architectural forum

January 1954

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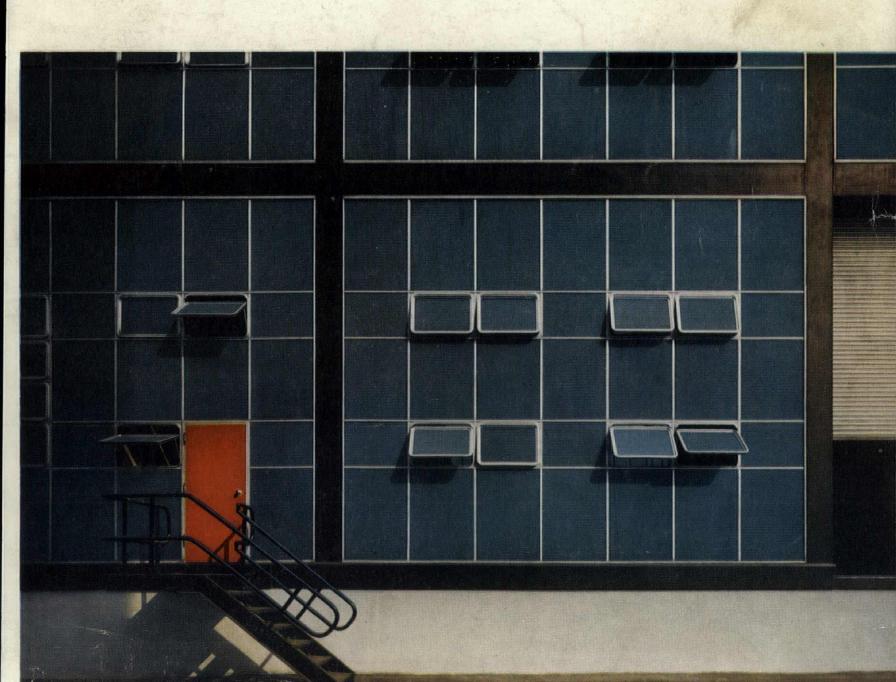
Building engineering

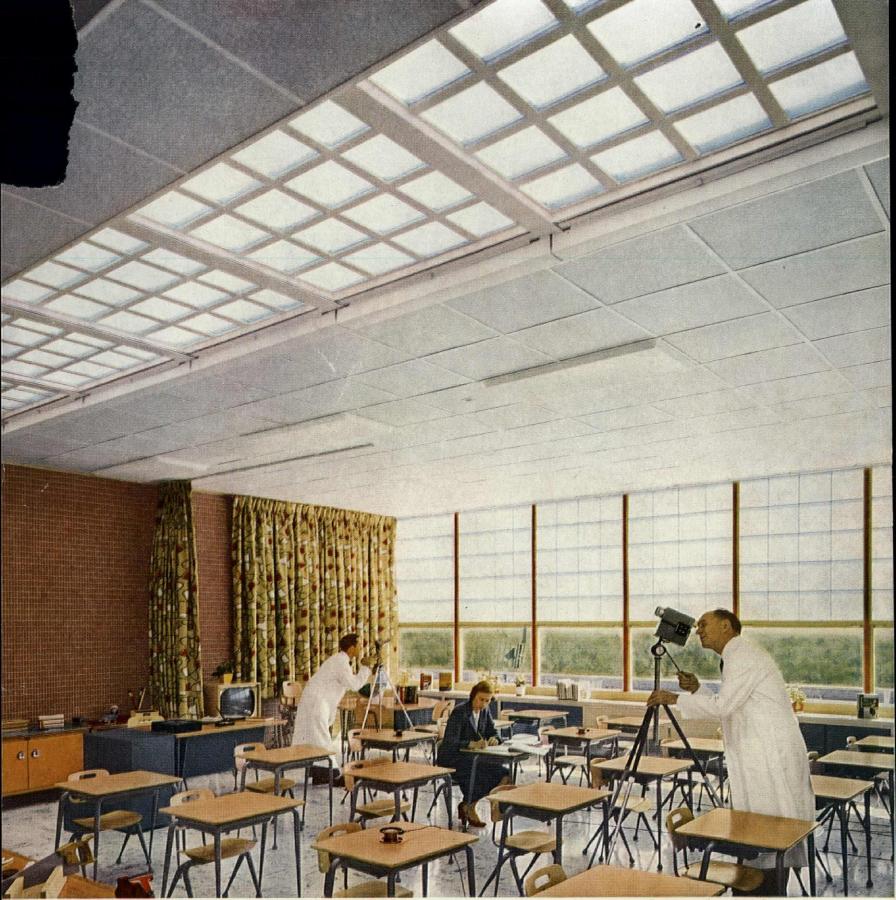
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Research Laboratory Classroom, Daylighting Laboratory, University of Michigan

America's most advanced schoolroom

The "Classroom of Tomorrow" has been built in the Daylighting Laboratory at the University of Michigan to demonstrate the new flexibility now possible in interior design—choice of materials, color and equipment without loss of high-quality daylighting which is so important to the education, the health and general well-being of the school child.

Twelve years of daylight research at the Engineering Research Institute, University of Michigan, has made possible this "Classroom of Tomorrow."

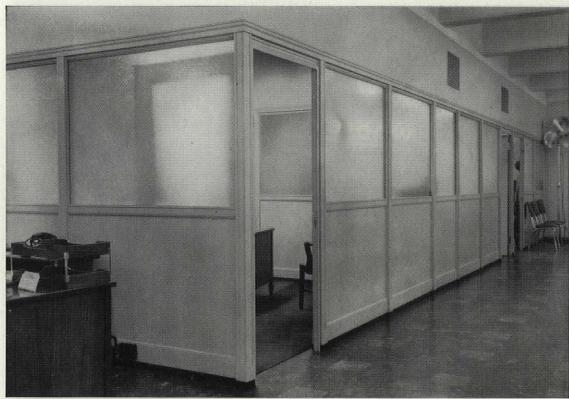
New freedom in the planning of classrooms is made possible by the proper application of two Engineering Research Institute developments—modern Light-Directing Glass Block for use in side walls and LightSelective Toplite Panels for use in roofs.

The ideas perfected in this Research Laboratory Classroom are available to you now. Write for details and see how these Owens-Illinois products can produce a better learning environment in your schoolrooms. Address: Classroom Research, Owens-Illinois Glass Company, Dept. MB-1, Box 1035, Toledo 1, Ohio.

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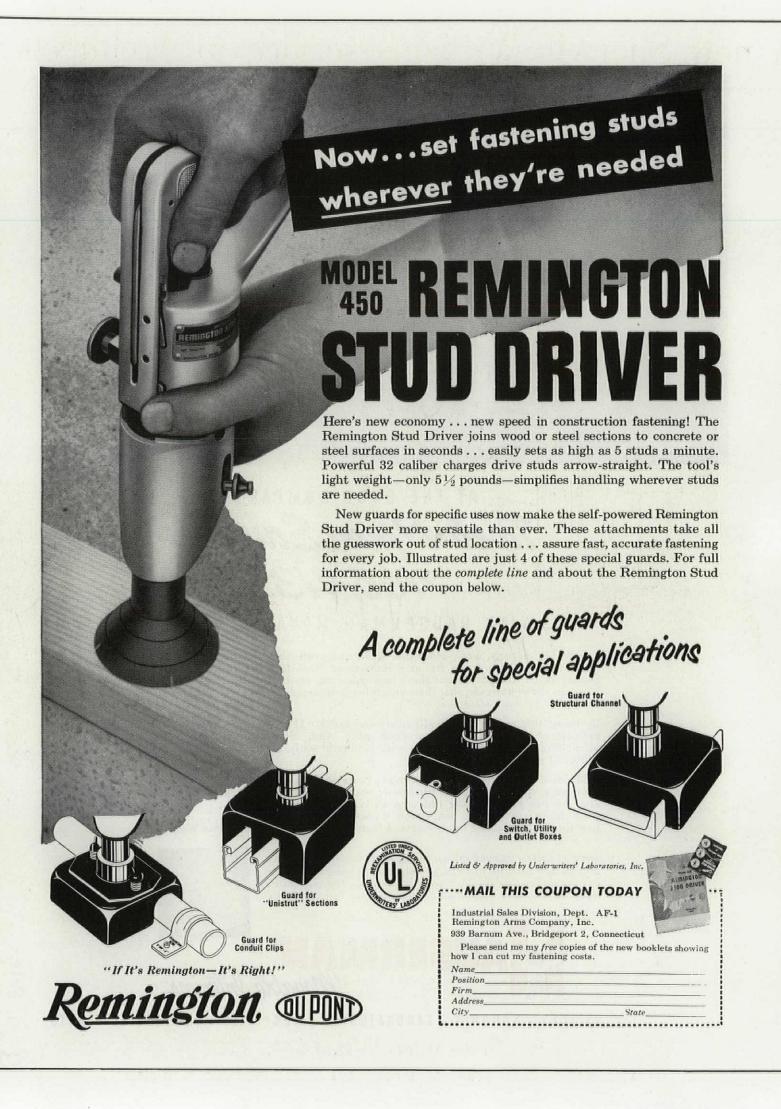
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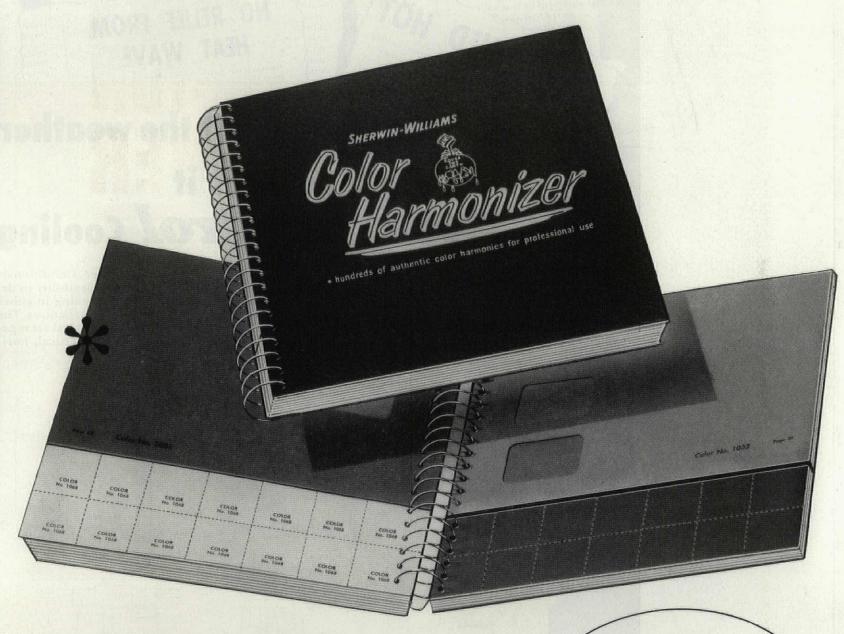


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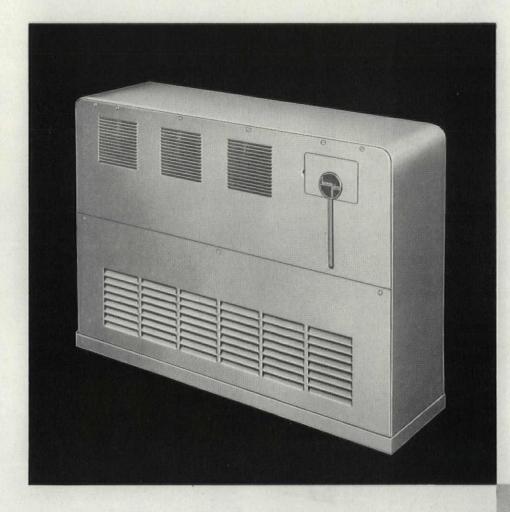
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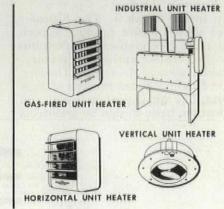
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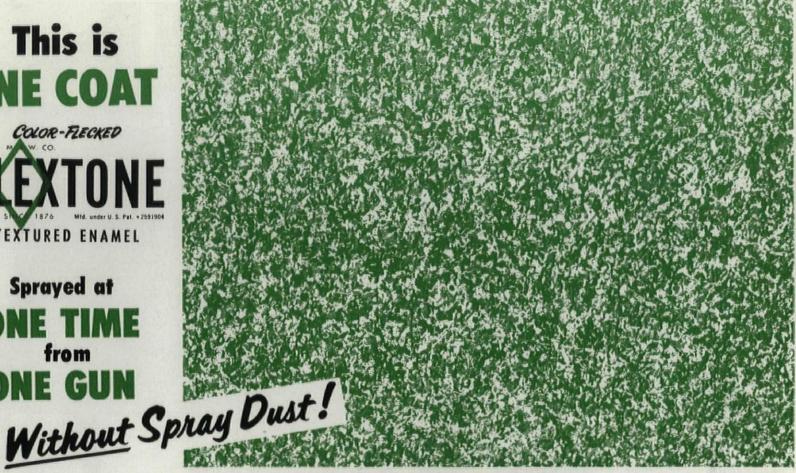




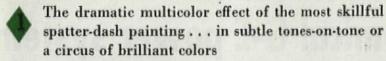
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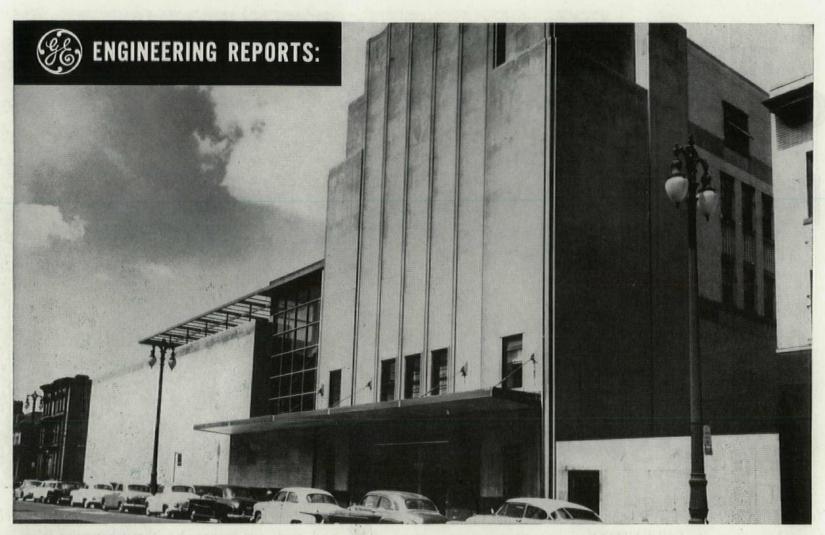
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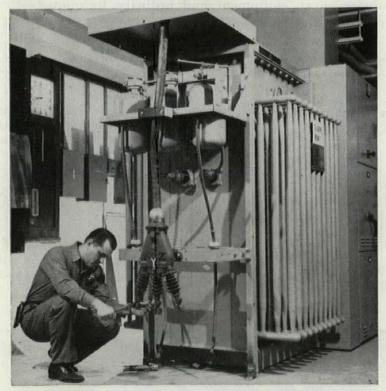
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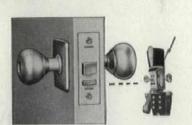
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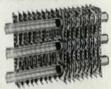
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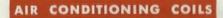
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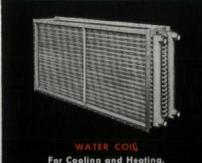
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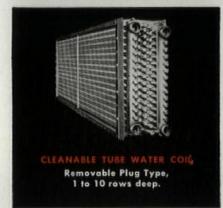


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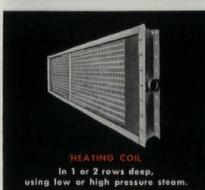




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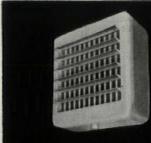


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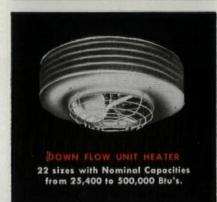
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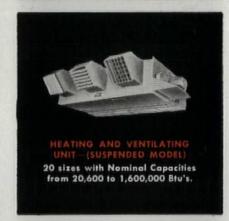


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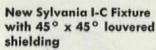
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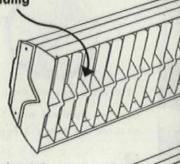
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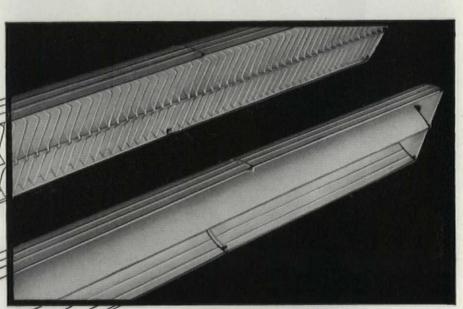
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Greater Comfort and Safety assured by these 3 features

Powers mixers prevent delivery to shower or tub above 115° F.

