many* important reasons why these beautiful windows are preferred by leading architects and builders all over the country.

SEE OUR CATALOG IN SWEET'S

NEW MAINTENANCE HINGE

Top sash drops to permit cleaning or painting from indoors.

For complete information about Gate City Awning Windows for homes and institutions, see our catalog in Sweet's, or write Gate City Sash & Door Co., Dept. PA-5, Fort Lauderdale, Florida.

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WOOD AWNING WINDOWS

Toxic-treated against rot—fungus—termites

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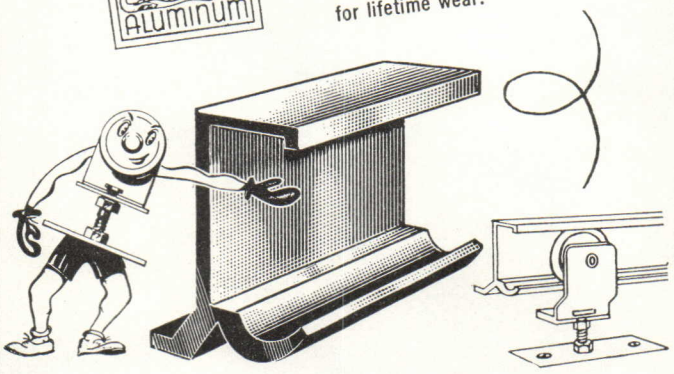
ROLLING DOOR HARDWARE

-- made from the Quality Products of America's Leading Manufacturers

TRACK BY REYNOLDS

Produced by Reynolds Metals, the aluminum alloy extrusion used for the Har-Vey track is specially designed for smooth, silent rolling -- and specially processed for lifetime wear.



It's the nation's leaders giving their best that puts Har-Vey Hardware ahead of the rest!

It's leading concerns such as

THE CHRYSLER CORPORATION,
ANACONDA COPPER, FORMICA,
AND REYNOLDS METALS

-- all contributing the best of materials and workmanship as producers of component parts for Har-Vey Hardware --that makes Har-Vey first in its field for quality.

Yes, and it's advanced design that gives Har-Vey *engineering* leadership -- with new features that make it completely rustproof and assure positive locking -- with superlative ease of installation -- and with smooth, silent rolling that's sure to last for a lifetime.

Check all the facts yourself! Send today for free folder giving full information on Har-Vey Hardware and varied uses of rolling doors -- with installation details.

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METAL PRODUCTS CORPORATION

HAR-VEY HH HARDWARE

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Please send me your free folder on rolling doors & Har-Vey Hardware

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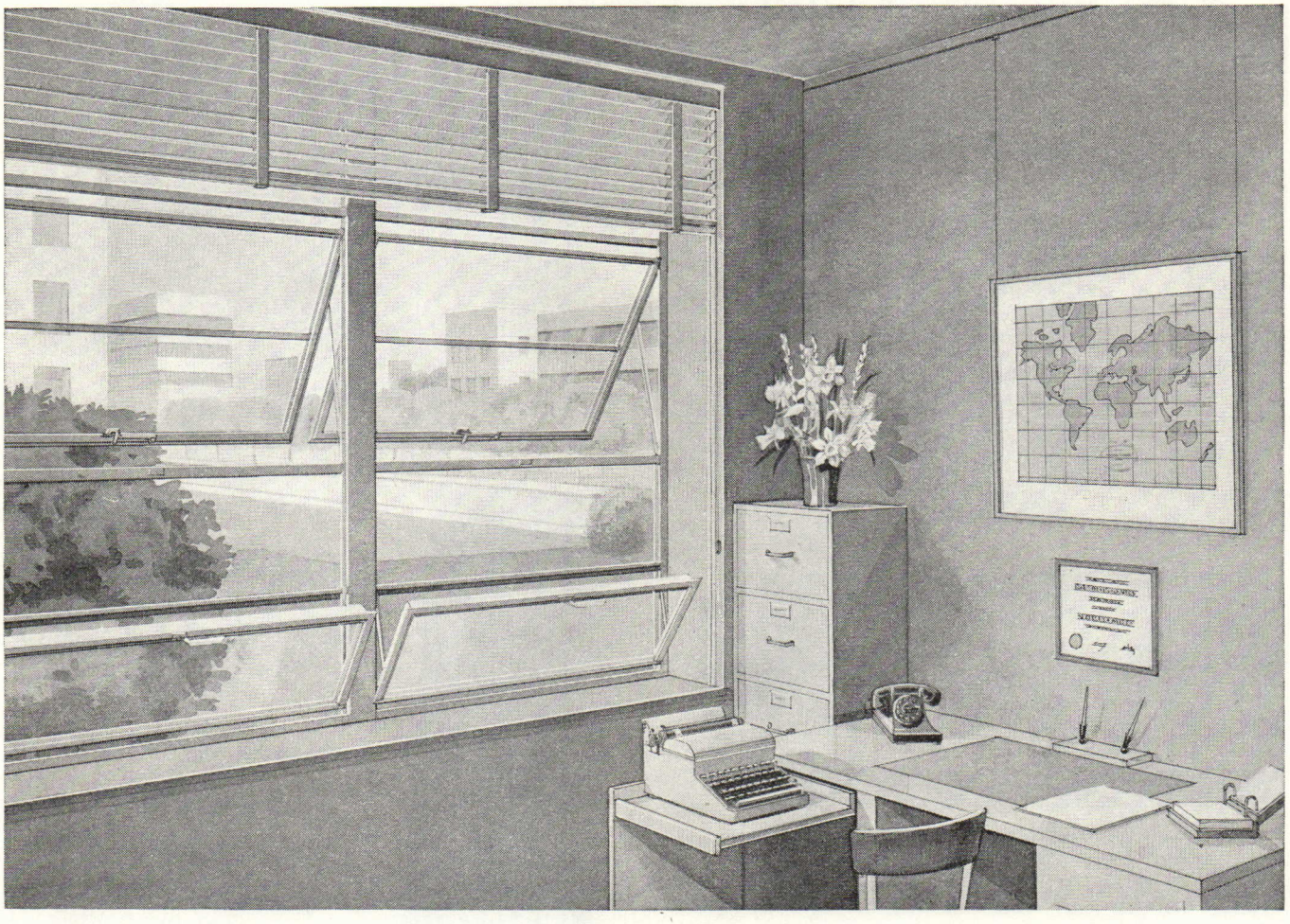


NEW LUPTON "MASTER" ALUMINUM WINDOW

Here is the newest member of a great family of metal windows — the new Lupton "Master" Aluminum Window — especially designed for hospitals, schools and office buildings. Here are new opportunities in window planning . . . new standards of high durability and low maintenance costs.

Lupton Metal Windows are the result of more than forty years of constant development of new designs, new materials and new production techniques. Include the strength and beauty of this newest Lupton Window — the new Lupton "Master" Aluminum Window — in your 1950 plans for hospitals, schools and office buildings. Write for Data Sheets today.

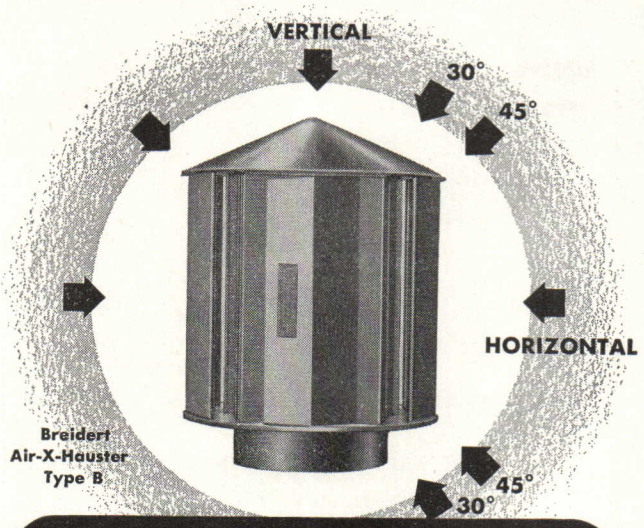
MICHAEL FLYNN MANUFACTURING COMPANY
700 East Godfrey Avenue, Philadelphia 24, Penna.
Member of the Metal Window Institute

Check These 4 Advantages Of The New Lupton "Master" Aluminum Window

1. NEW DEEP SECTIONS — Both frames and ventilators 1⅝ inches—sturdier without sacrificing lightness. Added strength.
2. PRECISION WEATHERING — Ventilators fit snug and tight—naturally—without forcing. Full 5/16 inch overlapping contact.
3. SPECIAL HEAT TREATED ALUMINUM ALLOY used in this new Lupton Window eliminates painting and costly repair and maintenance.
4. STURDY CONSTRUCTION Welded ventilator corners —strength where strength is needed.

LUPTON METAL WINDOWS

First Ventilator with Certified Capacity Ratings!

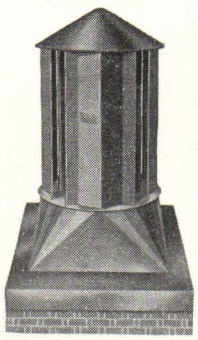


Breidert Air-X-Hausters

PATENT NO. 2269428

The Revolutionary Improvement in Roof Ventilators and Chimney Tops

Only the Breidert Air-X-Hauster offers certified capacity ratings based on tests* made with wind blowing in *all* directions as shown above. Only such tests can guarantee the capacities a ventilator will deliver under actual operating conditions! No matter which way the wind blows, barring interior negative pressures, the Breidert provides safe, sure ventilation.



For Chimney Tops . . . the Breidert Air-X-Hauster stops down-draft, exhausts smoke and fumes, completely overcomes sluggishness caused by down-draft. Thousands of Breiderts are in use all over the country.

For Vent Flues . . . the Breidert succeeds when conventional ventilators fail because it completely eliminates back-draft where no interior negative pressure exists. Postive flue action is assured regardless of wind direction. The Breidert is more compact and neat in appearance.

For Roof Ventilating . . . the Breidert is unsurpassed in efficiency, economy and appearance for use on residential, commercial and industrial buildings of all types. Stationary . . . no moving parts . . . nothing to jam or get out of order.

SEND FOR FREE ENGINEERING DATA BOOK . . .

use the coupon for complete information on the Breidert Air-X-Hauster, including certified capacity ratings.

** By Smith, Emery & Co. of San Francisco, Pacific Coast Branch of the Pittsburgh Testing Laboratory.*

THE G. C. BREIDERT CO.

The G. C. BREIDERT CO., Dept. P
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Los Angeles 65, California

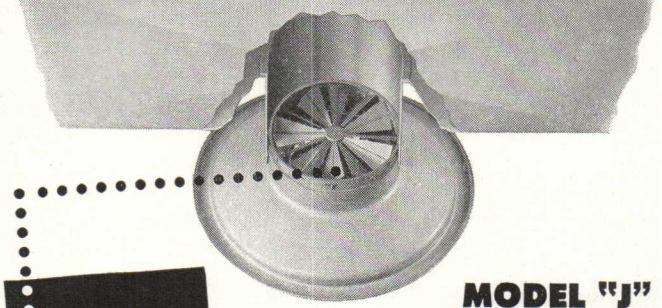
Please send Engineering Data Book. No charge or obligation.

Name .....

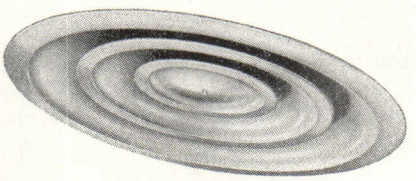
Street .....

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

venturi-flo CEILING OUTLETS



MODEL "J"



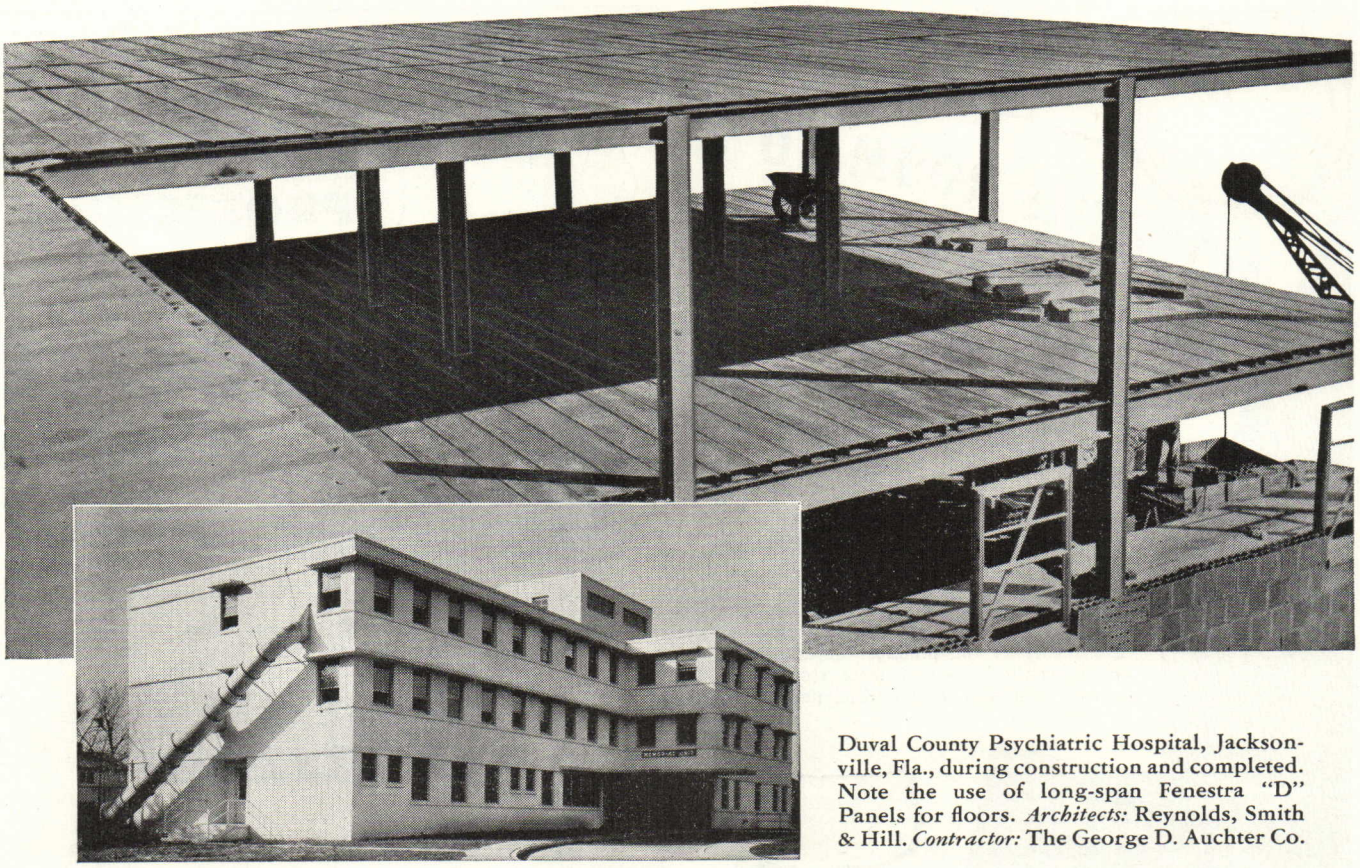
ADJUSTABLE AIR PATTERN + INTEGRAL VOLUME CONTROL

- LOW NOISE LEVEL
- LOW PRESSURE DROP
- ENGINEERED FOR COMFORT CONDITIONING
- FLUSH MOUNTING
- SUPPLY AND EXHAUST
- COMPLETE RANGE OF SIZES