Temperature remains constant wherever set regardless of pressure or temperature changes in water supply lines.

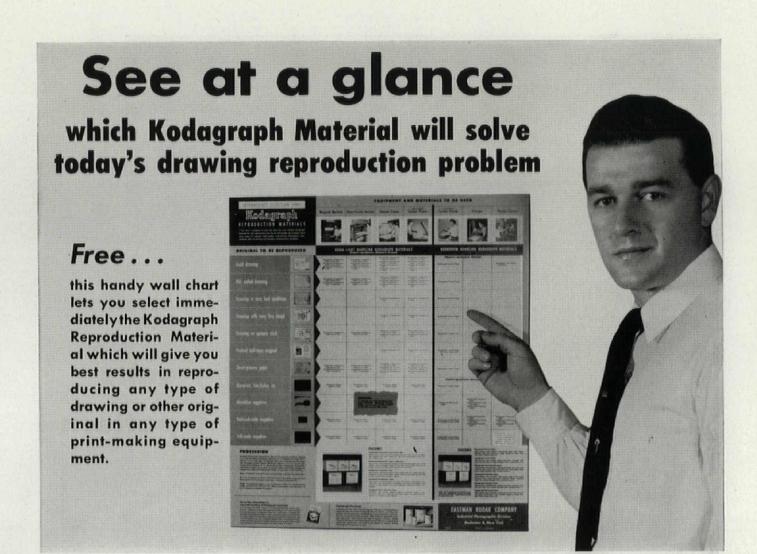
Failure of cold water supply instantly and completely shuts off delivery to shower or tub.



Only ONE Shower or Tub Accident May Cost Many Times More Than POWERS Mixers

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	State	IXUUGIA TRADE-MARK



pattern you effect a considerable saving

the perforated . . . the rock wool sound

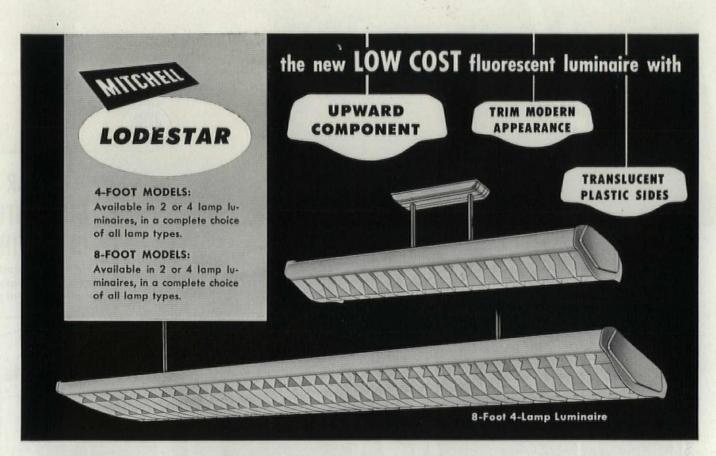
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For complete information, send for the free brochure "Sound Control." Write Johns-Manville, Box 158, Dept. A, New York 16, N. Y. In Canada, write 199 Bay St., Toronto 1, Ont. *Reg. U. S. Pat. off.

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Outstanding lighting advantages and low-cost maintenance



"General Diffuse" type luminaires; ap-proximately half the light goes up to be reflected from ceiling and upper walls for comfortable, glare-free, uniform lighting.



Semi-translucent side panels provide low brightness contrast, creating modern, streamlined appearance. Plastic sides and louver form one easyto-handle unit.



Sturdy, concealed spring-loaded louver latch instantly releases or engages all-steel louver by snap-in action. Releases with slight pressure of fingers.



Two jack chains suspend entire louver and V-spine assembly from fixture body, making relamping easy and substantially reducing maintenance costs. This feature saves time and money.



New Rapid-Start units offer an unusual advantage: "No starters to replace." Installation of Rapid-Start luminaires slashes maintenance cost by eliminating starter replacement expense.

Mitchell Manufacturing Company, Dept. 13-A

mercial fluorescent lighting.

MITCHELL engineering achieves remarkable standards of abundant, glare-free illumination in the "LODESTAR" Luminaires. Important lighting advantages are attained by the substantial upward component which provides a "general diffuse"

lighting effect. Semi-translucent side pan-

els provide pleasing low brightness con-

trast. The superior louver design delivers

properly shielded illumination to the work-

ing area. Smooth styling, unusually low maintenance factor and surprisingly low cost make the new MITCHELL "LODESTAR" Luminaires outstanding values in com-

where quality counts—SPECIFY MITCHELL

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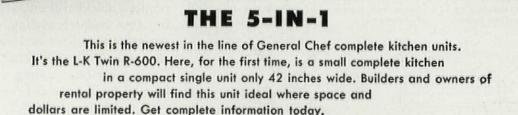
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- **DOUBLE SINK** One-piece porcelain top of heavy gauge steel. Faucet and all hardware triple-chrome plated.
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- OVEN Large handy oven with broiler and Robertshaw Automatic Temperature Control. Completely insulated from refrigerator.
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- FREEZER Holds 9 ice cube trays, or 12 standard frozen food packages.



Smaller units 27½ inches wide without oven—gas or electric

Handsome General Chef units without ovens come in sizes as small as 27½ inches wide. Gas or electric burners (either 110 or 220 V.)... with or without sink. Four cubic foot refrigerators.



We will send you complete information and specifications on the many General Chef complete kitchen units. If you are building, remodeling, designing — you will want to get this information to help you save space and dollars. Write today. We will also send you name and address of distributor nearest you.

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Please send me complete information and specifications on General Chef units, and name of nearest distributor.

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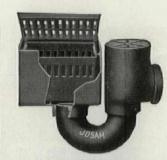
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FIVE hundred new depositors selected this light, attractive lobby the smart place to do their banking . . . since it was relighted with ingeniously modified standard LITECONTROL fixtures. And so did the Connecticut section of the Illuminating Engineering Society, for they awarded it first prize in a recent lighting contest.

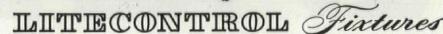
Problem here was to illuminate the new banking area (rear with low ceiling) in a modern distinctive manner

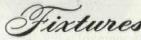
... yet preserve the architectural tone of the old area (front with 24-foot ceiling).

Planned Lighting by Litecontrol provides standard fixtures that balance light intensity in both areas. Cool white and warm white fluorescent lamps blend to match the incandes-

cent light from chandeliers. Note color quality of walls appears uniform throughout. While even illumination eliminates need for local light sources at tellers' cages.

You, too, can plan a better lighting installation at standard fixture costs with your local LITECONTROL man.





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LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

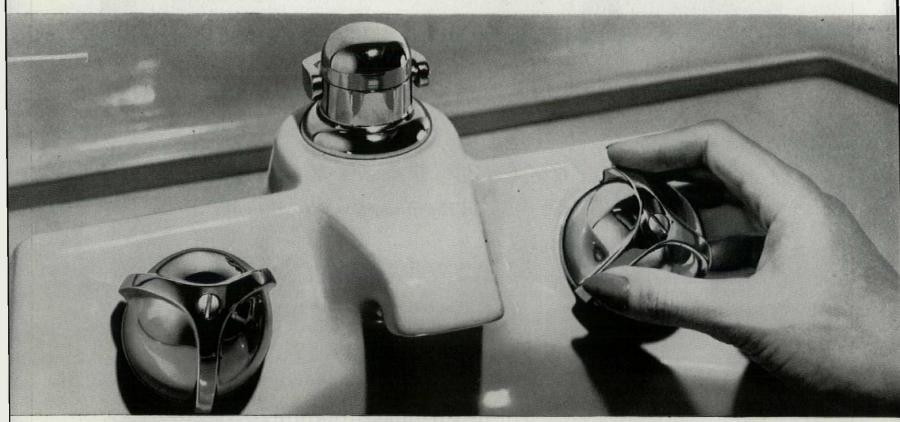
DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

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Crane fixtures for bathrooms and kitchens offer specific architectural advantages. Among these advantages are popular styling, a broad selection of sizes and types for widely varied installations, and a choice of eight beautiful colors or white.



Client approval is practically assured in advance when you specify fixtures by Crane. And years after installation, the performance of these fine fixtures will continue to satisfy your clients and protect your good name.

Costs no more. Even plans with a restricted budget can include Crane because fixtures are offered in a wide range

of prices. For detailed information see your Crane Branch or Crane Wholesaler.

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Seat height of 17" and extra toe space provide plenty of room for leg comfort. 10½" row rise makes seeing much easier

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Interlocking
members and
multiple supports
make opening
and closing easier
—assure true
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Complete redesign has resulted in these additional improvements:

- Weight reduction up to 70 pounds per row
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"DUAL-ALIGN"
housings are
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* Medart Telescopic Gym Seats are fully protected by U.S. Patenta.

what's new in construction?

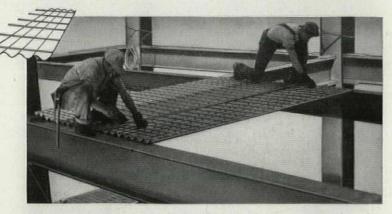
"TOUGH-TEMPER" STEEL AND A NEW FAMILY OF PRODUCTS HELP DESIGNERS AND INVESTORS, ALIKE

Here's How: "Tough-Temper" steel is the answer. Yes, a steel with extremely high strength is one of the reasons that the Granco family of four building products does a better job for architects, engineers, and new building owners.

The new material, known as "tough-temper" steel does not require critical alloying to gain high-tensile strength. Instead, controlled cold-rolling with strain hardening as the result, gives high and unusual physical properties. The finished product, containing this steel with an ultimate strength over 100,000 psi, results in simplified, economical construction, savings in material and labor.

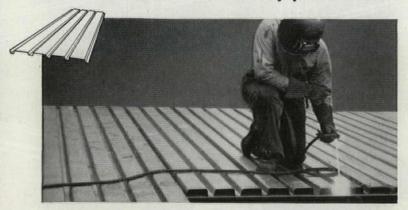
For additional information write Department AF-4, Granco Steel Products Co., Granite City, Illinois. Your request will receive prompt attention.

COFAR—combined form and reinforcement



Deep-corrugated steel, 100,000 psi and stronger (main reinforcement), and T-wires (temperature reinforcement) in one manufactured product . . . serves as both permanent form and reinforcement . . . completely eliminates wood forms . . . provides all the positive steel needed in the structural concrete slab . . . saves days and dollars in new building construction.

FLAT TOP ROOF DECK—rotary press formed



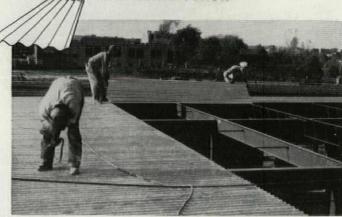
to insure uniform pattern. Wide cover width reduces handling and erection costs... fewer side laps cut welding time and offer greater support for concentrated loads. Ideal relationship between rib and flat provides maximum strength and cover per pound of steel. The characteristic pattern of Roof Deck precludes the use of "tough-temper" steel in forming but is manufactured from high-grade cold-rolled sheet steel.

CORRUFORM—light weight, permanent corrugated steel form



for concrete floors and roofs...stronger by far than conventional corrugated steel of same shape and weight... functions as a base for thin concrete slabs in steel joist floors and roofs...economies of construction are a result of thinner, stronger slabs...concrete saving through lack of sag, stretch, bend or leakage...speed and ease of placing Corruform also adds to construction economy.

TUFCOR—Permanent, non-combustible roof construction



for light-weight, insulating concrete roofs—for spans up to 7 feet. To use Tufcor: (1) Weld hi-strength galvanized Tufcor sheets to steel frame of roof; (2) Place 2" or more, of concrete fill on steel shell of Tufcor; (3) Put a built-up roof over insulating concrete fill. Result: An economical roof, with an attractive underside, that will last the life of the building.

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"Our new school has large windows that let in lots of light and let us see out. Even on cloudy days we don't feel 'cooped-up'."

No one item of school design can do more to banish the "cooped-up" feeling than large areas of clear glass. Daylight Walls stretching from sill to ceiling bring light and sun and view into the classroom... make it part of the world beyond. Isn't it logical that work and study progress better when teachers and students have such pleasant surroundings?

Recently students and teachers in several newly completed schools were asked what they liked best

FREE BOOK ON SCHOOL DAYLIGHTING



If you have anything to do with school design, you will enjoy reading the new, authoritative publication on school daylighting, How to get Nature-Quality Light for School Children. For a free copy write Libbey Owens Ford Glass Co., 4214 Nicholas Bldg., Toledo 3, Ohio.

about the designs. Both groups were enthusiastic about the "large windows", the "abundance of glass", and the "daylight quality".

School Boards like Daylight Walls, too, because they are economical to build and economical to maintain (glass is easy to clean; doesn't wear out). When windows are glazed with *Thermopane** insulating glass, heating costs are lowered, areas next to windows stay warm and comfortable on coldest days.

If you'd like more information about Daylight Walls, write for the booklet described below or call your nearby Libbey Owens Ford Glass Distributor or Dealer.

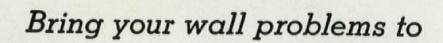


THERMOPANE . PLATE GLASS . WINDOW GLASS

DAYLIGHT WALLS

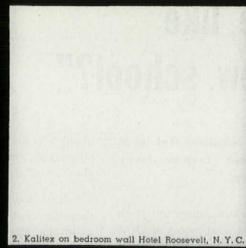
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OTHER L-O-F GLASS PRODUCTS: Vitrolite* • Tuf-flex* Tempered Plate Glass
Tuf-flex Doors • Safety Glass • E-Z-Eye Safety Plate Glass • Fiber-Glass





1, Kalistron dado. Maternity Ward, St. Vincent's Hosp., Bridgeport, Conn. Arch.: Fletcher Thompson.





3. Teak Flexwood law office of Miller & Burstein, Bridgeport, Conn. Architect: Victor Civkin.





4. Randomwood used in a home in Chappaqua, N. Y. Contractor: Joseph Cerrone.

"WALL CENTER.



- 1. Kalistron A transparent vinyl "coat of armor" shields this rich wall covering...its color is fused to the underside. Virtually impervious to scratches, scuffs, stains, roughhouse. A damp cloth cleans it. 33 colors. Ideal in hospitals, theatres, restaurants, schools—wherever traffic is heavy—and careless.
- 2. Kalitex Gives more protection than any other wall covering at anything like the price. Made much like Kalistron, with the same vinyl-protected beauty. Its rough textured pattern is distinctively different. Superb in hospitals, hotels, public buildings, etc.
- 3. Flexwood Genuine wood panelling in flexible form. Hence, you can curve it, wrap it around posts, get stunning matched grain effects over wide areas. Meets any fire code requirement. Over 25 million feet installed on new construction and alteration jobs. Every installation guaranteed. Widely used in banks, offices, public rooms, etc.
- 4. Randomwood Similar to Flexwood except the shading of the wood varies, giving an interesting "random" effect. Use it where imagination is high but budget is low. Hangs easily, like wallpaper. For a whole room or a dramatic single wall, in homes, small offices, anywhere. First cost is last cost for years.

Marketed Jointly by United States Plywood Corporation and The Mengel Company Wall Center, U. S. A. — that's what they're calling United States Plywood Corporation. Among the wall coverings described below, you will find a solution to almost any wall problem — problems, for instance, like these:

Hospital walls that must resist bumps, scratches, chipping. Rounded or curved walls that call for wood panelling. Hotel room walls that should always look "fresh." Fireplace walls for "beauty on a budget."

Come to Wall Center, U.S.A. for new beauty treatments...new protection against wear. Read descriptions below—then send coupon.



ROOSEVELT HOTEL STANDS ALONE AMIDST WRECKAGE. Although located in the heart of the tornado's path, The Roosevelt Hotel stands unyieldingly in a block that was more than 50% destroyed by the rampaging winds. Engineers reported "no structural damage" to this 12-story reinforced concrete frame building.