Model "J" VENTURI-FLO Ceiling Outlets are available with a built-in volume control as shown above. Blades are gang-operated and opposed-blade design provides positive air control and uniform distribution of air in throat of outlet. A concealed adjusting lever is accessible after unit is placed in service. Model "J" Ceiling Outlets provide adjustable air pattern over a wide range by means of a key socket which raises or lowers the inner assembly. *For full information, see your Barber-Colman representative or write for Bulletin F-4085.*

BARBER COLMAN

BARBER-COLMAN COMPANY
1230 ROCK STREET, ROCKFORD, ILLINOIS



Duval County Psychiatric Hospital, Jacksonville, Fla., during construction and completed. Note the use of long-span Fenestra "D" Panels for floors. *Architects:* Reynolds, Smith & Hill. *Contractor:* The George D. Auchter Co.

Who said Construction Costs for Fine Hospitals can't be lowered?

See how the use of Fenestra* "D" Panels helped reduce the cost of the Duval County Psychiatric Hospital:

These light-gage metal building panels for floors eliminated a great deal of structural steel. They are long span, strong, and structural themselves . . . as you can see in the picture above. What supporting structure is needed is lighter and less expensive.

Quickly laid and interlocked, Fenestra Building Panels form a floor so that other trades can move in and finish their work in less time. Several high-priced trades can be eliminated altogether. If the flat surface of these good-looking panels forms the ceiling, plastering is unnecessary. Material, time and labor are saved all along the line.

Delivered with a baked-on coat of prime paint, Fenestra Panels require no more maintenance than another layer of paint.

Steel is noncombustible. Fenestra Panels will stand fire-guard between the stories of your hospital.

If you wish, Fenestra Panels can be perforated and backed with a sound-absorbing element.

Add these benefits up and you see what an inexpensive, dual-purpose panel package this can be: structural material, strong floor or finished ceiling, a built-in acoustical treatment, a safety measure against fire. For further information, mail the coupon. Or call your Fenestra Representative, listed in the yellow pages of your telephone directory.

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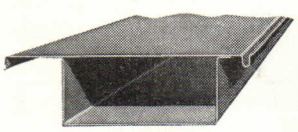

TYPE D FOR FLOORS. Box beam formed by welding together two steel sections. Side laps interlock to form continuous flat surface. Standardized in 16″ width. Depth 1½″ to 9″. Gages 18 to 12. Type AD available with two flat surfaces.

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Building Panels Division
Dept. PA-5, 2253 E. Grand Boulevard
Detroit 11, Michigan

Please send me, without obligation, information on Fenestra Building Panels.

Name_____

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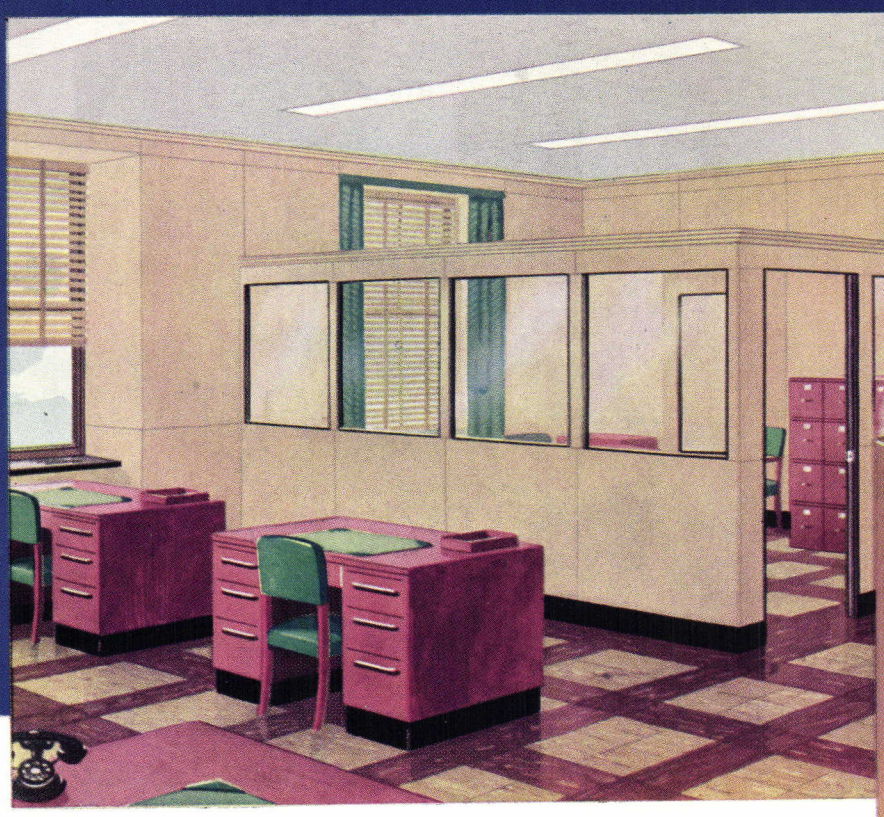
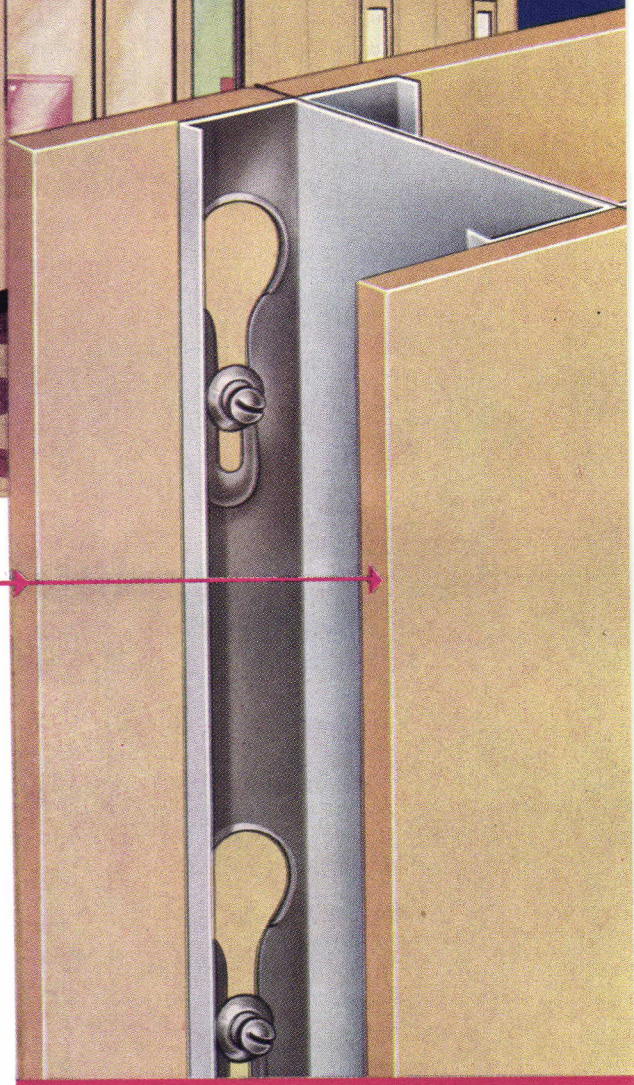
Address_____

NOW! Asbestos Movable Walls WITH THE PANELS "integrally colored"





NOTE HOW THE COLOR GOES ALL THE WAY THROUGH!