REINFORCED CONCRETE FRAMED STRUCTURES WITHSTAND WACO TWISTER

ON the afternoon of May 11, a tornado struck Waco, Texas, with devastating effect. 115 Lives were lost, property damage ran into several million dollars, and some blocks in the downtown area in the twister's heart were over 80% destroyed!

The tornado's fury was concentrated in an area of a few blocks. Many of the buildings in this area were completely demolished. Among them were the 5-story building of R. T. Dennis Co., the Joy Theatre, Neely Paint Co., Pollock Paper Corporation, and many smaller structures. Heavy brick parapet walls along the street side blew off and crashed into the street. Occupants were trapped in the cave-in. Cars in the street were crushed by falling brick!

But despite this general pattern of destruction, investigating engineers found that reinforced concrete framed structures suffered only superficial damage! While adjacent brick buildings were demolished, all reinforced concrete framed structures remained substantially intact—standing alone amidst the surrounding destruction.



DEBRIS IS ALL THAT REMAINS OF 5-STORY R. T. DENNIS BUILDING. This and four other buildings in the immediate area were obliterated by the storm. The buildings in the rear both have a reinforced concrete frame.



FRONT VIEW OF BUILDINGS IN 400 BLOCK ON FRANKLIN STREET shows the terrible toll the tornado took of buildings whose frame construction was less rigid than reinforced concrete. This is typical of the fate of the load-bearing wall-type of structures in the twister's path!



DRAMATIC ILLUSTRATION OF THE ABILITY OF REINFORCED CONCRETE TO WITHSTAND THE TWISTER is the Waples Platter Co. building. At right is all that remains of the brick portion of warehouse, but reinforced concrete section, left, is structurally unaffected by the storm.

Texas tornado traces path of ruin . . . reinforced concrete structures still stand!

What an attempt to "economize" with structural frames less rigid than reinforced concrete meant in loss of life and property in Waco is obvious from photographs of the tragedy. In the large, these buildings were leveled!

In contrast, here is the engineering report on reinforced concrete framed buildings in the storm's center: Roosevelt Hotel—12-story r/c frame bldg., no structural damage; Behrens Drug Co.—4-story r/c frame bldg., no structural damage; Southwestern Drug Corp.—4-story r/c frame bldg., no structural damage; Professional Bldg.—10-story r/c frame bldg., no structural damage; Frank Latham Co.—r/c frame bldg.,

no structural damage; Southwest Coffee and Spice, Ltd.—2-story r/c section, no structural damage; Youngblood's General Office Bldg.—no structural damage to r/c section; Waples Platter Co.—1-story bldg., no structural damage to r/c section; City Hall—r/c bldg., no structural damage; Allen Miller—partially r/c bldg., no damage to r/c columns and beams.

If all of the downtown Waco buildings had been of reinforced concrete . . . how changed the picture would have been!

CONCRETE REINFORCING STEEL INSTITUTE

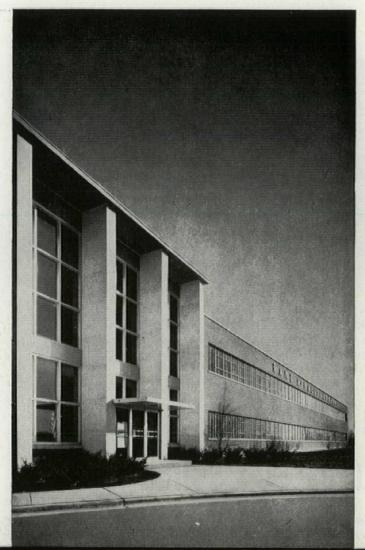
38 South Dearborn Street Chicago 3, Illinois

THESE REINFORCED CONCRETE BUILDINGS SUFFERED NO STRUCTURAL DAMAGE Behrens Drug Co. Bldg., Southwest Coffee & Spice Bldg., and Professional Bldg. (left to right) successfully rode out the storm!









how Ceco 1-SOURCE SERVICE SAVES TIME · LABOR • MONEY



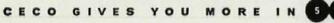
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS . SHERMAN OLSON, INC., CONTRACTOR . RAND MCNALLY BLDG., CHICAGO

The cost of any structure depends partly on the way materials are handled on the job.

Here Ceco 1-Source Service offers special advantages to the architect-engineer-contractor team in helping make paper savings truly realistic by integrated delivery.

One responsibility for providing concrete joist steelform service and reinforcing steel, for delivering steel joists, roof deck and metal lath, assures their arrival on the job-site as desired by the architect, just as needed by the contractor. And when there are requirements for Ceco metal windows, screens, and hollow metal doors, these products also are scheduled for arrival when needed. Result: Costly storage is avoided, material handling reduced—and work goes ahead faster.

Look at any job where multiple Ceco Products are used and you'll see neat "ground keeping," a significant sign of low material handling costs. That's just one example of how Ceco 1-Source Service can save for you. If you consult our people in the preplanning stage, product specialists will assist you in the application of Ceco Products so you can realize further savings.









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General Offices: 5601 W. 26th St., Chicago 50, Illinois



Here's something to "kick around" for school applications...Westinghouse Micarta

Westinghouse MICARTA® is the answer to the question that has plagued school boards, builders and architects ever since the first braid was dipped into the first inkwell. Namely . . . "Where can we get a material that will hold up under generations of marching, kicking, scuffing students?"

This amazingly tough and versatile decorative plastic can be wiped clean in a matter of seconds. It eliminates the annual problem of refinishing and painting, stays bright and attractive even under assaults by mild acids, hot liquids, alkalis, and cosmetics.

In addition to wainscoting applications, MICARTA serves well on counter tops, cafeteria tables, school desks, cabinets...in fact, wherever there's a need for a long-lasting combination of utility and beauty! You can specify Westinghouse MICARTA with complete confidence.

For complete information call your nearest United States Plywood Corporation Representative or fill out the coupon below. J-06545-A

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It's handle free ... just turn the key. That's Key-Control.

Here's what it does. Since the key is the handle—and is the only handle required—students actually carry their locker handles on their key rings. They simply cannot neglect to lock their possessions. A Key-Control door pre-locks when the key is removed. It locks automatically when closed. Master keys are provided for the school administrator.

With a Key-Control locker system, there's no handle noise in busy school corridors. No handle maintenance expense. Locker fronts are flush and smooth.

Investigate this newest advance before you specify any school locker system. Your Berger representative will gladly explain all of its many advantages in a simple fifteen-minute demonstration. Remember: only Berger—world's leader in lockers—offers Key-Control in addition to a complete line of standard steel lockers.

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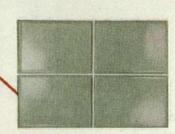
Berger STEEL LOCKERS

"Clay Tile Insures Colorful Design, Utility and Low Future Maintenance"

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CERAMIC MOSAICS — a versatile unit for floor or wall — used for unique decorative effects.

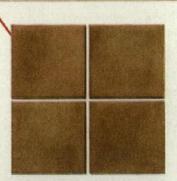


GLAZED WALL TILE — a colorful wall surface that is easily cleaned and never replaced.

Design for modern institutional therapy room by Eggers & Higgins, Architects.

In this architectural design for a children's hospital therapy room, clay tile provides a durable colorful surfacing material. When you design or build any institutional, commercial or residential area, remember this: clay tile is waterproof, fireproof, stain-proof, scratch-proof and stands up indefinitely under heavy use. These qualities will add to your job—and to your clients' satisfaction.

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QUARRY TILE—the heavy-duty tile that takes hard institutional or commercial use for years.

The Modern Style is

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And in Denver - A FUTURE OF FAULTLESS SERVICE



of the Rocky Mountain area will provide
sorely needed office space for
discriminating firms. At the same time,
the upper four floors will contain new
facilities for club members. A highly appropriate
parallel lies in the specification of
DELANY diaphragm type FLUSH
VALVES for this outstanding structure.
Founded one year before the historic
Denver Club, COYNE & DELANY is
nevertheless—"the fastest growing

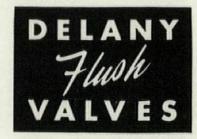
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This new "HAND BOOK and CATALOG No. 53" is the most comprehensive of its kind-designed for everyday reference . . . 19 pages of installation details for exposed, concealed and special FLUSH VALVE installations . . over 75 blue prints . . . cut away views . . . many pages of charts, formulae, piping details . . . sent free, if requested on firm letterbead.

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Since 1879

Building to stem recession

- Administration plans call for public works splurge if business dip grows sharp enough—perhaps \$1 billion worth
- Fiscal measures will be used to fight a slump first; Eisenhower asks Congress for tax incentives for building

Even though most forecasts indicated no big economic troubles were brewing for the nation next year, and that business and construction volume would be down only a little from 1953's record levels, the administration had been planning all fall on how to cope with a depression if one comes. At New Orleans, late last year, Sherman Adams gave the nation's mayors a summary of the results. He made it clear that public works construction would be a major tool in the GOP antidepression kit. Said Adams:

"We have asked each federal agency to provide detailed information on the status of its plans and the speed with which it could get construction or major alterations and repair work under way. We know where we could move and how fast. We are not expecting a depression and we are not expecting to use public works for antidepression purposes. But we will be ready, should a need for expanding public works arise. We are not taking any chance and we are not going to trust to hasty improvisations, such as have ruled past practices."

10% dip brings building. Adams did not burden the mayors with precise definitions of what stage in an economic downturn would call for public works. But other White House sources have indicated that construction pump priming would be called into play if the gross national product dropped as far as 10% (it is already down 4% from its summer peak). At that point, the US would be having a recession.

For a mere "economic readjustment"—a downturn somewhere between 5 and 10%—it was now clear the Eisenhower administration would rely on fiscal measures to lean against the economic wind. Most action would be up to the Federal Reserve. It would ease credit policies by lowering the re-discount rate, lowering reserve requirements for member banks, or finally by more vigorous propping up of government bonds (which is another way of printing money). About this point in a dip, the building industry could expect the President to ease financing terms on FHA-insured housing. Increased aid for urban rehabilitation would be forthcoming.

For antirecession or antidepression building, the administration seemed likely to lean on the lease-purchase bill already half through Congress rather than to propose appropriating money for the greater part of the estimated \$2½ billion backlog of public buildings (see col. 3).

In his state-of-the-union message to Congress, President Eisenhower advocated liberalized tax treatment for "business that wants to expand or modernize its plant." The President did not bill this as an antirecession step, but it was a weapon that some quarters

thought useful to lean against a mild dip in business. Democratic powers in Congress, however, were expected to fight this theory. Sen. Paul Douglas (D, Ill.), a leading economist himself, insisted the way to stave off a slump was to cut consumer taxes to stimulate spending, because business spending in plant construction takes longer to make itself felt throughout the economy.

In his talk to the mayors, Presidential Aide Adams referred guardedly to state and local public works as a means of fighting a slump, without holding out any definite offer of federal aid. The big trouble with relying on states and cities for antidepression construction is that most of them would bump into debt limits, or—as in the mid-30's depression—be

unable to persuade frightened voters to approve the necessary bond issues. Ikemen recognized that the federal government would probably have to provide some sort of helping hand. Just what form it might take was still under study. Possibilities ranged from a combination of loans and grants reminiscent of the old PWA to a federal guarantee of local bonds.

Advance planning funds. One form of federal public works pump priming: financial assistance to localities for advance planning. HHFA's program for such loans expired June 30, 1951. Under it, cities could get interest-free funds for planning, to be repaid as soon as construction began. In all, HHFA dished out \$21 million to plan projects that would cost \$900 million to build.

Altogether, Washington experts figure federal civil and military public works each could be stepped up about \$1 billion above their present levels in a year's time. Already on tap is a backlog of some \$2.6 billions of planned federal projects, plus another \$3.6 billion in state and local projects planned with and without federal aid.

Most of the federal backlog of plans which could be put to work against a slump was in the hands of the Army Engineers, Bureau of Reclamation and AEC. The Public Buildings Service had only some 50 to 60 projects that could be ready to start in 90 days. They might add up to \$25 million, but that was a drop in the bucket. Whether the type of construction backlogged in other bureaus would actually create many jobs that would offset unemployment was a debatable question.

Outlook in Congress: building legislation will stall because GOP has such thin control

With GOP control reduced to a hair and elections hovering around the corner, the new session of Congress did not look like fertile soil for ripening the holdover crop of construction bills, much less for planting any new ones. The line-up:

S	ENATE	House
Republicans	47	219
Democrats	48	215
Independent	1	1

That was so close that Republicans will only be able to pass legislation that at least some Democrats endorse. Moreover, law-makers would be in a hurry to finish their chores and get home for electioneering. They would be in no mood to sweat out passage of controversial measures except for key items on President Eisenhower's program. Even the President's "must" bills would not be received too sympathetically. And the one among these that involved building, the overhaul of housing laws, would face particularly rough sledding (see p. 144). Prospects for other building legislation:

Taft-Hartley Act: administration plans for revisions ran into stiff opposition as soon as they were spelled out. Labor particularly objected to the surprise proposal in the President's special message recommending secret government elections to determine whether various work stoppages were supported by the majority of workers involved. For construction, Eisenhower urged: 1) permission for employers to bargain with unions before work started on a project, without the union certification elections required in other industries, and 2) authorization for contracts requiring new workers to join the recognized union within seven days. These proposals, said AFL Building Trade President Richard J. Gray, were "well intentioned," but meaningless. With Republicans and Democrats so closely divided, probably nothing would be changed this year.

Lease-purchase: one of the most popular of the bills held over from the last session. Already approved by the House, the lease purchase bill would let the General Services Administration and Post Office Dept. buy buildings on a 10- to 25-year installment plan—about the same way homeowners buy on mortgages. Subject to Congressional veto, the GSA and post office would contract with private

businessmen to build to government plans financed by private money in return for a long lease. At the end of the lease, the building would become government property.

Even after whittling \$8 million off the federal rent bill this year, the government still was paying private landlords some \$45 million a year in rent. The US has rented some buildings for as long as 40 years-paying for them many times over. Why? Among other reasons, Congress will let administrators sign leases for only one year in Washington, five elsewhere (except the post office, which can sign 20-year leases). By acquiring office and other newly built space under a leasepurchase arrangement, experts figure the government would eventually own buildings for little more than it would pay to rent them. The bill would have passed last session, except that it got snarled in a jurisdictional impasse between two Senate committees over who should pass on departmental building proposals when submitted. Outlook: a bill sponsored by Sen. Everett Dirksen (R, Ill.), which is identical with the House bill, will be adopted. It solves the jurisdictional impasse by letting the presiding officer refer projects to "the appropriate committee," which would generally mean government operations but sometimes might be post office or public works committee.

Wunderlich: S. 24, which would permit judicial review of decisions of government contracting officers, was before a House judiciary subcommittee. It would reverse a 1951 Supreme Court ruling that judgment of contracting officers is final unless fraud is involved. The bill has support from both contractors and subs, may possibly squeak through although it bears a low priority.

Bid-shopping: heatedly opposed by the AGC, just as strongly endorsed by subcontractor groups, the antibid-shopping bill (S. 848) would force general contractors to list their subs and disclose the amounts of their bids on government work. The measure won approval of the Senate judiciary committee last year, but lack of time kept it from floor consideration. The House judiciary committee reported a similar measure (HR 1825) on the last day of the session. Outlook: subs have an edge, because there are more of them to pressure lawmakers, but government contracting officials are generally opposed so the bill is apparently headed for the shoals this year.

Toronto 7-story building will depend on escalators

Escalators will handle all normal passenger traffic in a new seven-story, 250,000 sq. ft. office building being built in Toronto for the Bell Telephone Co. of Canada. There will be one elevator—for freight, emergency use, and possibly for executives on the top floor. Otherwise it will be the highest, and probably the largest building without elevators in Canada. Fire regulations required two stair systems. The escalators will occupy the space one set of stairs would have used, and, in replacing nine elevators will provide 708 sq. ft. more floor space on each floor.

SIDELIGHTS

Foreign buildings (cont'd.)

AIA injected itself last month into the State Dept's shakeup of its foreign buildings office (AF, Oct. '53, News). In the reorganization, Leland W. King, boss of the FBO, was to have been kicked upstairs into an "advisory" job, but chose instead to retire after 17 years service. Behind the velvet ouster: complaints that King and his predecessor, Frederick Larkin, ran a "one man show," some griping by ambassadors who do not like the handsome modern architecture FBO was buying.

Knowing, but not mentioning, all this, AIA Executive Director Edmund R. Purves wrote the State Dept: "In the Institute's opinion, Mr. King has made a notable contribution to American architecture and culture in foreign lands. . . . Mr. King has allowed the most distinguished private architects to express freely the highest development of their art under official sponsorship of the US government. As a result, many of the buildings are destined to become landmarks . . . lasting monuments to the best in American culture, for the world to see." Purves added pointedly: "The Institute hopes that, with the change of personnel, the philosophy which guided this program will not be lost." One indispensable ingredient, said Purves, was "choice of private architects by a person or persons thoroughly conversant with the development of architecture in this country and thus qualified to separate the brilliant designer from the merely adequate journeyman -as did Mr. King."

Clear implications of AIA's outburst: the GOP shakeup in foreign buildings threatened to deprive the nation of modern design for its embassies abroad. Purves, of course, was too polite to say so.

Deputy Undersecretary of State Edward T. Wailes replied that State has picked "an advisory board of outstanding architects . . . selected from among the most distinguished leaders in the field" to advise its foreign buildings office on future overseas construction. He declared State sought structures that were "pre-eminent not only with respect to esthetics but also with respect to practical criteria such as economy in construction and maintenance, and skillful planning of space utilization." Private architects, said Wailes, will get an even bigger role in the program. When the committee was announced, it struck onlookers as one with a balance toward more conservatism than state's foreign buildings had shown so far. The committee: Chairman, Col. Harry A. McBride, 66, retired administrator of the National Gallery of Art and onetime (1932-39) assistant secretary of state; Architects Ralph Walker, 64, of New York; Henry R. Shepley, 66, of Boston; and Pietro Belluschi, 54, dean of architecture at

The easing money market

Construction should be easier to finance in 1954. Since the mid-summer mortgage pinch that had homebuilders crying, funds have been gradually growing easier and cheaper to borrow. Best indication: the December sale of \$121 million tax-free public housing bonds with maturities running to 30 years went for an average yield of 2.47%. That compared to an average yield of 2.83% on a similar issue in September.

Building give-aways

The state of Alabama and the city of Ashland, Ky. got buildings for Christmas. Westinghouse Electric Corp. abandoned a proposed \$5 million glass plant near Hot Springs and donated the building (80% completed) and the land (31 acres) to the state, no strings attached. Westinghouse had decided it could obtain glass from usual sources as cheaply as it could produce its own. The plant will be rented, leased or sold by the state. In Ashland, Armco Steel Corp., in line with a company policy of donating a building every so often to a town in which it has a plant, gave away a two-story brick structure which will probably be used as a civic center.

Lathers agree to pay freeze

AFL lathers in the Chicago area last month signed an agreement with the Employing Plasterers Assn. to ask no pay increases for 21/2 years. Members of Local 74 of the Lathers International Union (there are about 1,000) now receive \$3.30 an hour. The move seemed in line with a recent cooperative drive by the nation's lathers' and plasterers' unions and their employer associations to win back some of the lost plaster market (AF, Oct., '53, News). Meantime, Chicago plumbers, who now get \$3 an hour, were negotiating for more. Local 130 of Chicago's AFL plumbers (5,500 members) asked an 11% package increase-4% in wage increases and the rest in holiday and vacation pay. Contractors were putting up stiff resistance.

Biggest still growing

NAREB, the building industry's biggest trade group, was still growing. At the start of last month, membership reached a new record: 51,403, up 1,725 from Jan. '53.

Fraternal deals

The Knights of Columbus moved into the purchase and lease back of real estate in a big way. The fraternal order bought a Bridgeport Brass Co. plant in Bridgeport for \$1.8 million, will rent it back to the company for \$136,800 a year for 20 years, with options for 40 years more at a reduced figure. Earlier last month, the organization purchased the land under New York's Yankee Stadium and the adjoining parking fields for \$2.5 million, leased it back for 28 years at \$182,500 a year. In New Haven, the K of C leased a property it owned to the Harwel Corp., which in turn leased it to the Sheraton Corp. for 99 years.

New York completes its state building code for housing, starts on nonresidential rules

Building code modernization gained some of its most important ground last year among state codes. While private regional code groups struggled with their chronic shortage of money, state groups with access to tax-supported treasuries were active in New York, New Jersey, North Carolina and Indiana. At least seven other states revised some rules involving construction, or considered it.

In New York, the nation's leader in state building codes, the State Building Code Commission last month promulgated the multiple dwellings section of the state code. It covers buildings for three families or more, including motels, hotels, garden and multistory apartments. It includes height and fireproofing provisions for buildings for the ill or aged—convalescent, old-age and nursing homes.

Under state law, the new multiple dwelling regulations automatically took effect in the 99 communities that had adopted the commission's one- and two-family house regulations issued in 1951. These communities-10 cities, 31 towns and 58 villages-represented 11% of the state's population outside of New York City and Buffalo, or a still greater percentage excluding farm areas that have no pressing need for building codes. (Before the state commission was created in 1949, only 334 New York communities had any building regulations. In many small towns that could not afford a building department, however, these were nothing more than an ordinance stating that all building plans must be submitted to the town governing body for approval.) As building experts saw it, the 99 adoptions were all anyone could reasonably expect in two years. Building code business moves slowly.

Strong in spots. In Westchester County, both enjoying and harassed with the problems of a construction boom to accommodate the population and business foresaking or spilling over from adjoining New York City, 13 communities had adopted the state code. Around Syracuse, there was another series of 18 chain reaction adoptions, as towns observed the ratifications of neighboring communities.

To avoid charges of trying to impose state control over local communities, the NY commission was refraining from arm-twisting tactics to push acceptance of its regulations. It boasts that 27 of the 99 adoptions to date were made by local governing boards who communicated with the commission only to get copies of the state law and the code.

What it costs. The bill for the commission's work was averaging \$272,000 a year, but this included work drafting and issuing rules and regulations for the state's separate multiple residence law enacted in 1951. This is a mandatory law covering all residential structures for three or more families everywhere in the state except Buffalo and New York City which are covered by a separate act. In communities adopting the state building code, however, the multiple residence law becomes inoperative for new construction, but not for prior construction.

Having state financing and a staff of nine technicians, New York was doing what BOCA and other regional code organizations wanted to do for code modernization but were unable to do faster for lack of funds.

New York's next big task: preparing the "comprehensive" state code, which will cover nonresidential construction. It will be at least another two years in the making.

Other 1953 state code developments:

New Jersey—A code and manual that communities could adopt by reference on a voluntary basis, the state's first, was ready for official promulgation after seven years in the making. Printed copies should be ready for distribution next month. But no funds were provided yet for an administrative staff to keep it up to date.

North Carolina—A 1946 code was completely rewritten. The new code was essentially the BOCA basic code. It was mandatory throughout the state as a minimum. It covered everything except farm, temporary and one- and two-family buildings.

▶ Ohio—A revision of the obsolete 1911 law prepared for the Ohio Program Commission by Paul Baseler was submitted to the legislature in March but died in committee. A new legislative committee that superseded the program commission was trying to simplify the proposed revision for resubmission to the 1955 legislature.

>Indiana — The administrative building council directed by Bert J. Westover, began drafting a separate school construction code to supplement the construction, electrical, plumbing and heating state codes enacted in 1945. Indiana's state code are mandatory minimum regulations.

▶ Kansas—A state building code recommended by the legislative council after a two-year study was killed in the legislature. However, the State Board of Health, with power to recommend a standard plumbing code for municipalities, gave its approval to the National Plumbing Code for communities that want it.

Arkansas—The legislature adopted several minor amendments in the state plumbing code, which was enacted in 1951 and was based on the National Plumbing Code. It was the only state code affecting buildings in Arkansas. It is mandatory statewide.

▶ Colorado—The State Board of Health junked its 1932 plumbing code. In its place, it adopted the National Plumbing Code with minor changes. It became a mandatory minimum standard throughout the state.

> California The legislature created a State Buildings Standards Commission under orders to compile a single code for all public building construction in place of ten sets of regulations now issued by different agencies. Revised, clarified earthquake safety regulations for school construction were issued, effective this month.

▶ Washington—The legislature killed an earthquake safety construction code proposed by a group of structural engineers.

Massachusetts—A legislative committee appointed to study the state's building regulations reported it had no recommendations for changing them. Massachusetts does not have a state code, but the Board of Standards of its Department of Safety must provide free code writing or revising assistance and counsel for any community that asks it.

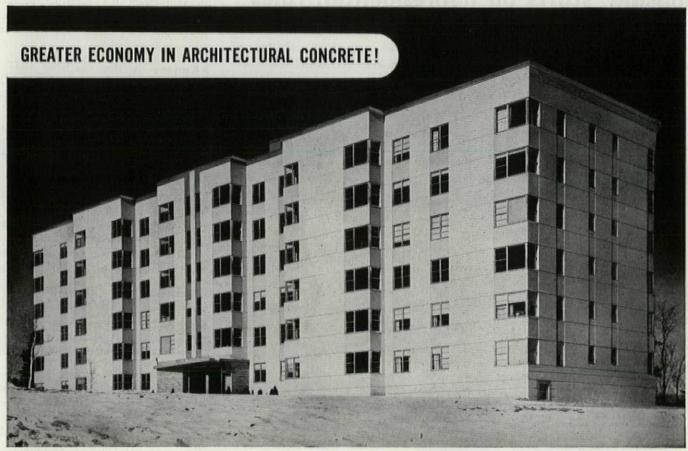
Hube Henry, Hedrich-Blessing



\$5 million war memorial to rise in Milwaukee

After seven years deliberation, the Milwaukee County Board approved this handsome musichall-and-art-center war memorial last month. The site is in Juneau Park close to Lake Michigan (off lower left in photo, at the end of the wide walk). Fan-front building at left is

the music hall, to seat 3,500; at right is the fivestory hollow-centered veterans building and art center that may start this summer. Porter McCray of New York's Museum of Modern Art will help plan the latter. Architects: Eero Saarinen and Maynard W. Meyer & Associates.



Mount Royal Manor Apartments, Duluth, Minn. Contractor-Owner: W. C. Smith, Inc. Architect: A. Reinhold Melander-both of Duluth.

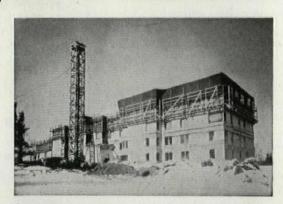
Owner-builder notes "lower costs" with Atlas Duraplastic* Cement

GOOD WORKABILITY is a prime essential in the success of architectural concrete since it serves as both a structural and a finish material. W. C. Smith, whose firm is contractor and owner of the Mount Royal Manor Apartments in Duluth, found "concrete made with Duraplastic has better workability, requiring less effort in placing, and that helps lower costs."

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You'll find it requires less mixing water for a given slump. And its more plastic mix aids proper placement, resulting in improved surface appearance. Moreover, since entrained air minimizes bleeding, or water gain, and segregation, concrete made with Duraplastic is also fortified against the effects of freezing-thawing weather. Both features add up to better concrete.

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PEOPLE: Contractor Cliff Strike accuses Travelers Insurance of monopolizing Hartford; Architect Daniel Higgins dies

Clifford S. Strike, hard-hitting president of F. H. McGraw & Co., Hartford, Conn. constructors, bounced a rock off the Travelers Insurance Co. last month in a David-and-Goliath duel over who gets the one television

David Robbins channel to b



STRIKE

channel to be assigned to Hartford. Strike, cofounder and chairman of the newly-formed Hartford Telecasting Co. (its president is Harry C. Butcher, exEisenhower aide now a Santa Barbara broadcasting entrepreneur) said he has twice received overtures from

the Travelers Broadcasting Service Corp.—an adjunct of the insurance company—to give up and join the family. He refused.

Instead, Strike boldly argued before the FCC last month that the Travelers Insurance Co. already "dominates the economic life of Hartford" and, that if it adds TV to its empire "Hartford will become a company town completely subservient to the company." In support of his stand, Strike filed a motion with FCC listing nine Hartford banks (out of the city's 11) in which Travelers owns stock, has a representative on the board of directors, or both. He testified: "Travelers has obtained overwhelming dominance through stockholding and interlocking directorates as well as through its banking and other activities, which are beyond the proper and lawful preview and authority of an insurance company." Despite protests from Travelers that such monopoly accusations were out of order, FCC's broadcast bureau agreed to consider the question at a mid-January hearing on the rival applications. Some onlookers saw wide implications even in the decision to consider the matter. Could other contesting applicants for TV or radio licenses now accuse their opponents of threatening the public interest because they were already too big? Commented FCC Counsel Arthur S. Feld in endorsing inclusion of the monopoly question: "Substance is more important than form."

Two years ago, Mayor Joseph S. Clark Jr. of Philadelphia asked AIA to suggest three men qualified for the \$8,920-a-year job of city architect. From the list, the city picked George 1. Lovatt Jr., who had practiced in Philadelphia with his father since 1927. Last month, Probate Property Commissioner George Di-Lauro fired Lovatt for insubordination and unacceptable performance. Lovatt explained that DiLauro, who was an accountant before getting his City Hall post, called him insubordinate because "I told him I didn't think he was capable of judging anyone's ability as an architect." Said Lovatt: "From my point of view I have given the city a satisfactory per-

formance." Lovatt called the dismissal "unfair." The local AIA protested to Mayor Clark that it was "grossly unfair."

Stockholders warmed things up at an annual meeting of Thompson Starrett Co., one of the nation's big construction firms. Through persistent questioning they gained the admission from executives that the company was in the red, including a loss of \$120,000 for July-Sept. '53. Asked why so many directors had resigned in the past few years, J. R. Van Raalte, president, said in part: ". . . because they were disloyal." Arthur R. Herske, a former director who resigned recently, said "21 directors have come and gone" and the reason he had been compelled to go was because he had prepared a report recommending Van Raalte's dismissal. The president said later he had not meant to imply that all former directors were disloyal-"only one or two recent ones we requested to resign." Stockholders were told that "something is actively being done" toward merging Thompson Starrett with another firm to cut losses.

Daniel Paul Higgins, 67, one of the great promoters of architecture of his time, died Dec. 26 in New York. He was born in Elizabeth, NJ, took mail-order and extension courses in business and architecture and started prac-



HIGGINS

tice in 1905. Cheerful, outgoing, he had a gift for handling (and for enjoying) people, for getting over the political humps of big business and for keeping the dollar volume of the firm of Eggers & Higgins at top level.

Higgins was the salesman; Otto R. Eggers was

the design genius. Working closely together, they produced a torrent of buildings—military installations, numerous churches and college buildings and more than 40 hospitals or medical schools. At his death in 1937, they inherited the mantle of John Russell Pope, celebrated architecture of the Roman days of American architecture. Higgins was a man of civic affairs as well as of architectural, and served on New York City's Board of Education from 1937 to 1945. He was also active in lay activities of the Catholic Church and in many youth organizations.

Other deaths: Alonzo H. Bankston of Savannah, president of the Bankston Lumber & Export Co., a director of the National Hardwood Lumber Assn. and a past president of the National Lumber Exporters Club, Dec. 5 in Savannah; Charles Gibbs Adams, 69, California landscape architect and former president of the Los Angeles City Planning Assn., Dec. 21 in Los Angeles; Louis H. Bean, 75,

Peter Breinig, Monterey Herald



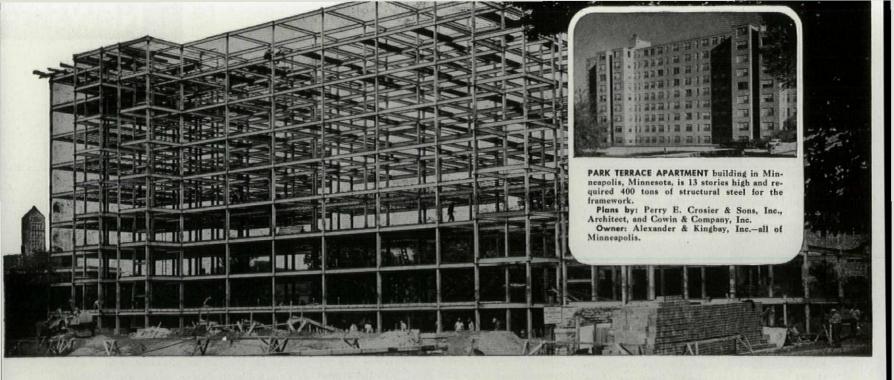
ARCHITECT OWINGS AND BRIDE

formerly with Stone & Webster Corp. and Dwight P. Robinson & Co., and chief of the real estate section of the RFC during World War II, Dec. 24 at his home near Warsaw, Va.; Walter J. Salmon, prominent Manhattan builder-owner after whom the 60-story Salmon Tower at 42nd St. and Fifth Ave. is named, Dec. 25 in New York; Lee Shubert, 78, president of Shubert Theatrical Enterprises, owner or controller of some 38 theaters, Dec. 25 in New York; John S. Macdonald, 60, president of the Walsh Construction Co. of Davenport, Iowa and New York, engineer who supervised construction of several tunnels and subways in the New York area, other major works in New England, Dec. 31 in Bronxville, NY; Harry Leslie Walker, 76, well-known church architect and a founder and past president of the Church Architectural Guild of America, Jan. 6 in Bronxville, NY.