No paint to wear off, chip, or peel . . .

A totally new and important feature has been combined with the basic advantage of *flexibility* in J-M Movable Wall construction.

Johns-Manville scientists have perfected a process for introducing inorganic pigments throughout the asbestos panels used in J-M Movable Walls.

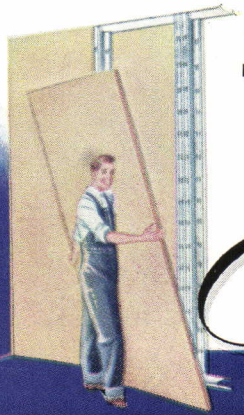
As a result, these beautifully-textured, fireproof panels are now "integrally colored" at the factory. That of course means the color is not a painted or baked-on surface coating; it is an *intrinsic* part of the structural material—goes *all the way through* each panel.

With no paint to wear off, chip, or peel, your walls will have that "first-day newness" *every day* for years and years to come!

By eliminating the cost of periodic painting and decorative treatment, the new Transitone Movable Walls will help you to meet your wall-and-partition requirements *economically*.

Transitone panels are hung on steel studs, forming a 4" double-faced partition. Also used as interior finish for the outside walls. Lighter than ever, they are readily installed or re-located. For details or an estimate, write Johns-Manville, Box 290, New York 16, N. Y.

Cutaway of J-M Movable Wall construction. The 7/16"-thick asbestos panels, on patented steel studding, are available in a light tan or light green. Note color is not a surface coating; it actually goes *all the way through* each panel.



Johns-Manville

JOHNS-MANVILLE JM PRODUCTS

Transitone

MOVABLE WALLS *with asbestos panels colored all the way through*

DESIGN...Unlimited!

EFFICIENCY...Unexcelled!

BEAUTY...Unrivalled!

ONE AND ONLY ONE AIR DIFFUSER GIVES YOU ALL THREE

AGITAIR®

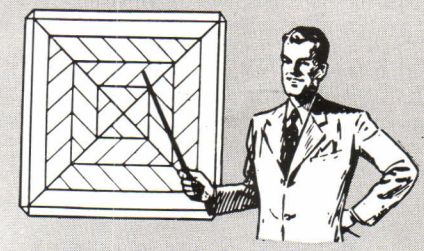
SQUARE & RECTANGULAR AIR DIFFUSERS

Design: AGITAIR square and rectangular air diffusers are tailor-made to suit conditions of each application. The vanes and louvres are assembled in a variety of arrangements to provide blows in ONE, TWO, THREE or FOUR directions.

Efficiency: AGITAIR square and rectangular air diffusers assure 100% control of air volume and direction of discharge from any location without the use of makeshift blank-offs or oversized outlets. Put them anywhere—center of ceiling, off-center or corner . . . sidewall or baseboard. Yes—AGITAIR diffusers give you maximum efficiency from any location.

Beauty: AGITAIR square and rectangular air diffusers, available in numerous vane arrangements and patterns, blend perfectly with modern ceiling treatments. They are the natural choice of designers to complete an artistic decorative effect.

Here's the Secret of Greater Diffusing Ability:



Patented built-in vanes deflect the air in numerous divergent streams resulting in turbulence at the point of contact with the aspirated air. Result: Rapid mixing, diffusion and temperature equalization.

Write for Complete Data

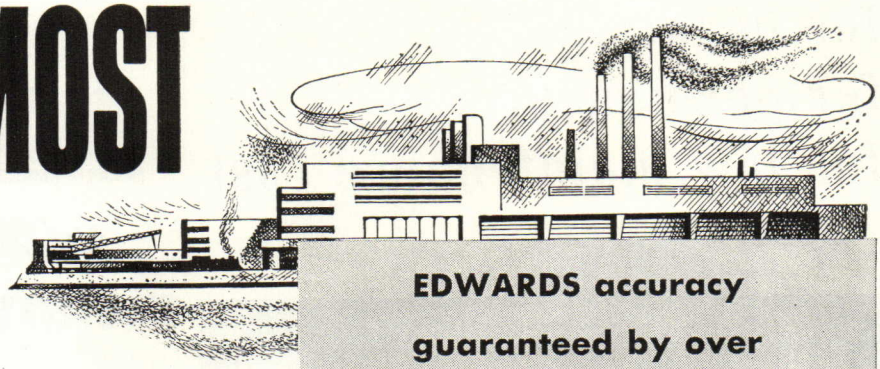
AIR DEVICES, INC.

17 EAST 42nd ST. • NEW YORK 17, N. Y.

AIR DIFFUSERS • AIR FILTERS • ROOF EXHAUSTERS

THE DIFFUSING VANES MAKE THE DIFFERENCE

WORLD'S MOST ACCURATE CLOCK SYSTEM!



EDWARDS accuracy guaranteed by over 17 Billion Dollars worth of electrical generating plants

"18 Years Without a Service Call!" R. L. F. Biesemeier, Supervising Engineer of the New Trier Township High School, Winnetka, Ill., reports: "In the 18 years since our first Telechron-powered synchronous clock and program was installed we have never called for a serviceman. We recommend Edwards Telechron-powered Clock and Program Systems without reservation."

EDWARDS

Synchromatic CLOCK SYSTEMS

accurate to the second...*every* second!

● Next time the question of a clock system comes up, visit your central power station.

You'll see your time "manufactured" with split-second accuracy... note that the vital job of *keeping* alternating current frequencies on the nose is entrusted *only* to a *Telechron* Master Clock!

Edwards Synchromatic Clocks employ the *same* type of matchless Telechron synchronous motors! That's why no other type of clock system can challenge Edwards for constant, *correction-free* accuracy!

This accuracy is achieved with *unequalled* simplicity! No master clocks, no temperamental electronic devices, no delicate pendulums requiring servicing and regulation. Over the *years,* a service call on an Edwards Synchromatic Clock System has become the exception, never the rule.

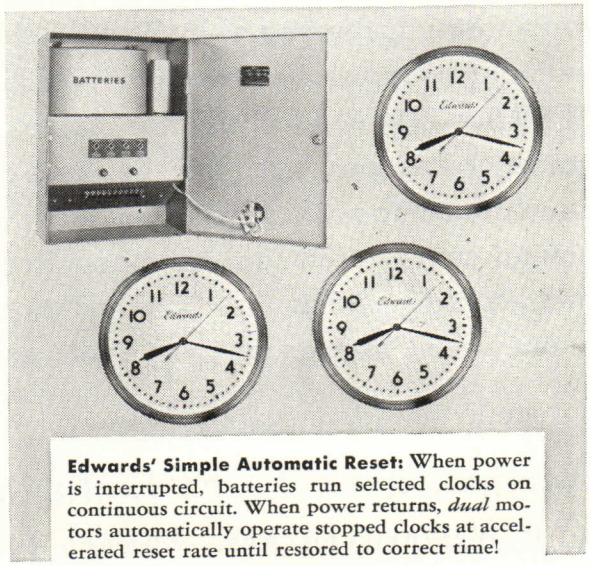
Edwards Scientific Engineering

A product of 78 years of pioneering research and progress, Edwards' advance-design engineering has been applied with equal success to school fire alarm, communication and program systems.