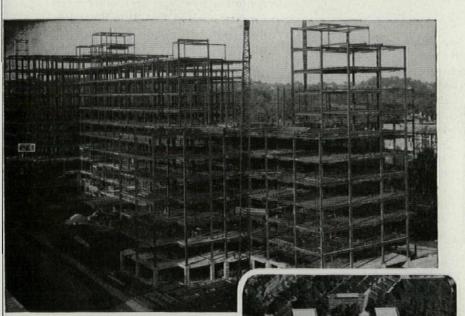
Architect Nat Owings, of Skidmore, Owings & Merrill, last month married the woman who designed his Christmas card at the bride's home in Carmel Highlands, Calif. She was Mrs. Margaret Millard, (née Wentworth), an artist who divorced Carmel attorney Malcolm Millard two years ago. Mrs. Owings is a graduate of Mills College in Oakland, studied art at the Fogg Museum in Cambridge, Mass., and at the Chicago Art Institute. She has had shows in Carmel, Santa Barbara and San Francisco, Her daughter, Wendy, was the only attendant; Mr. Owings' three daughters were also present. The Owings will travel in Turkey and Morocco for several months and then divide their time between a home in San Francisco and Mr. Owings' ranch in New Mexico. They also plan to build in Big Sur, south of Carmel.

Emily Otis Owings, the architect's ex-wife, also remarried last month in Santa Fe. Her husband is John Bornes of Albuquerque, New Mexico manager for the Denver Fire Clay Co.

The suspected suicide disappearance of a former California public housing official was solved this month when Harry A. Barbour, 61, was found living with his wife and daughters in the Washington suburb of Glassmanor, Md. Barbour, who lived in Oakland when he vanished in Nov. '48, was at one time executive (continued on p. 52)



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Contractors, Inc.

THESE two large, modern apartment buildings—one in Baltimore, the other in Minneapolis—are good examples of sound structural steelwork. They also show that American Bridge plays no favorites as to connection methods. Bolts were specified for the Park Terrace Apartment building, and welded construction was called for on the Marylander.

Just as one type bridge is not best for every location, no single method of steel construction can be claimed the best for every type of tier building.

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STATE

BUILDING STATISTICS:

1953 expenditures set \$34.8 billion record; construction is biggest steel user again

When the Commerce Department and Bureau of Labor Statistics finished tabulating construction expenditures for 1953, they estimated total outlays at \$34.8 billion, an all-time record that topped the previous (1952) peak by \$2.2 billion or 6.8% (see chart at right and table below for outlays by main categories of construction).

Private construction expenditures last year were 8.3% ahead of '52, with the greatest increase in volume occurring in outlays for new dwelling units, up \$660 million (6.7%). Commercial construction set an all-time record of \$1.7 billion—up \$654 million, or a colossal 57.5%. Private religious, educational and public utility outlays also set new records in 1953. Private industrial building dropped only \$94 million, or 4%, instead of the sizable contraction that was forecast as the year began, and had its second biggest year in history. And virtually the entire \$94 million drop was offset by a \$91 million (5.5%) increase in public industrial construction.

Total public construction, federal, state and local, set another record, up \$402 million or 3.7% from the previous (1952) record.

As auto industry production slipped, the construction industry became the largest single direct purchaser of steel mill products again, a position it had not held since Oct., 1951. Last year's structural steel shipments through November, said the American Institute of Steel Construction, totaled 2,850,430 tons, compared with 2,439,094 in the first 11 months of '52, and an average of 2,057,157 in the 1947-50 period.

Manufacturers of building products used approximately 560 million pounds of aluminum last year, up 38% from 347 million pounds in 1952, according to a study by Edward C. Manix, vice president of Nichols Wire & Aluminum Co. He estimated they would boost their consumption this year another 33%, to 750 million pounds.

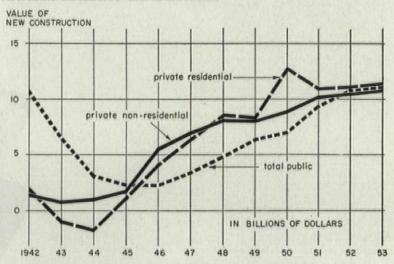
NEW CONSTRUCTION ACTIVITY

(expenditures in millions of dollars)	December			12 months		
Туре	'52	'53	% change	'52	'53	% change
PRIVATE						
Residential (nonfarm)	942	952	+1.1	11,100	11,905	+7.3
New dwelling units	850	850	.0	9,870	10,530	+6.7
Additions & alterations	74	78	+5.4	1,045	1,108	+6.0
Nonhousekeeping	18	24	+33.3	185	267	+44.3
Industrial	193	176	-8.8	2,320	2,226	-4.1
Commercial	112	182	+62.5	1,137	1,791	+57.5
Other nonresidential	128	147	+14.8	1,557	1,659	+6.6
Religious	37	45	+21.6	399	474	+18.8
Educational	33	39	+18.2	351	425	+21.1
Hospital	28	26	-7.1	394	316	-19.8
Public utilities	314	354	+12.7	4,003	4,439	+10.9
*TOTAL	1,795	1,908	+6.3	21,812	23,615	+8.3
PUBLIC						
Residential	49	39	-20.4	654	554	-15.3
Industrial	142	123	-13.4	1,667	1,758	+5.5
Educational	134	155	+15.7	1,619	1,742	+7.6
Hospital	36	21	-41.7	473	347	-26.6
Military	111	92	-17.1	1,388	1,323	-4.7
*TOTAL	755	753	3	10,826	11,228	+3.7
GRAND TOTAL	2,550	2,661	+4.4	32,638	34,843	+6.8
4.10			n		D	

* Minor components not shown, so total exceeds sum of parts. Data from Depts. of Commerce and Labor.

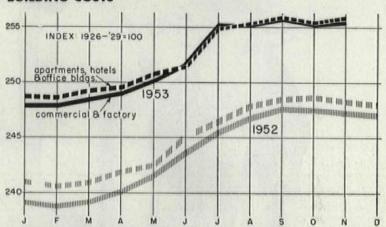
Construction expenditures in December fell to \$2.6 billion (from \$2.9 billion in November) a 10.9% seasonal decrease. But as befitted the close of the greatest construction spending year in history (see story), December outlays were 4.4% greater than those in December '52. In private commercial construction, in which last year's expenditures were 57.5% greater than in '52, December outlays for warehouses, office and loft buildings were 62.5% greater than December, '52. Spending for stores, restaurants and garages was 66.1% higher.

ANNUAL BUILDING EXPENDITURES



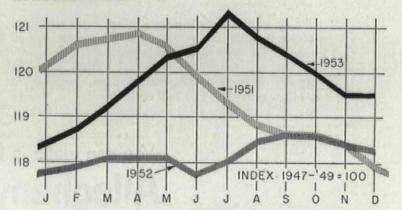
For the last two years total construction expenditures, as charted by the Bureau of Labor Statistics and the Department of Commerce, have been composed of almost three equal parts: private residential, private nonresidential, and public. For 1953 they all increased, totaled \$11.9, \$11.7 and \$11.2 billion, respectively. (See text.)

BUILDING COSTS



From October to November, building costs for commercial and factory buildings, as compiled by E. H. Boeckh & Associates, moved the merest shade upward, from an index of 255.2 to 255.4, a change of less than 0.1%. Boeckh's apartment, hotel and office building index rose from 255.4 to 255.7. At year end, The Austin Co., engineers and builders, noted that construction efficiency has increased steadily, because its building cost index has advanced less than 9% during the past five years, although labor rates rose 25 to 30% and materials costs 15 to 20%.

MATERIALS PRICES



The drop in wholesale building materials prices that began in July halted at least temporarily last month, when the BLS index of average prices at mid-month stood at 119.5, unchanged from mid-November. Late in December, Douglas fir dimension lumber prices rose \$4 to \$6 per M mainly because of large United Kingdom and Australian orders. Copper products prices faced the prospect of a decline, however, as Chilean supplies came on the market again.



One thing's sure - you can't JUST STAND THERE!

Like the gentleman-on-a-picnic, above, you're scheduled for some pretty fast action yourself. Because, for all business, the day's coming when materials become more plentiful, as restrictions disappear. That's also the day when orders will be harder to find, with competition as tough as any charging bull could possibly be. ● Give yourself a competitive edge with stainless steel. Nothing

else is as hard, strong and lastingly attractive—as impervious to corrosion, heat and wear. Used in equipment, Allegheny Metal can save on your costs . . . used in a product, it can add vital sales qualities. Now's the time to plan with it and for it, and all our facilities are at your command. Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.

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JUNIOR ALUMINUM building under construction in Cincinnati will house Alcoa's district sales office under a 20-year lease from Warwich Realty Co., owners. Pittsburgh Architect Paul Schell designed the \$500,000 two-story 51' x 134' structure so a third floor can be added. It will be faced with extruded aluminum panels with green porcelain enamel finish. Ends will be dark green granite. Builders: Frank Messer & Sons.



MUSIC BUILDING for the University of California Los Angeles campus is one of the first contemporary designs approved by the Regents, whose taste in architecture usually runs to a hybrid neoclassic style that made modernist California architects squirm. It will be built of reinforced masonry and concrete with several two-story glass wall sections. Its red brick will harmonize with other campus buildings. Blds for the 70,000 sq. ft. structure will be opened next month. Estimated cost: \$1.9 million. Architect: Welton Beckett & Associates. Besides a music library and a hall seating 522 persons, it will include 66 practice rooms, 12 classrooms, 10 small and one large study-listening rooms, 4 organ practice rooms, a recording studio, opera practice room seating 160 persons and band and chorus rehearsal rooms. Occupancy is scheduled in Sept., 1955.

NEW BUILDINGS

Herewith a new Forum feature—a roundup of the most significant nonresidential buildings and building projects disclosed recently across the nation (plus occasional items on noteworthy buildings just completed.)

\$10 million Miami Beach hotel

In Miami Beach on Dec. 29 a \$4 million building permit, largest in the city's history, was issued for the Fontainbleau Hotel on the site of the former Harvey Firestone mansion. It will be a 14-story, 545-room structure, is expected to cost \$10 million furnished. The property alone, with 700' of ocean frontage was bought in July '52 for a reported \$2.5 million. Ben Novack heads the owner syndicate. Taylor Construction Co. is the builder. Morris Lapidus is the architect.

Oceanarium for Los Angeles

Biological laboratories, a sealarium, a fishing pier and a three-tier hotel cantilevered over the ocean will form part of a giant Marineland of the Pacific, 65-acre oceanarium development at Palos Verdes, a few miles south of Los Angeles. First units, designed by Architect-Engineers Pereira & Luckman, were under construction: a restaurant, observation pier, administration building and two 1.5 million gallon exhibition tanks to hold sharks, tuna, manta rays and eventually whales. The site and first units, being erected by George A. Fuller of Los Angeles, cost about \$3 million. Head of the owning group: Henry U. Harris, senior partner in Harris, Upham & Co., New York Stock Exchange firm.

Bank notes

Boston's oldest savings bank, Provident Institution for Savings, will begin a \$400,000 four-story
addition in March. Plans by Architect Thomas
M. James call for closed circuit TV screens to
show tellers the bank's central records on each
customer's signature and balance. As each
transaction is recorded in the depositor's pass
book it also will be recorded electronically in
the bank's central accounting department. . . .
Bank of America plans a \$12 million construction program during the next 18 months, in-

cluding 46 new buildings for existing branches, and major alterations or additions for at least 40 others. . . . First National Bank & Trust Co. and the National Bank of Tulsa are erecting "drive-in" buildings as a result of a recent ruling that teller services that do not involve "banking discretion" do not violate Oklahoma's law banning branch banking. The buildings are basically parking garages with teller booths connected to the banks by pneumatic tubes up to 400' long. First National is erecting a \$450,000 six-story structure, and National Bank an "autoramp" building that will park 100 to 150 cars. Behind the need for drive-ins: the parking problem.

Important Commissions

Architect Welton Becket will design the shopping facilities for the \$100 million Penn Center development in Philadelphia. . . . Manhattan's controversial Coliseum redevelopment will have the design services of Skidmore, Owings & Merrill.

Schools and colleges

Dormitories for 1.000 men at Rutgers University, New Brunswick, NJ, were authorized last month by university trustees. National Life Insurance Co. of Montpelier, Vt. will finance them. . . . North Carolina floated a \$20 million bond issue for public schools late in November and Florida a \$15 million issue to cover the first portion of a \$100 million program. Anticipating about \$9 million from the state, Florida's Dade County school board last month approved a \$10 million construction program. . . . Milwaukee has embarked on a \$40 million school construction program. . . . Winnetka, III. voters last month approved bond issues for \$5.8 million for a new high school and auditorium. . . . New York City's board of education approved final plans of Architects Eggers & Higgins for a \$6 million East Queens high school, and signed a contract with Architects Kelly & Gruzen to design a school of printing that would be the largest in the world, house \$2 million of equipment.

Apartments and hotels

Ready for bid: a \$2 million, 14-story luxury apartment for San Francisco's Russian Hill. Architect Angus McSweeney and Attorney Philip Barnett plan 98 three- to five-room apartments plus four hillside floors to garage 107 autos. The building typifies the gradual replacement of the quaint houses built after the '06 fire with tall apartments in one of the city's toniest close-in residential sectors. . . . In Reno, construction was to start this month on a \$3 mil
(continued on p. 48)



Metropolitan will replace home office, except tower

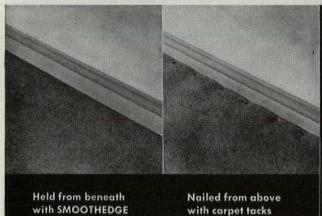
Old and new will be merged when Metropolitan Life demolishes all but the famous 50-story tower of its 43-year-old headquarters in New York. In place of the 11-story offices girdling the tower will rise a new 12-story air-conditioned building. The 695' tower was the tallest building in the world when completed in 1909. It is still eighth highest in New York, ninth in the nation.

Leonard Schultz & Associates made preliminary plans for the new 1 million sq. ft. building, which will occupy the full block. After Schultz died in 1951 the successor firm, Lloyd Morgan & Eugene Meroni, completed the plans. Starrett Bros. & Eken are the builders. Cost: \$23 million. Building in background in sketch is the Metropolitan annex on the adjoining block.





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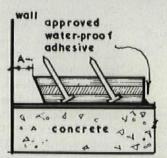
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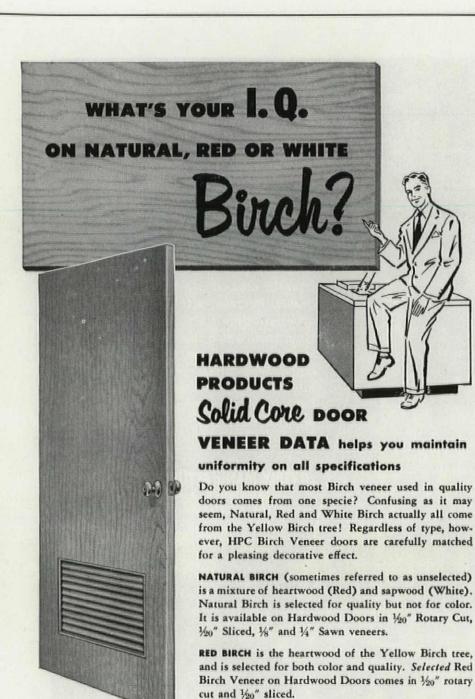
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NEW BUILDINGS (continued from p. 45)

lion downtown hotel, The Holiday, owned by a syndicate headed by Norman Blitz and John Mueller. It would be the only sizable hotel in Nevada without a gambling casino. . . . Being planned by Ft. Wayne Homebuilder George A. Poog: a luxury hotel, apartments, beach clubs, a shopping center and homes colony on a two-mile stretch of beach on Mahoe Beach in Jamaica, British West Indies.

Small office buildings

In Indianapolis the Bodner Construction Co. was erecting a \$1.5 million, six-story, 70,000 sq. ft. office building after a four-months wait for structural steel. Although the office lay out-side the regular business district it was 90% rented before it was topped out. Behind it a four-story garage was planned for tenants.... In Silver Spring, Md., for decades a quiet, sleepy Washington outpost, Architect Fon J. Montgomery has designed a ribbon window, air-conditioned, seven-story suburban store and office tower with about 40,000 sq. ft. of floor area for Realtor-Owner Sam Eig. Builder: Charles E. Smith. Approximate cost: \$825,000.

Lift slab + porcelain enamel

In Camden, N.J., RCA Victor began five interconnected lift-slab buildings with porcelainenamel and glass walls. Designed by Architect Vincent G. Kling of Philadelphia, the buildings are for an administration and lab-



12-story office will be Albuquerque's tallest

Albuquerque's highest building, a 12-story downtown office that looks like a cross between the UN Headquarters and Lever House is being built for Rancher-Banker Albert G. Simms by Lembke-Clough & King from designs by Architects Max Flatow and Jason Moore. Completion is scheduled by mid-year.

End walls of the \$2 million Simms Building will be faced with rose-colored brick. The long north and south walls will consist of continuous double-glazed 6'6" windows separated at each floor by 4'6" aluminum spandrels. The cantilevered tower will have separate foundation columns, and a half-inch expansion joint will permit it to settle, or move with earthquake forces, independently of the surrounding one-story section. It is in the heart of the business area.



Milwaukee YMCA to have glass-aluminum tower

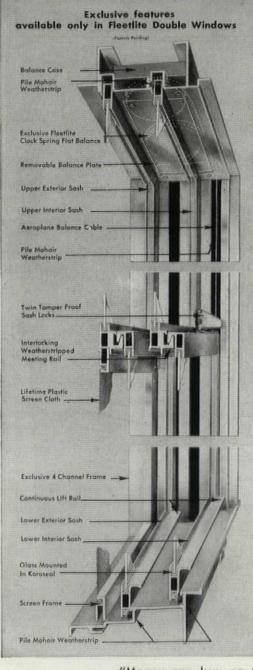
Milwaukee's new central YMCA will have a glass and aluminum tower of 11 stories, ultimately 18. Architects Herbert Grassold and Elmer Johnson designed the \$3 to \$4.5 million structure after studying Lever House and the UN building in New York, the US Steel and Alcoa buildings in Pittsburgh, and new dormitories at Harvard and MIT. Besides gymnasium, pool, a small theater, chapel and various social and banquet facilities, the building will have 274 residence rooms (484 when 18-stories high).

oratory headquarters for RCA's Home Instrument & Service Co. The multi-million dollar air-conditioned structures will total 325,000 sq. ft. Contractor: Turner Construction Co. . . . Eaton Manufacturing Co., producer of auto parts, is planning a 70,000 sq. ft. research center to be started late this year on a 30-acre tract in Bratenahl, Cleveland suburb. . . . Great Lakes Transport Co., which ships automobiles over a tristate area for Chrysler, has started a terminal building in Chicago designed by Barancik, Conte & Associates. To keep the outside as clean as possible, walls will be faced with vitreous enamel panels and glazed tile.

Public and institutional

Ground was broken early this month for a \$3.5 million Jewish Federation pavilion and professional services building at Chicago's Michael Reese Hospital designed by Loebl Schlossman & Bennett, architects. Poirot Construction Co. won the general contract with a \$2.5 million bid. . . . George Sollitt Construction Co. was awarded the general contract for two nine-story apartments for married students and staff members at Chicago's Illinois Institute of Technology. The buildings will cost about \$1.1 million each. They were designed by Ludwig Mies van der Rohe. Exteriors will resemble Mies' Carman Hall dormitory (AF, June '52, News), which opened in November. . . . Public donations will finance an officers' and airmen's mess and recreation building at Van Nuys base of the California Air Na-

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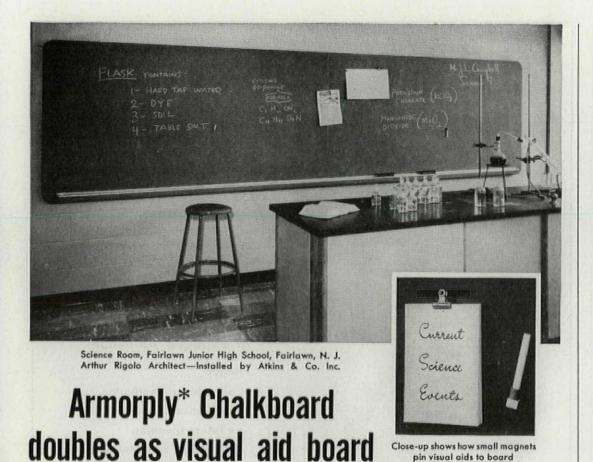


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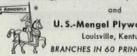
Plan on using Armorply Chalkboard for an installation that never needs resurfacing one that is guaranteed to be as permanent as the building.

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tional Guard. Architect Welton Beckett has contributed the designs for the steel and concrete structure. It will be built around an indoor-outdoor patio with swimming pool, barbecue and recreation facilities.

New industrial projects

National Biscuit Co. of New York will build a \$10 million bakery on a 28-acre in-town site in Philadelphia. General Contractor: White Construction Co. of New York. . . . General Electric Co. announced plans for a 400-worker multimillion dollar plant and headquarters for its hermetic motor department at Holland, Mich. Ground for the one-story building will be broken this spring. At GE's Appliance Park in Louisville, Ky. construction was starting on building No. 5, 700' x 1,000', the largest unit of the company's extensive regional manufacturing center. . . . National Supply Co., makers of oil field machinery at Pittsburgh, will build a \$3.5 million plant at Gainsville, Tex. . . . Reaction Motors Inc. of Rockaway, N.J. awarded a construction contract to Ferber Co. of Hackensack, N.J. for a \$3.5 million plant for liquid fuel rocket engines for the Navy. . . . A \$2 million iron powder plant was started in East Toledo, Ohio, by Republic Steel Corp. It will be one of the nation's largest. . . . New facilities costing \$5 million are planned for the metals division of Olin Industries, Inc. at East Alton, Ill.

HHFA trims Kansas City bid for Title I grant

HHFA was putting the brakes on handouts to cities for Title I urban redevelopment projects. In approving Kansas City's Northside project last month it sliced some \$500,-000 off the US grant the city was led to believe it would collect when it submitted the project to HHFA in the Truman era. Assistance finally approved: a \$2,235,947 temporary loan, but a capital grant of only \$1,179,631.

The ten-acre project, now largely flophouses and cheap stores, lies just north of Kansas City's central business district and immediately south of the proposed Sixth St. intercity freeway. It will be redeveloped primarily for commercial parking. HHFA, under Republican rule, refused to accept the city's claim that the entire site was "predominantly residential," which it would have to be to qualify for a grant since the reuse would not be mainly housing.

Solution: project boundaries remain the same, but HHFA excluded nonresidential portions constituting about one-third of the site from its handout calculations. The remaining two-thirds did qualify as "predominantly residential," the HHFA agreed (thus indicating that only about one-third of the gross site was actually residential). The city was not blocked from proceeding with its entire project. But if it condemned the excess nonresidential portions it would have to bear the entire expense or the loss on any resale of the land, instead of tapping Uncle Sam for more than it deserved.

Construction hit by ten of 28 biggest strikes

Construction led the nation's industries in labor trouble last year. Bureau of Labor Statistics tabulations of 28 strikes involving 10,000 or more workers revealed this unhappy picture: ten, or better than one out of every three, involved the building industry. Of the seven biggest work stoppages lasting more than a month, five were in construction.

Only one US strike caused more than 1 million man-days of idleness last year. It was in construction, too: a 41-day northern and central California tie-up in June and July. Excluding week ends and holidays, the dispute idled 60,000 workers for almost 1.75 million man-days, or more than 6% of the entire 27 million lost last year in all stoppages of more than 10,000 workers. It ended with a 15¢-an-hour wage increase across the board.

Construction's four other 1953 strikes that continued more than a month (including week ends and holidays): Detroit, 50 days, 30,000 workers; Philadelphia, 48 days, 20,000 workers; Kansas City, 71 days, 22,500 workers; Indianapolis, 36 days, 10,000 workers.

Social workers rap NY's big recreation buildings

"Small playgrounds close to home will mean more to children than larger playgrounds a few blocks away. The city should adjust its thinking about playground acquisition and playground supervision accordingly."

This recommendation of participants in House & Home's Round Table on city conservation and rehabilitation (H&H, Oct. '53), found strong support from New York social workers. They attacked as "shamefully wasteful" the city's plans for multimillion dollar recreation centers sponsored by Robert Moses in his role as commissioner of parks.

The main attack came at a budget hearing on a 1954 allocation of \$1.7 million to start a two-block, \$3.1 million center in Brooklyn, the second in a group of nine such projects planned by Moses' park department. Cried critics representing the Citizens Union, the Citizens Committee on Children and United Neighborhood Houses: the Brooklyn center was "a glaring example of unwise planning. . . . I don't think Mr. Moses knows too much about the type of recreation programs required by overcrowded, tense neighborhoods. . . . [He] is more interested in the architecture of buildings than the architecture of people."

The first center cost \$1 million on park property already owned by the city. It was completed in 1951. With gymnasium, indoor swimming pool, manual training, arts and crafts facilities etc., it requires 35 employees to operate it at an expense a park department spokesman said—after the hullabaloo arose—was "not available." Critics tagged it



Fairless Works of United States Steel Corporation's plant at Morrisville, Pa., on the Delaware River, is the country's largest single steel construction project undertaken at one time. Waterproofing done by Lewis and McDowell, Inc., New York City.



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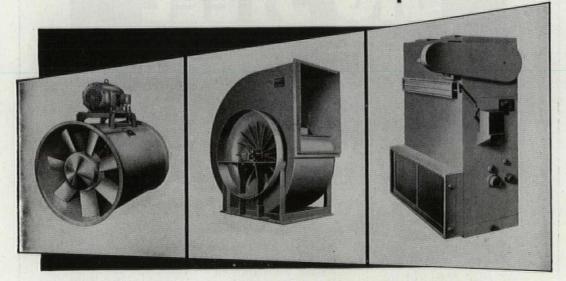
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Engineering sales representatives in principal cities are at your service.

* The "Q" Factor-the built-in QUALITY which provides trouble-free satisfaction and long life.



Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

AIR CLEANING VENTILATING FORCED DRAFT COOLING

AIR TEMPERING HEATING

INDUCED DRAFT, EXHAUSTING

a "Grand Central in a bathtub," not used to one-quarter of its capacity, "scary for little children" and "lonely and appalling."

Moses fired his return salvo the same day in a bristling statement rushed to the budget hearing by special messenger: his "professional critics" were guilty of "grossly misleading and malicious statement" . . . the first center was "a great success" . . . "the cost of small centers scattered around would be absolutely prohibitive" . . . indoor centers constitute "one of the main if not the very best attack upon the youth problem . . . [because] outdoor facilities are fully usable less than half the year."

In the end Moses got most of what he wanted-\$1,285,000 instead of \$1,708,000 to start the second huge recreation center.

PEOPLE (continued from p. 41)

director of the Richmond (Calif.) Housing Authority. He told reporters that he had planned to commit suicide (he had mailed his wife a note) because his eyesight was failing and he had suffered financial setbacks. But a passer-by talked him out of it, he said, and he started hitchhiking east. He stayed with friends in Chicago for nearly a year and a half, underwent a successful eye operation and got in touch with his family. They moved to Washington last November and Barbour took a job with a construction firm. "When you are up around the top, you don't really know how many friends you can count on," said Mrs. Barbour. "But we found we had plenty of them."

OPINIONS. These intellects commented on matters of moment to building:

- "More and more I have been giving increasing weight to human and political factors in trying to figure out what is going to happen -and less to so-called laws of economics."-Arthur A. Smith, vice president and economist. First National Bank in Dallas.
- "We have, and still do, endorse low-cost public housing because we know that colored people occupy . . . 50% of the units in the south."-Ruby Hurley, regional secretary of NAACP.
- "Smog is a man-made problem and man must control it. We can't stay in southern California unless we do."-Dr. S. H. Cameron, UCLA plant physiologist, at smog study meeting in Riverside.
- "You can isolate yourself from the slum district, but you can't isolate your pocketbook from it."-Yates Cook, NAHB rehabilitation director.

NAMED: Maj. Gen. J. Stewart Bragdon, deputy chief of Army engineers until his retirement in 1951, as a vice-president of Vermilya-Brown Co.; B. Robert Swartburg, Miami-New York architect, as chairman of the board of design of the upcoming Florida World Fair; Peter W. Eller, re-elected chairman of the board of governors of the Building Trades Em-

(continued on p. 54)

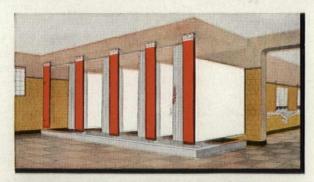
Untimely obsolescence of rest rooms usually occurs when and where it is invited ...

Sanymetal NORM-ANDIE Type Toilet Compartments endow a rest room environment with dignity and good



Sanymetal ACADEMY Type Toilet Compartments are suitable for conservative but modern rest room environments.

Sanymetal CENTURY Type Ceiling Hung Toilet Com-partments offer the utmost in sanitation and provide modern, distinctive rest room environments for schools, institutions, terminals and other public buildings.



Sanymetal CENTURY Type (Ceiling Hung) Shower Stalls of Sanymetal "Parcena" (Vitreous Parcelain on Steel) Partitions and Pilasters, as arranged for a typical club installation. Also available in Sanymetal "Tenac" (synthetic enamel baked-on over Galvanized, Bonderized Steel).

"PORCENA"

(Vitreous Porcelain on Steel) A metal base material that is impervious to moisture, odors, cleaning and uric acids, oils and grease. It is rust proof. Available in 21 glistening colors.

This is Sanymetal

"TENAC"
(Baked-On Paint Enamel
over Galvanized, Bonderized* Steel)

ized* Steel)

A metal base material that is notable for the positive adhesion of the baked-on paint enamel to the metal and its resistance to corrosion. Its lustrous, protective finish assures long-lasting newness. Available in 21 gleaming colors.

The bare functional type of rest room is no longer adequate. It is obsolete before it is completed according to today's standards. To insure against untimely obsolescence consider the installation of wall-type plumbing fixtures and ceiling-hung toilet compartments. Such an installation provides a fixture free floor—a basic necessity for a high standard of sanitation and reducing maintenance costs to an all-time low.

The rest room environment that stays new is the rest room in which the most suitable type of toilet compartment available has been installed. Sanymetal offers several different types of toilet compartments for creating the most suitable rest room environdifferent types of toilet compartments for creating the most suitable rest room environment for each type of building. Sanymetal also offers and recommends Two Full Purpose Metal Base Materials which combine colorful attractiveness with long years of service life and effect important day-after-day savings in cleaning and maintenance costs. These Two Full Purpose Metal Base Materials—Sanymetal "Tenac" (Galvanized, Bonderized* Steel), a highly corrosion-resistant material; and Sanymetal "Porcena" (Vitreous Porcelain on Steel), the ageless and fadeless, rustproof material—represent years of engineering research and skillful adaptation by Sanymetal engineers of corrosion-resistant steels to the fabrication of new and different types of toiler compartsion-resistant steels to the fabrication of new and different types of toilet compartments. There is no other material that equals Sanymetal "Porcena" (Vitreous Porcelain on Steel). Sanymetal Toilet Compartments are also available in cold rolled steel.

Sanymetal Toilet Compartments and Shower Stalls embody the results of over 39 years of specialized skill and experience in making over 500,000 toilet compartment and shower stall installations. Ask the Sanymetal representative in your vicinity to demonstrate the worthiness of Sanymetal Toilet Compartments as protection against untimely obsolescence.

THE SANYMETAL PRODUCTS CO., INC.