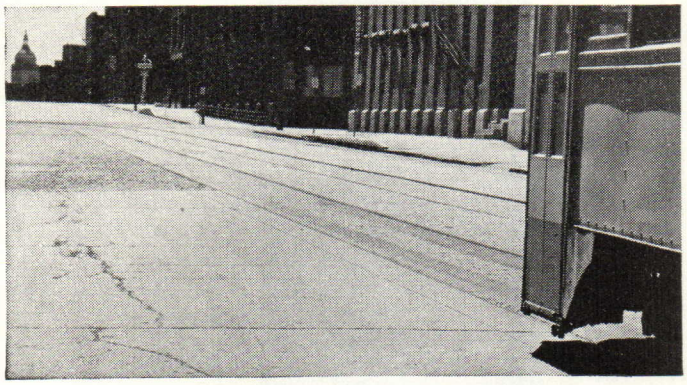
Complete literature on request.

EDWARDS COMPANY, INC., NORWALK, CONN.

In Canada: Edwards of Canada, Ltd.



Edwards' Simple Automatic Reset: When power is interrupted, batteries run selected clocks on continuous circuit. When power returns, *dual* motors automatically operate stopped clocks at accelerated reset rate until restored to correct time!

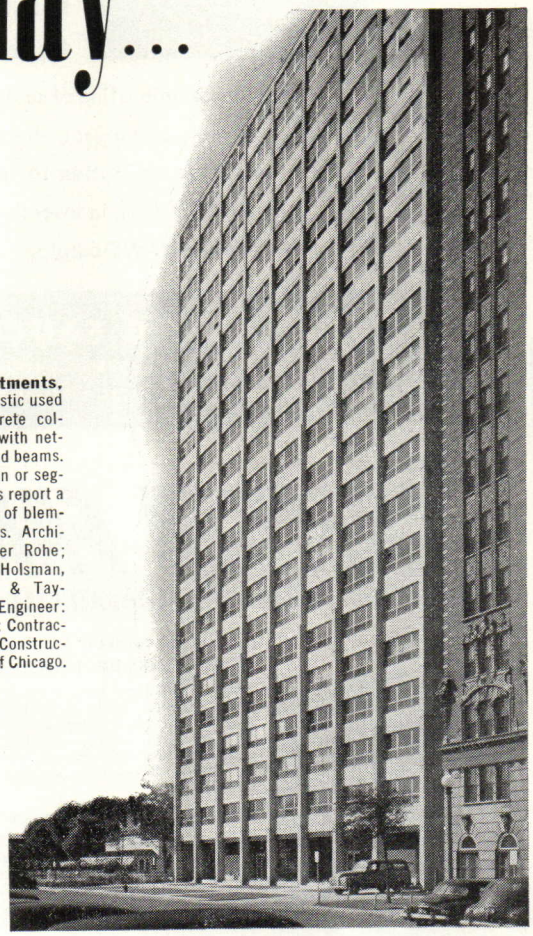


Ten Years Ago...

this test paving was laid in Minneapolis—the first commercial use of Atlas Duraplastic air-entraining cement. Badly scaled background section was made with regular cement. Foreground concrete was laid at the same time with Duraplastic. Here are both sections, photographed ten years later, after ten severe winters, heavy applications of de-icing salts and many freezing-thawing cycles—convincing proof of Duraplastic concrete's lasting durability. Longitudinal structural crack shows some raveling. Note perfect transverse joint.

A Decade of ATLAS DURAPLASTIC AIR-ENTRAINING PORTLAND CEMENT

Today...



Promontory Apartments, Chicago, Ill. Duraplastic used throughout in concrete columns 12 feet deep with network of steel bars and beams. No sign of water-gain or segregation. Contractors report a smooth surface free of blemishes or air bubbles. Architects: Mies van der Rohe; Pace Associates; Holsman, Holsman, Klekamp & Taylor; Structural Engineer: Frank J. Kornacker; Contractor: Peter Hamlin Construction Company—all of Chicago.

for extra durability . . . modern structures are built with ATLAS DURAPLASTIC*

That first test paving began a new era in concrete construction. As successful installations with Atlas Duraplastic have multiplied, so have the number of engineers and contractors who rely on its extra durability and improved performance for structural work. An outstanding example is this new apartment building, designed for simple beauty, constructed with Duraplastic by the most modern, economical methods.

Over the last ten years, Duraplastic's advantages have been applied to all types of mass and structural concrete—for foundations, walls, columns, and floors. It's ideal for slip-form, gunite, stucco and similar uses.

With Duraplastic, less mixing water is needed for a given slump. The resulting mix is more plastic, more workable, more uniform and more cohesive. It's easy to place and finish. Water-gain and segregation are reduced. Surface appearance is improved and has higher resistance to the effects of weather-exposure.

For structural concrete needs of today and tomorrow, Duraplastic offers better concrete at no extra cost. It provides the precise amount of air-entraining agent interground with the cement for satisfactory field performance. It complies with ASTM and Federal Specifications, sells at the same price as regular cement and calls for no unusual changes in procedure.

Send for new free booklet, *"A Decade of Duraplastic Air-Entraining Cement." Write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York 17, N. Y.*

OFFICES: Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

**"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.*

PA-D-103

ATLAS DURAPLASTIC TRADE MARK REG. U. A. C. CO.

AIR-ENTRAINING PORTLAND CEMENT

MAKES BETTER CONCRETE AT NO EXTRA COST

A UNIVERSAL ATLAS PRODUCT

"THE THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—NBC Network*

D.I.P. Solves UNDERGROUND & EXPOSED PIPING PROBLEMS

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When architects and contractors have difficult insulating problems in the conveyance of steam, hot water, or refrigerants, they most often find the answer in DURANT INSULATED PIPE.

Because the positive protection is always dependable and the non-porous asphalt is completely waterproof, D. I. P. will not lose efficiency with the passage of time. This long service dependability with its low maintenance costs adds to the over-all economy of DURANT installations.

If you do not have complete catalog information and engineering data on DURANT products and processes, we will send them on request — or you can secure them through our representatives located in principal cities over the entire country.

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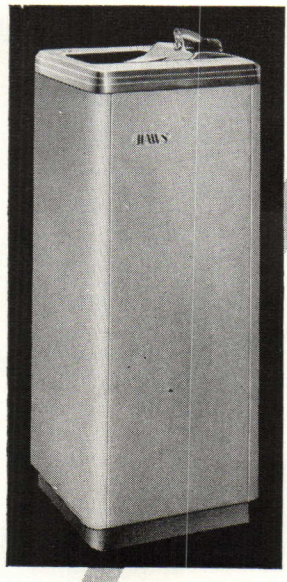

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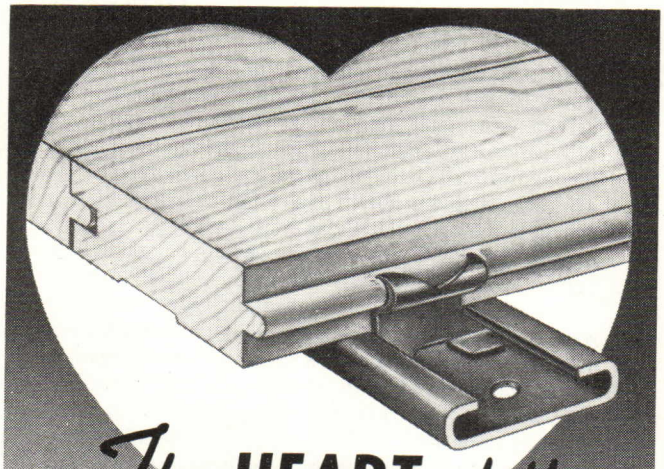

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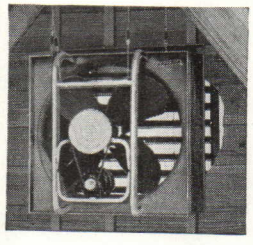

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Package Unit, Comfort Cooler TYPE EH—
Chelsea spring-mounted, WALL-TYPE package fan complete with springs and sash chain for rafter or ceiling mounting, canvas boot, and automatic outside louver. Simple to install, belt driven, exceptionally quiet. Sizes 24" to 60".

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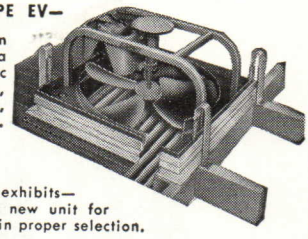

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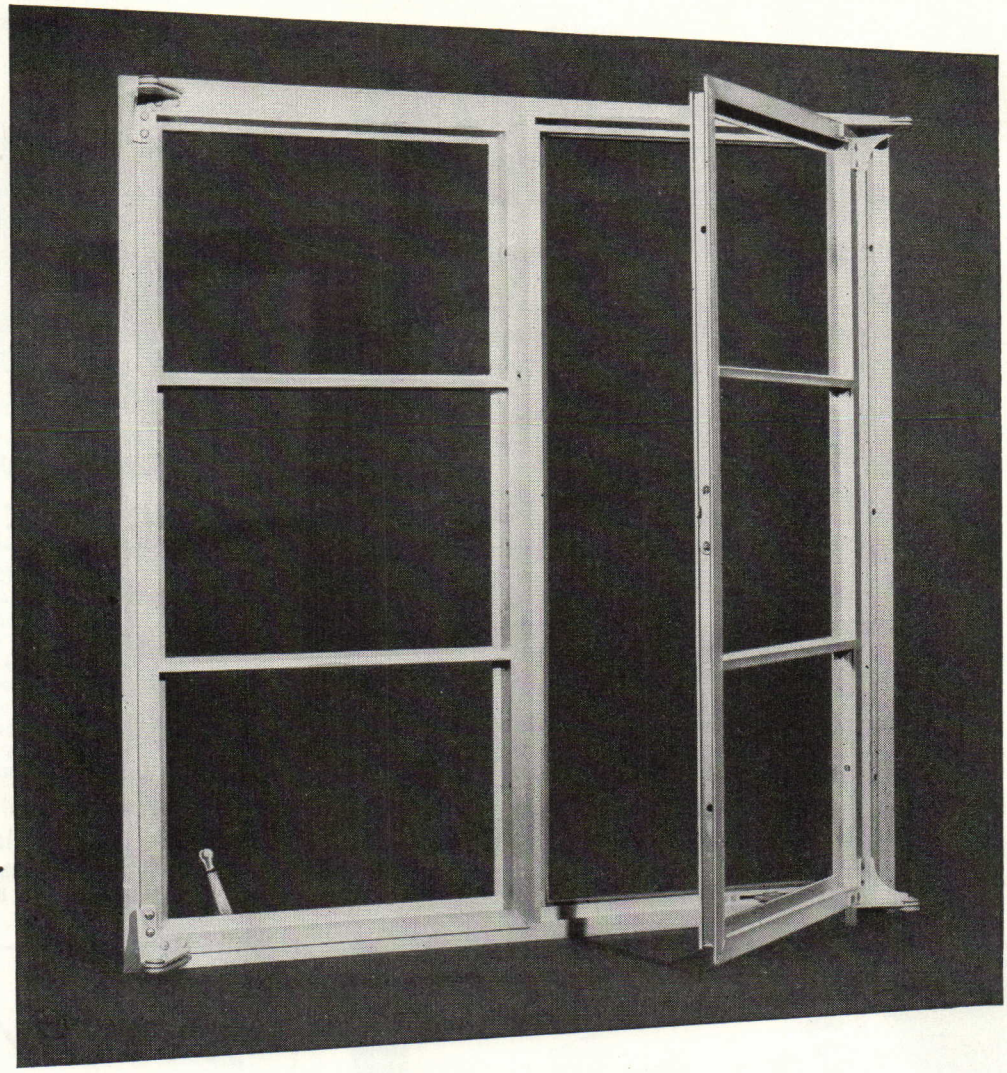

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IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

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Window Specifications Start Here...

"...as manufactured by Reynolds Metals Company...made of solid extruded aluminum shapes of not less than ⅛" in thickness ...special alloy of not less than 17,000 pounds tensile strength psi...Frames shall be Zee sections 1" in depth and ⅞" in cross section, and will provide continuous double contact...All corners shall be electrically flash welded...Satin type finish and protective lacquer coating..."

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CUT APPLICATION COSTS

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CATALOG 14b/3 in SWEET'S

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Adaptable to any plan

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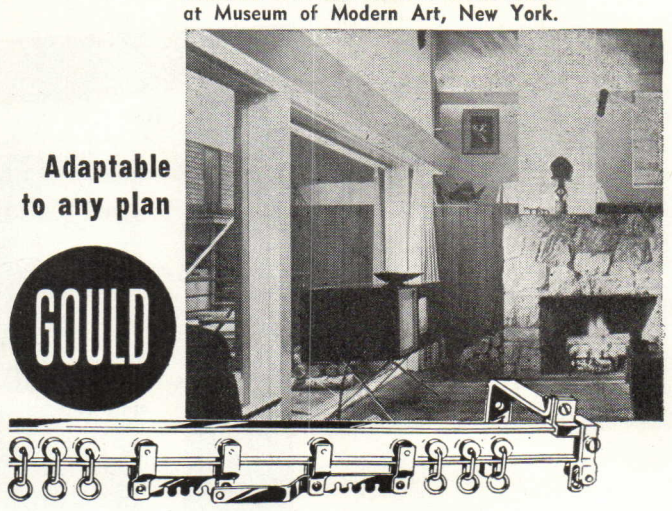

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Write for our complete catalog TODAY.

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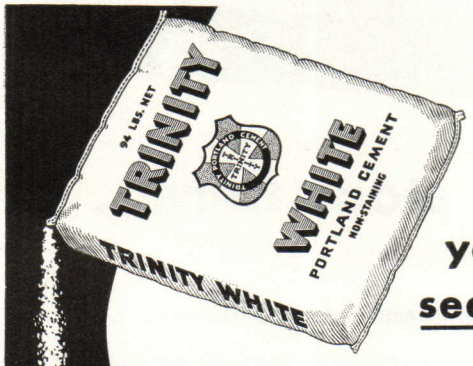

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is the whitest white cement!