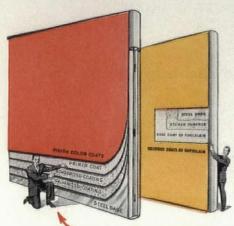
1687 Urbana Road . Cleveland 12, Ohio

Sanymetal Toilet Compartments embody the results of specialized skill and experience in fabricating over 500,000 toilet compartments in all types of buildings. Ask the Sanymetal representative in your vicinity for information about planning suitable rest room environments that will always stay new. Refer to Sanymetal Catalog $\frac{21b}{Sa}$ in Sweet's Architectural File for 1953 and Catalog $\frac{13a}{Sa}$ in Sweet's Industrial File for 1953.



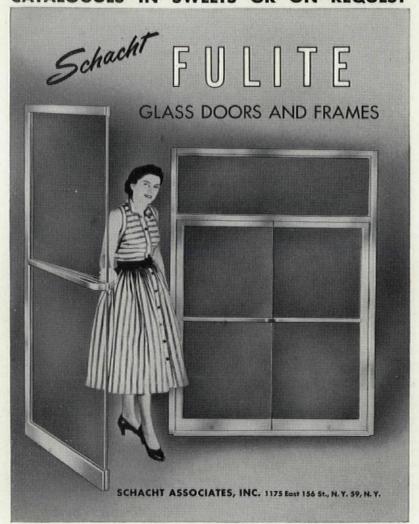
Trade Mark Reg. U. S. Pat. Off. *Treated with "Bonderite", a product of Parker Rust Proof Company

TOILET COMPARTMENTS SHOWER STALLS AND DRESSING ROOMS





CATALOGUES IN SWEETS OR ON REQUEST



PEOPLE (continued from p. 52)

ployers' Association of New York City; Brig. Gen. W. F. Heavey (Ret.), chosen project manager for the new Air Force and Navy bases in Spain by the four architectural and engineering firms in charge of design.

Glenway W. Maxon, president of the Maxon Construction Co. of Dayton and J. Rich Steers, president of J. Rich Steers Inc., New York contractors, were named recipients of the 1954 Moles Award for "outstanding achievement in construction." They become the fourteenth pair to win awards from the group, which is composed of leaders in heavy construction. Maxon, who was AGC president in 1951, is noted as a builder of dams, locks, shipyards and other heavy jobs. During the past 25 years his firm has completed approximately \$700 million worth of construction. Steers, president of his company since 1936, has seen it expand to do some \$250 million worth of construction in the past six years. He now has four large projects underway in the Mediterranean area.

Charles L. Farris, deputy director of HHFA's urban redevelopment program, became the \$15,000-a-year executive director of the St. Louis Land Clearance for Redevelopment Authority. Farris made a good and evidently lasting impression on St. Louisans while visiting there in 1949 to address a group of civic leaders drafting a slum clearance program, and again this past year to inspect the city's plaza district, which is slated for extensive park and apartment development.

Marcellus Wright Jr., regional director of AIA's middle Atlantic district, plugged for old-fashioned building skills at the West Virginia chapter's annual craftsmen awards dinner in Charleston, West Va. "Is there less need for craftsmen in the building industry because of the predominance of machine-made tools? Personally, I contest that thought on many grounds," said Wright. "No one has yet figured out how to dispense with the trained mason and lay bricks by machine, nor has anyone doped out how to get a dry roof without the careful workmanship of the trained roofer."

J. L. Groot was named president of Timber Structures, Inc. (headquarters in Portland, Ore.), largest fabricator of glued-laminated beams and arches in the nation. The firm has been without a chief executive since Oct. '52, when W. L. Van Arnam quit over management difficulties. Groat has been executive vice president since last July, was formerly with Allied Building Credit, construction financing company in Los Angeles.



Corbusier builds a second radiant city

Le Corbusier's 17-story "Cite Radieuse de Nantes," a 294-unit cooperative apartment is rising on suburban farmland seven kilometers from Nantes, France. It is basically a cheaper copy of the architect's radiant city in Marseilles, but, and, cries Corbu: "With the most interesting features, the community services, eliminated because of the government's stubborness." In Nantes, Corbusier foregoes such luxuries as a swimming pool, running track and seventh-floor shops. The Nantes building does offer radiant heating (the bill for each four-room apartment is estimated at about \$43 a year). It will have three elevators, and floors insulated with glass fiber—partly to save heat, mostly to deaden noise between apartments. Tenants will probably move in in about a year.

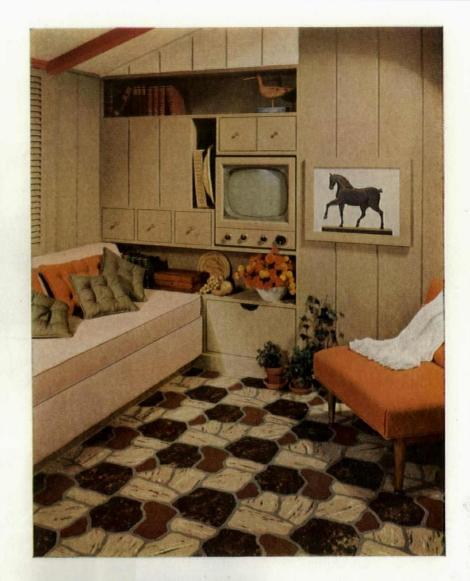
Announcing:

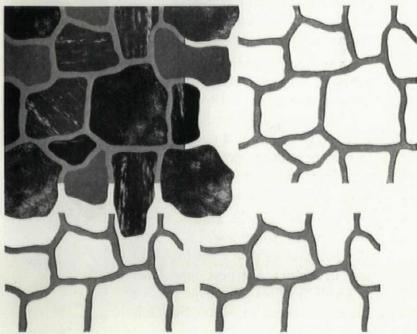
ARMSTRONG'S FLAGSTONE ASPHALT TILE

A revolutionary new custom effect in asphalt tile, "Flagstone" fits in perfectly with the trend to "outdoor look" materials in residential and commercial building. You can offer its extra sales appeal to a wider range of clients and prospects than you'd expect, due to a unique "grid unit" manufacturing technique that makes Armstrong's Flagstone Asphalt Tile available at far lower cost than a comparable floor cut on the job.

This modern interior shows the handsome custom-designed look of Armstrong's Flagstone Asphalt Tile. It's an excellent choice for restaurants, clubs, and many other commercial projects—and it adds the appeal of individual distinction to on-grade slab ranch-type houses, basements, and open-style living areas. It's an ideal floor in the remodeling field, too—especially for converted garages, enclosed porches, all-purpose rooms, and commercial redecoration.

EASY INSTALLATION is made possible by square 18" x 18" grids into which the shaped, precision-cut tiles fit. In this view, the grids are shown separated for clarity. When installed, the tiles along all sides of the grid interlock with the adjoining grid. This new technique permits "Flagstone" to be installed quickly and economically. No special tools are needed, and the floor is laid at labor costs comparable to custom-designed floors of square tiles.





ARMSTRONG'S FLAGSTONE ASPHALT TILE

A new ready-made custom effect

Armstrong's Flagstone Asphalt Tile is the first truly patterned resilient tile. Authentic in design, its revolutionary "grid" principle gives it a free-flowing, natural look previously unattainable in tile floors.

This outstanding flooring effect provides the long-awaited distinctive floor for modern on-grade slab ranch-type houses, and is also readily adaptable to traditional interiors.

The three handsome colorings shown here enable you to offer it for a wide range of decorative treatments. Each coloring combines plain, directionally grained, and swirl-marbleized elements.

Armstrong's Flagstone Asphalt Tile offers all the color clarity, alkali resistance, and other quality features of regular Armstrong's Asphalt Tile. It may safely be installed over concrete in contact with the ground, on grade or below grade, as well as over all types of suspended subfloors.

"Flagstone" should always be installed with Armstrong's No. S-160 Emulsion, rather than a cut-back type asphalt cement. For best appearance as an allover floor effect, special care should be taken to assure that subfloors are smooth and level.

ARMSTRONG CORK COMPANY

FLOOR DIVISION





No. 1081



No. 1082

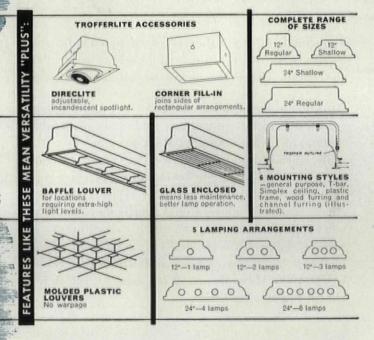


No. 1080

the Benjamin Leader Line presents Versatility "Plus"



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for Interiors of Distinction

Versatility plus efficiency and distinctive appearance . . . that's Trofferlite. Offices, stores and commercial establishments of all kinds take on a new look of distinction with these trim, slender units which appear to be a part of the ceiling. There is no limit to the variety of designs, arrangements and architectural effects you can achieve with these recessed Troffers. They are available in a wide range of styles and sizes, in individual units or continuous rows, as shown at left. For Interiors of Distinction, specify Versatility

For Interiors of Distinction, specify Versatility "Plus"... specify recessed Trofferlites. Complete catalog data sheets sent on request.

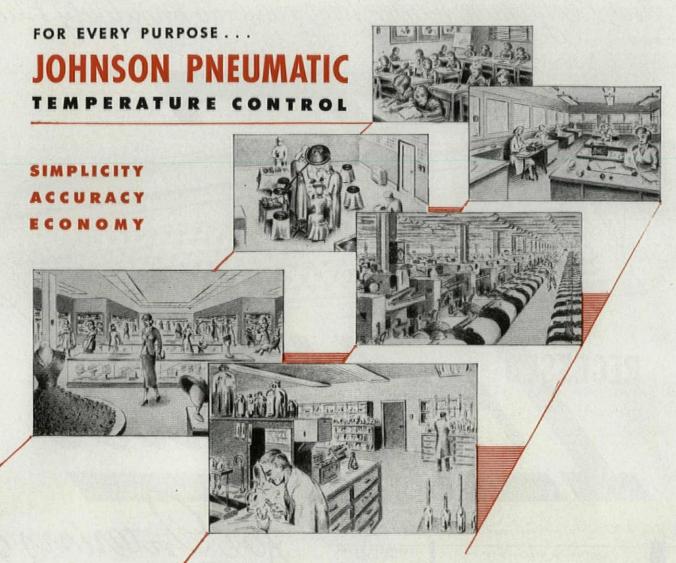
BENJAMIN

Exclusive licensee of the Leader Line in Canada:



Benjamin Electric Mfg. Co., Leader Division, Dept. YY, Des Plaines, Illinois, also makers of famous Benjamin lighting equipment and sound signals for Industry, Institutions and Commerce.

R-273-F



Pneumatic power—compressed air—is simplicity itself, adaptable, dependable, economical... In the automatic regulation of temperatures and humidities, for example, Johnson Pneumatic Control has been the standard since the '80's. Each Johnson controller is merely a reducing valve in a compressed air line, set and reset automatically by an accurate temperature or humidity measuring element, to transmit compressed air in varying amounts to the valves and dampers which it controls.

Johnson Valves, Damper Operators and other apparatus are equally simple. There are no mysteries here. And no complications! The operating cost of Johnson pneumatic equipment is very low—the only expense being the operation of a small compressor to supply air pressure. Where special conditions make it desirable,

Johnson furnishes other types of apparatus, such as electronic temperature and humidity controllers, to operate either pneumatic or electric operators.

Attesting to the accuracy, dependability and adaptability of pneumatic control are thousands of Johnson Automatic Temperature Control Systems in textile mills, chemical and food processing plants, schools, hospitals, hotels, shopping centers, airports, office buildings, apartments, and many other types of buildings. An experienced engineer from a nearby Johnson branch office will gladly explain the many compelling advantages of Johnson *Pneumatic* Control for your clients' buildings. There is no obligation. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.



JOHNSON Automatic Temperature and

MANUFACTURING • PLANNING • INSTALLING • SINCE 1885 Air Conditioning CONTROL



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Between the covers of this unique "Portfolio" are actual samples of more than 2,000 outstanding drapery and upholstery fabrics from world famous Schumacher's. An ideal reference file to have at your fingertips . . . and it's kept up to date, with everything that's new

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Butt Weld A BACKBONE OF STEEL FOR EVERY MASONRY WALL HIGH TENSILE STEEL 100,000 ELECTRIC BUTT WELDS
place all rads on
a single plane DESIGN BOND KNURLED SIDE RODS TWO MATIONAL DISTRIBUTION - FOUR MANUFACTURING PLANTS
CEDAR RAPIDS BIRMINGHAM PHOENIX SYRACUSE NOW ALERT ARCHITECTS ARE GETTING BETTER

PERFORMANCE FROM REINFORCED MASONRY WALLS

AT LOWER COST!

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ustom-fabricated, electrically-welded Dur-O-waL offers architects new design opportunities for ma-sonry construction. Dur-O-waL is emsonry construction. Dur-O-wal is embedded in mortar joint to give masonry walls a backbone of steel. It is butt-welded of high tensile steel (100,000 p.s.i.) to assure tight, neat mortar joints and side rods are knurled for maximum bond strength. Dur-O-wal incorporates architecture's oldest reinforcing principle, trussed design, to put more steel in the wall . . . every inch effective . . . because the side rods work together.

LOW-COST, SPEEDY APPLICA-TION AND NATIONWIDE AVAILABILITY CITED

Dur-O-waL handles fast, lies flat. It is fabricated in easy-to-handle 10 foot lengths. There is no tangle, no waste with Dur-O-waL and speedy handling with Dur-O-waL and speedy handling cuts building costs, Gone are the days of wrestling with unwieldy rods, because Dur-O-waL does the job better . . . faster. You can specify Dur-O-waL with confidence because it is nationally distributed from all principal cities and it is manufactured in the EAST, WEST, SOUTH and CENTRAL United

AT LAST! ... a reinforcing member that's easy to use. Does its job better and it's PRACTICAL.

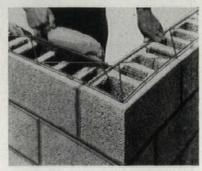


States. Dur-O-waL is your key to last-ing beauty and customer satisfaction for all masonry construction.

RECENT INDEPENDENT LABORATORY TESTS VERIFY MANUFACTURER'S CLAIM

You are invited to send for progress reports on the independent research studies now underway, which confirm Dur-O-waL's claim for maximum reinforcing strength and performance.

Write to plant nearest you for detailed information. • Dur-O-Wal Products, Inc., P.O. Box 628, Syracuse I, New York; • Dur-O-Wal Div., Dept. 651, Cedar Rapids Block Co., Cedar Rapids, Iowa; • Dur-O-wal Division, Frontier Manufacturing Co., Phoenix, Arizona; • Dur-O-wal Products of Ala., Inc., P.O. Box 5446, Birmingham 7, Alabama.



Alert architects across the nation have learned to depend on Dur-O-wal. . . , the reinforcing member that is changing modern concepts about masonry.

a Simple Case of logic...

Sherardizing

is galvanizing at its BEST



UNDERWRITERS'
LABORATORIES, INC.
INSPECTED
RIGID STEEL
CONDUIT

Sherarduct

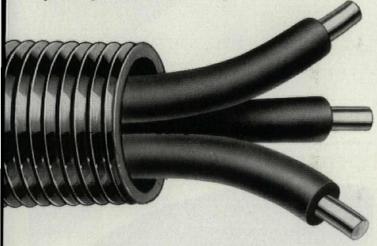
is galvanized conduit

at its BEST

It's the Sherardizing process that fortifies Sherarduct—a dry galvanizing process that actually alloys corrosion-resistant zine to the steel wall under heat. This is galvanizing at its best!

Sherardizing provides a 100 per cent uniform protective zinc coating over all surfaces, including the hill and valley of every single thread—safeguarding the conduit system against rust and corrosion for all time. *This* is Sherarduct, galvanized conduit at its best!

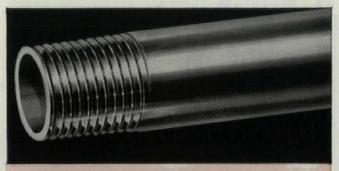
Still further protection is provided by the baked-on Shera-Solution, an alkyd-like enamel that seals the zinc against acids and other corrosive elements. Sherarduct Conduit provides positive protection for all wiring!