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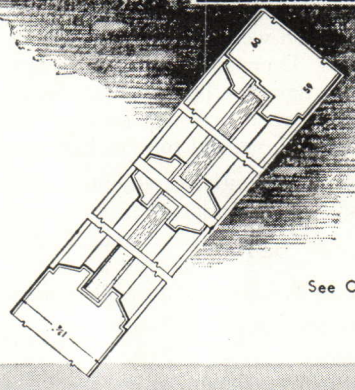
as white  as snow

Hollow Metal



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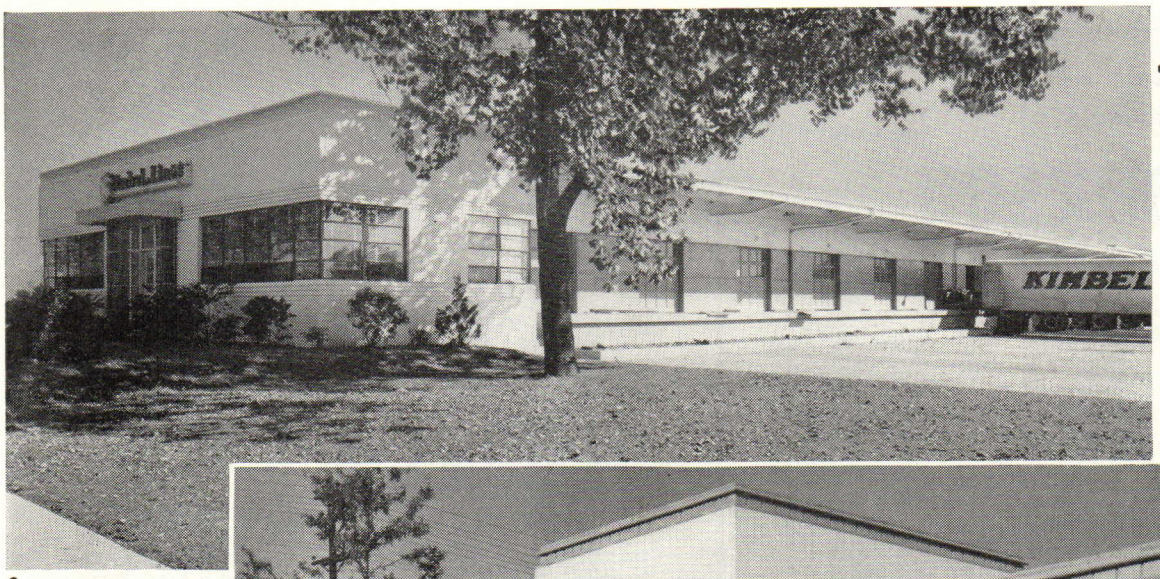

Two truck terminals in Memphis. Hulsey and Hall, architects; H. B. Hunter, structural engineer.

Upper photo: Office and warehouse, Kimbel Lines; Building Constructors, Inc., contractor.

●

Lower photo: Office and maintenance shops of Dealers Transport Company. B. E. Buffaloe, contractor.

Architectural Concrete

Adds Distinction to Commercial Structures

The two truck terminals illustrated above are excellent examples of the distinction and beauty of modern architectural concrete when used in commercial structures. These buildings demonstrate the individuality and versatility that is possible with architectural concrete.

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IN THE APRIL ISSUE OF

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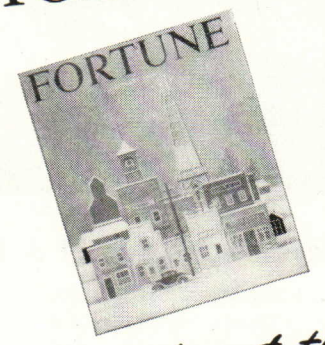


we point out the

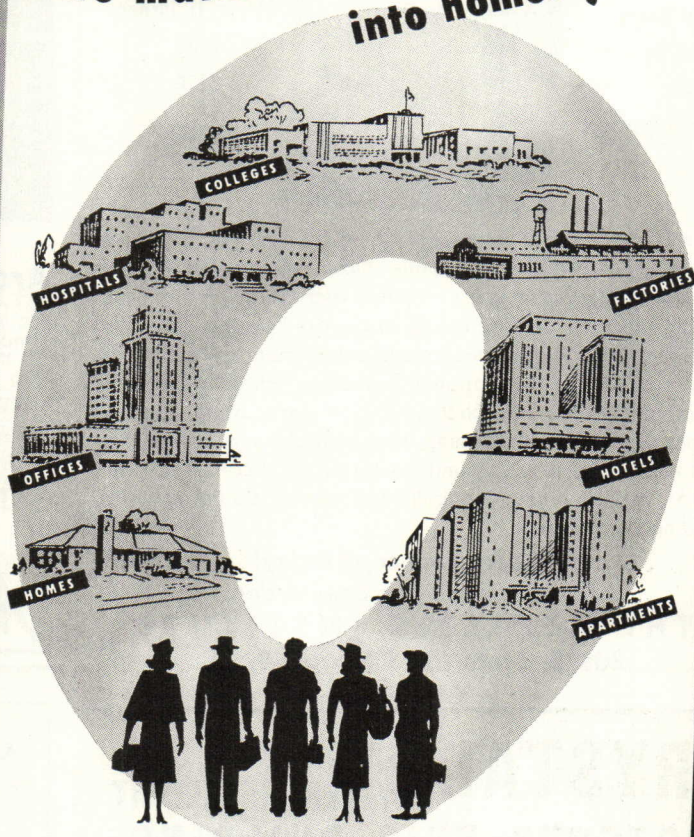
REAL FACTS ABOUT ARCHITECTS!

Building the "homes" of today is no "child's play"—as every architect knows. It takes vision and ability, and the knowledge of the needs of all types of people, old and young, sick and well. It takes a sincerity of purpose to insure the fulfillment of these needs. Unfortunately there are those who do not realize that convenience, service and performance take precedence over price, and who would compromise quality and security by seeking to substitute inferior products or materials? That's why we are telling this to the American public in the hope that they will understand that to tamper with an architect's specification is to weaken the principles by which each succeeding generation has achieved a higher standard of living. Inferiority can never build permanence and security into any "home"!

●

This is the second of a series of advertisements by JOSAM to appear in Fortune Magazine.

who makes these houses into homes?



ask your *architect*...he built them!

Call a house by any other name—school, factory, hospital, office or hotel—it is your home for a major part of every working day! You expect certain standards of comfort and convenience in these homes, and you get them because an architect knew your needs long before you did. Buildings are not manufactured...they are created by the architect out of his knowledge of how to meet a profusion of specialized requirements. He must know about lighting and swimming pools and cafeterias for schools, about flooring and power and communications for factories, about elevators and air conditioning and partitions for offices, about roofing and heating and plumbing for apartments—and how to put them all together to make each building a "home" for its occupants. Because the architect has combined the knowledge of many professions with the skill of many crafts, life is indeed easier for us in whatever place we call "home." Josam takes great pride in its long association with the architectural profession and is honored that architects, for over thirty-five years, have made Josam their overwhelming choice in the specification of plumbing drainage products.

Josam STANDARD OF THE WORLD PLUMBING DRAINAGE PRODUCTS

JOSAM MANUFACTURING COMPANY

302 Josam Building, Cleveland 13, Ohio

World's Largest Manufacturer of Plumbing Drainage Products

DRAINS • INTERCEPTORS • BACKWATER VALVES • SWIMMING POOL PRODUCTS

p/a

SELECTED PRODUCERS' BULLETINS

● The new patented Huddleston method of prestressing was used for the first time in the erection of a million-gallon water storage reservoir for the City of Monterey Park, California. According to MacMen, Inc., general contractors of Los Angeles, who handled the construction, and Quinton Engineers, the designers, the new method resulted in big reductions in cost, construction time, and improvements in quality of structure.

The Huddleston method, which is accomplished by a two-man crew, provides completely even distribution of prestressing in all sections of the 48 hoops encircling the inner shell of the reservoir. After excavation and pouring of reinforced concrete were completed, an outside form of ⅝" plywood was erected. Two-inch thickness of gunite was then applied to the inner surface, followed by steel reinforcing of ⅝" rod on 7½" centers in the lower 11' of height, ⅝" rod on 15" centers above, and 4" x 4" No. 8 wire mesh fabric for the full height. Gunite was then shot to the inside line of the reservoir line; the 48 hoops of 1" deformed Bethlehem steel rod were placed with 2" spacing of inner shell at the bottom to 5" at the top. After completion of the prestressing the tank was filled with water and left for 30 days. No cracks developed and no patching was required. Still under water pressure the prestressing was checked for uniformity, after which protective gunite was applied to cover the hoops with an outer shell of cement 3½" thick. Filling of the soil around the perimeter of the tank completed the job.

● "Redi-Bend," a new type of pipe fitting that eliminates the need for bending of pipe, is currently being manufactured for use in radiant heat installations by the Capitol Mfg. & Supply Co., Columbus, Ohio. Redi-Bends are made either of wrought iron or steel, in stock sizes and radii of 180°, 90°, and 45°, and are available in three types: weld, sleeve, and coupled types. They may be installed by pipe wrench or welding; no expensive fabricating equipment is necessary. The manufacturers claim that these new forms of pipe fittings will permit a contractor to figure a project more accurately where competitive bidding is encountered.

● Synthetic rubber is the basis of "Satin Luminall," a scrubbable, one-coat interior paint introduced by the Luminall Paint Division of National Chemical & Mfg. Co., Chicago, Ill. According to laboratory tests the new paint is noninflammable and will dry in 20 minutes; it can be applied to practically any painted or unpainted surface with brush, roller or spray. Satin Luminall is available in 20 colors, as well as white, in quart, gallon, and five-gallon cans.

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P.S.

Harvard Dean Is Critical of Williamsburg

Harvard Dean Praises Williamsburg Influence

The magazine *House and Garden* and Colonial Williamsburg recently held, in Williamsburg, Va., a two-week symposium of the subject of the Colonial House and Garden. The discussions covered the part Colonial houses played in *their* time (as well as our own) and the value of a restored segment of American architectural history. Knowing that the subject is a touchy one (Henry Kamphoeffner, in a badly misquoted speech last year, had brought sparks from some flinty Virginia souls) those of us who could not attend were anxious for news of the comments scheduled to be made by Joseph Hudnut, Carroll Meeks, Lawrence Kocher, William Perry, and others. First news was extremely confusing, as the two headlines reproduced may indicate.

Now, however, I have at hand some direct quotes, and some of you may be interested. The very encouraging thing about the symposium seems to have been that a number of speakers said or implied that a real *understanding* of the small Colonial house, rather than a superficial copying, might make us see that our own housing problems might be solved in an equally simple and direct manner. For instance, Kocher said, "The small house holds the key to the origin and development of Virginia architecture." He pointed out that it was the later Georgian mansion that was copied from plan books, but that the 17th and early 18th century small houses grew more naturally from the needs and resources of the colonies and their people. Meeks said that "a culture is never alive unless we are forever creating it," and pointed to the sense of values evident in the life of the 18th century town like Williamsburg, or Litchfield, Conn., which might be extended to our own times—such things as elegance achieved without flamboyant display. Perry, of the firm (Perry, Shaw & Hepburn) which was primarily responsible for the architectural restorations, said that Colonial houses represent "emancipation, disciplined by the gentle mandate of architectural modesty, pleasing dignity, and proportion of parts." He did go on then to say, "I do not refer to that emancipation of complete freedom, uncontrolled and too often to be confused with license."

Vi Hudnut is always quotable, but it seems to me that on this occasion he outdid himself. I hope you find the following remarks, used with the permission of *House and Garden*, which is publishing the entire talk in its May issue, as engaging and as penetrating as I do. Said the good brave Dean:

"I am never long in Williamsburg without feeling a strong impulse to appear in costume. A handsome blue satin waistcoat fancifully flowered would I am sure become me; muslin ruffles *bien brodées*, a pair of gold garters for my breeches' knees, white silk stockings, and my perfumed hair tied with a plum-colored ribbon. Often when I am in Williamsburg my mind seems to be bravely dressed and it would be nothing to wonder at if the spirit of Williamsburg should likewise invade my speech. Odds fish, I shall affect a little soft lisp and a pretty southern pitty-pat that I may dissemble my New England patois.

"It seems to me when I look about me in Williamsburg that the buildings share my mood. They, too, desire a fancy dress and a quaintness of prattle and, more fortunate than I, are indulged most delightfully in these caprices by those high coutouriers, Messrs. Perry, Shaw & Hepburn. . . .

"What is there in the life and thought of Colonial times that gives grace and reality to Colonial architecture and which, being lacking in the life and thought of our own day, denies reality and grace to those revivals of Colonial architecture that we have raised so carefully in the modern cities of our wide continent? Could it be that there is a propriety in the form of things made by man which is not independent of time and circumstance . . . the secret of these forms residing in the way of life to which they are relevant? . . .

The builders of Williamsburg were Colonials. They brought from England not their speech merely and their law, but their deep respect for the models and precedents of English architecture. If they turned to English books and not to the life about them for the thing to be done, the idea to be expressed, that was because they still looked towards England and cited up, not without pleasure, the thousand conventions of an English way of life; and who shall reproach them for so natural and so becoming a nostalgia?

"Were these builders then unaware of the great drama to which Virginia was prologue and prophecy?

"Such an interpretation implies a curiously unadventurous mind in the builders of Williamsburg, an interpretation wholly inconsistent surely with the spirit of English enterprise. No doubt the men who planted English civilization along the River James were not concious of all that was implied in their act and destiny, but they could not have been unmindful of new relationships in idea and conduct which were separating them from the civilization they had left behind. They were indeed laying the foundations of a new world and knew, in part at least, their role in that mighty architecture.

"Nevertheless it did not occur to them that a new art might be built, or ought to be built, upon these intuitions of new liberty and grandeur, nor were they to blame for a lack of prescience in these matters. The unity of feeling and imaging implied by such an awareness was not possible at a time when architecture was conceived, not as an art of expression, but as a fashion. The builders of Williamsburg had brought with them the habit of architecture as artifice and it remained artifice to the end of the century untouched by the impact of new ideas and the challenge of event. Architecture continued to exist, apart from the life of Virginia, walled in a clear and well-lit prison of English taste. That is why the builders of Williamsburg left in this corner of Virginia a splinter of England—and no trace of themselves. . .

"There are, as it happens, many people who desire a wider role for architecture than the celebration of an aristocratic era which, for good or evil, has long since taken its place in the abyss of history. We are no longer Colonials. Unless we are to leave unexhibited in our art the power and pagentry and spiritual depth of that wonderful world which surrounds us today, we must lend ourselves to progressions, unknown in Georgian times, which promise—not too confidently, I confess—a new architecture. In the meantime we should not deny ourselves the delights of Williamsburg. These will be more, not less, palatable to us if we taste them without that sauce of historical deformation and esthetic cant . . . That is a timorous and unimaginative mind which does not penetrate below such sugar-coating."

Thomas H. Creighton