Proof of SHERARDUCT quality:

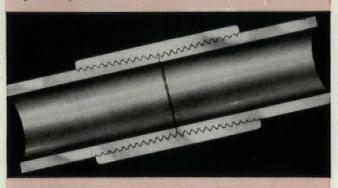
Write for the booklet, "Facts about Sherarduct."
Learn more about the Sherardizing
principle—how it makes Sherarduct
"galvanized conduit at its best."

Insist on National Electric
SHERARDUCT.



Threaded before Sherardizing

Sherarduct threads are cut before, not after, galvanizing. Even the base of the clean, sharp threads has uniform, full zinc protection.



Protection for Threads

Surfaces and threads of the Sherarduct coupling are fully zinc protected. Accurately cut threads permit butting of conduit within the coupling—provide complete protection of the entire conduit system.



Works easily . . . Fishes easily . . . Bends without flaking

Gradual heating and cooling of the Sherardizing process normalizes the metals. Result: easier working, forming and bending on the job. Butted joints leave no gaps to interfere with "easy fishing,"

EVERYTHING IN WIRING POINTS TO

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PICSTOT ... for design unlimited

This outstanding interior gives striking testimony to the unlimited design flexibility of lathing and plastering.

Graceful, free-flowing lines were achieved through the dramatic treatment of the plastered staircase soffit and the distinctive, suspended canopy. Such design was feasible only with plaster.

A suspended lath canopy offered the only practicable method of achieving the desired lighting ... a combination of recessed fixtures and indirect lighting from a peripheral plaster trough.

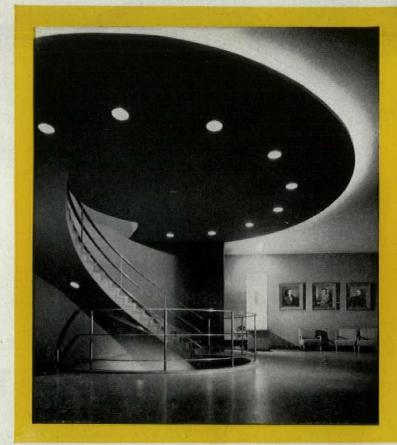
Acoustical plaster was the one material which could provide essential sound absorption without extraneous ceiling patterns to detract from the sweeping lines of the basic motif.

Modern Plaster Is Better Than Ever!

Completely plastic and adaptable to virtually any concept of line or form, plaster readily conforms to all interior treatments...from traditional to contemporary.

Ask your plastering contractor about recent advances in methods and materials. Ask him, also, about the new significant standards for lathing and plastering craftsmanship, recently adopted by the National Bureau for Lathing and Plastering.

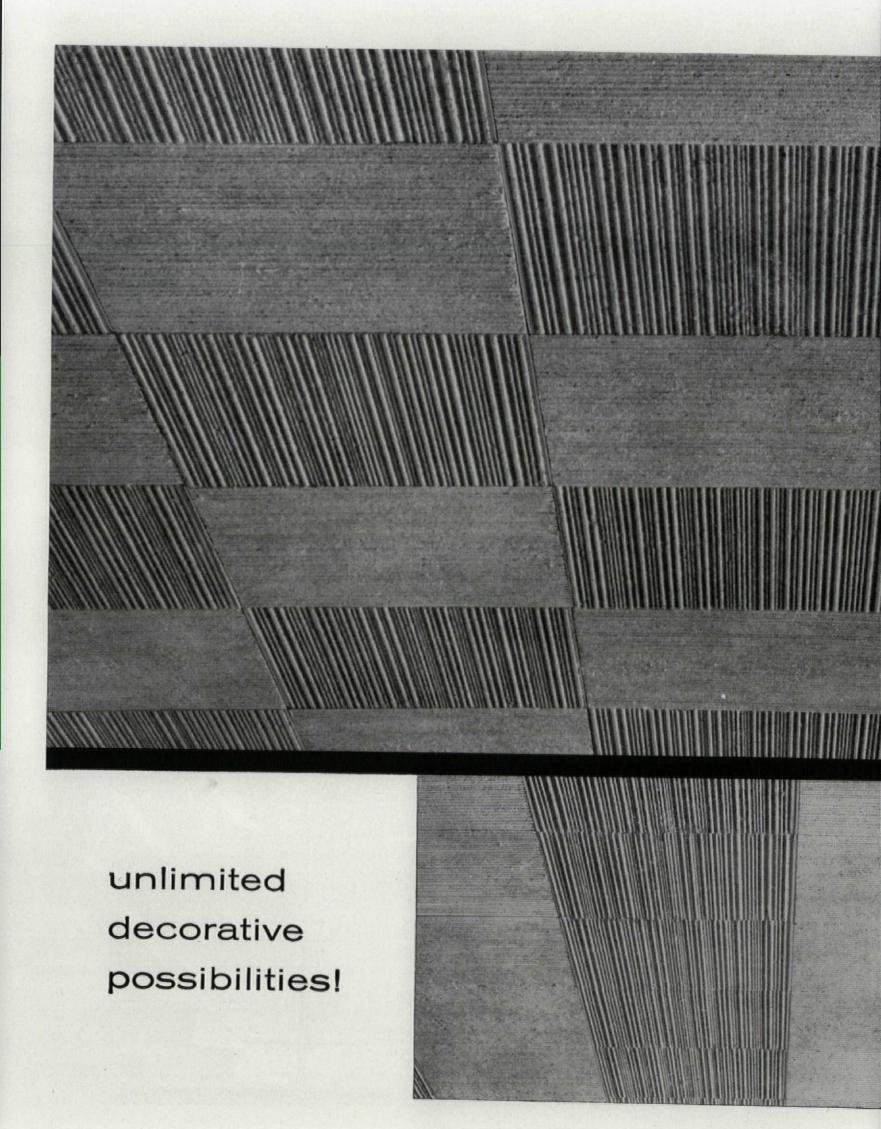
MANUFACTURERS OF LATHING AND PLASTERING MATERIALS

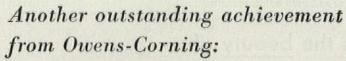


Hedrich-Blessing Photos

MILLER BREWING COMPANY ADMINISTRATION BUILDING, MILWAUKEE
Arthur L. and Arthur W. Siedenschwartz, Architectural Consultants
Brooks Stevens Associates, Designers • Alfred Schmitt, Inc., Plastering Contractor







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As an exciting addition to the complete line of Owens-Corning Sound Control Products, Fiberglas Stria* offers many unusual and practical advantages. Its decorative possibilities are unlimited. On the practical side, Stria sets a high standard for quality: dimensional stability, fire safety, low cost and exceptionally high acoustical value. Samples are available now. And a new brochure, complete with design details, will be sent upon request. Contact your nearest Fiberglas Branch Office, or write: Owens-Corning Fiberglas Corporation, Sound Control Products Division, Toledo 1, Ohio.



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BERGLAS

"...has given our sales a boost,"

says C. Harry Swanson, builder and contractor in South Bend, Indiana.

...that's the beauty of

Higgins Block*



Note how builder-contractor Swanson uses Higgins Block and Higgins Gnarled Oak Paneling in this luxurious recreation room. Higgins Block was used as facing for the bar—durable, scuff-resistant.

* SPECIFICATIONS:

9" x 9" net face hardwood blocks — easy to install

3-ply cross-grain construction—when properly installed will not warp, buckle, cup or crack

Selected oak face—comes with final finish

Pressure bonded with marine-type glue—water-repellent, climate-proof

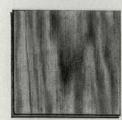
Deep-impregnated with famous "Penta"— rot-proof, termite-proof

Grooved back anchors into adhesive
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Can be laid without special preparation directly on concrete slab ideal for radiant heat

Blocks fit flush—without large, visible V-grooves

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VISIT BOOTH NO. 467

Hotel Sherman at the

NAHB CONVENTION

EVENTS

Mason Contractors Association of America, annual convention and exposition, Jan. 24-27, Sherman Hotel, Chicago.

American Society of Heating & Ventilating Engineers, annual meeting, Jan. 25-27, Rice Hotel, Houston.

Society of Plastics Engineers, annual technical conference, Jan. 27-29, Royal York Hotel, Toronto, Canada.

Prestressed Concrete Conference, Jan. 28-29, University of Toronto. For details address Prof. C. F. Morrison, Civil Engineering Dept.

Society of Architectural Historians, annual meeting, Jan. 28-31, Bellevue-Stratford Hotel, Philadelphia.

University of Houston lectures—Buckminster Fuller, Feb. 11; Alfred Roth, Apr. 1; Eero Saarinen, May 6.

American Association of School Administrators, annual convention, and architectural exhibit of school buildings, Feb. 13-18, Atlantic City, N.J. For details regarding entries address the AASA, 1201 16th St., N.W., Washington 6, D.C.

Associated General Contractors, annual convention, Mar. 1-4, Statler Hotel, Los Angeles.

Boston Museum of Contemporary Art, an architecture and design exhibition of the works of Gio Ponti and Gyorgy Kepes, Mar. 4-Apr. 4 in Boston; will be available also for general circulation.

The Peale Museum, Baltimore, "Blueprint for Tomorrow" exhibition of accepted designs for buildings soon to be erected in Baltimore metropolitan area, including Annapolis and area east of Silver Spring, Md., Mar. 1-May 2. For details regarding preliminary submissions address Peale Museum, 225 N. Holliday St., Baltimore 2.

Air Pollution Control Association, annual meeting, May 3-5, Chattanooga, Tenn.

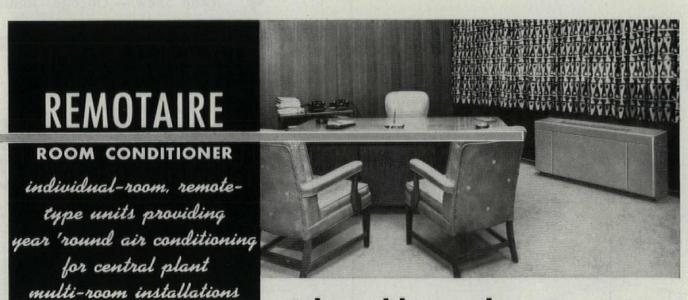
National Savings and Loan League, annual convention, May 9-14, Jung Hotel, New Orleans.

American Planning and Civic Association, conference, May 18-21, Columbus, Ohio.

New Jersey Chapter, American Institute of Architects, convention, June 10-12, Berkeley-Carteret Hotel, Asbury Park, N.J.

American Institute of Architects, 86th annual convention, June 15-19, Statler Hotel, Boston.

Rotch Traveling Scholarship: Exercises preliminary to selection of 65th winner of Rotch Scholarship will be held in April; applicants must be American citizens under 32 years of age on May 1, '54. For further details address William Emerson, secretary, Rotch Traveling Scholarship Committee, 107 Massachusetts Ave., Boston 15.



Adaptable to the one system that's most efficient, most economical for the job

WALL APERTURE SYSTEM • INTERIOR VENTILATION SYSTEM • WELL WATER SYSTEM

SPLIT-COIL SYSTEM • MOTEL SYSTEM • RESIDENTIAL SYSTEM • MODERNIZATION SYSTEM

SOME TYPICAL PIPING ARRANGEMENTS FOR REMOTAIRE SYSTEMS: Expensed Typic Bell Total Control Fig. Water Plant Water Plant Fig. Water Pl

For further information on the Remotaire see Sweet's Architectural File.

● The Remotaire room conditioner heats in winter, cools in summer . . . filters and circulates the air all year 'round. Using chilled water from a central water chiller for summer cooling and hot water from a central heating plant for winter comfort, the Remotaire system provides clean, draft-free, healthful comfort-conditioning for multi-room installations such as hotels, motels, schools, hospitals, office buildings and residences.

A Remotaire system is versatile. It can be adapted to the system of air conditioning that is best suited to each building... new construction or modernization. Ventilation can be provided in a variety of ways... several methods of piping arrangements are possible. Since units can be installed free standing or recessed partially or completely, they afford wide flexibility in architectural planning.

in architectural planning.

As part of a Remotaire system, individual unit control permits each room occupant to choose the temperature that suits him best without affecting adjoining rooms. And when the unit is not in use it can be completely turned off, thereby reducing operating costs.

For details on the various Remotaire systems, or for suggestions on which system to use in your building, contact your nearest American-Standard sales office or send for descriptive literature.

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AMERICAN-STANDARD . AMERICAN BLOWER . CHURCH SEATS & WALL TILE . DETROIT CONTROLS . KEWANEE BOILERS . ROSS EXCHANGERS . SUNBEAM AIR CONDITIONERS





BOOTH 371 — Sherman Hotel NAHB Show — Chicago, January 17-21

The New Grand Rapids

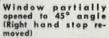
VEN-TROL-GEAR VENT PANEL ACTUATOR

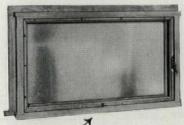
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Especially designed to provide the most practical, efficient operating mechanism for use on ventilating panels of the modern multi-panel windows in all types of residential, monumental and commercial buildings. It swings ventilating panels outward and downward to any degree of opening to assure full view as well as the most efficient ventilation regardless of weather. Special and detailed engineering service available to Unit Window Manufacturers.

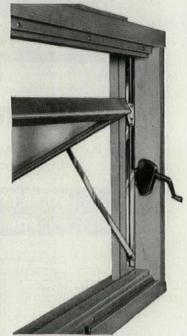








Locking Window fully closed mechanism (All stops in place)



Special Features

Ventilating Panels Open Outward to a full 90° and Drop for Full View and Most Efficient Ventilation Fingertip Gear-operated Control Operating Mechanism Fully Concealed Nylon Rollers Assure Smooth, Noiseless Operation Handle Grip Location Adjustable Down 30° from horizontal position Hinging Mechanism Completely Invisible Positive Locking Mechanism Fully Concealed Except For Operating Lever Designed For Use on Wood and Metal Windows as follows: Sash opening height 16" through 25". Any sash width up to 48" and maximum carrying capacity 40 lbs. per sash. Can be Used with Any Type of Glazing Including Double Glazing up to 1" The Mechanism is an Integral Part of Window and therefore Eliminates all Problems Pertaining to Wall Thickness and Trim Provides for Easy Washing of both sides of Panes from Inside Quick and Easy Installation Exposed Controls Finished in Statuary Bronze or Special Finishes on request.

INVISIBLE SPIRAL TYPE, OVERHEAD TYPE, CABLE AND SUPERIOR DUAL FLAT TYPE SASH BALANCES. PULLEYS AND CABINET HARDWARE.

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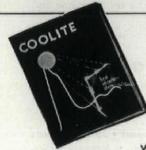
Striking Exterior



Architect,	Douglas W. Orr, New Haven, Conn.
General Contractor,	Dwight Bldg. Co., New Haven, Conn.
Glass and Glazing,	Pittsburgh Plate Glass Co., New Haven, Conn.
Photograph,	Patry Carr Studio, New Haven, Conn.

There is no Substitute for GLASS!

It is non-combustible . . . won't burn. It is rigid . . . doesn't sag or warp. It has a permanently hard, impervious surface, not affected by time, abrasion or exposure to the elements. It won't corrode or stain. It resists chemicals. It is easily installed, maintained and cleaned by conventional methods.



Send today for free literature, "Coolite Heat Absorbing and Glare Reducing Glass." The sleek, modern lines of the new Grace-New Haven Community Hospital, Memorial Unit, New Haven, Connecticut are partially achieved by Mississippi's ¼ " Coolite, Heat Absorbing and Glare Reducing Glass. Installed in spandrels, the effect created is that of a continuous, unbroken band of sparkling, blue-green glass across each floor. This is functional beauty at its finest . . . for, in addition to its appropriate usage in this installation, Coolite contributes a truly dramatic and different exterior.

When glazed into conventional sidewall sash and in skylights, Coolite glass floods interiors with soft, pleasantly tinted daylight. All the harsh glare and other unwanted elements of "Raw" sunlight are filtered to make seeing easier. Interiors are cooler, too, for Coolite absorbs 50% of the heat in the sun's rays.

And Coolite is practical . . . easy to clean . . . never wears out . . . never requires painting. Its maintenance is simple . . . its beauty everlasting. In designing new buildings and in remodeling projects, specify Coolite glass by Mississippi and make improved daylighting and greater comfort an integral part of your plans.

Translucent, light diffusing glass by Mississippi is available in a wide variety of patterns and surface finishes, "visioneered" to distribute light to best advantage.

MISSISSIPPE flass COMPANY

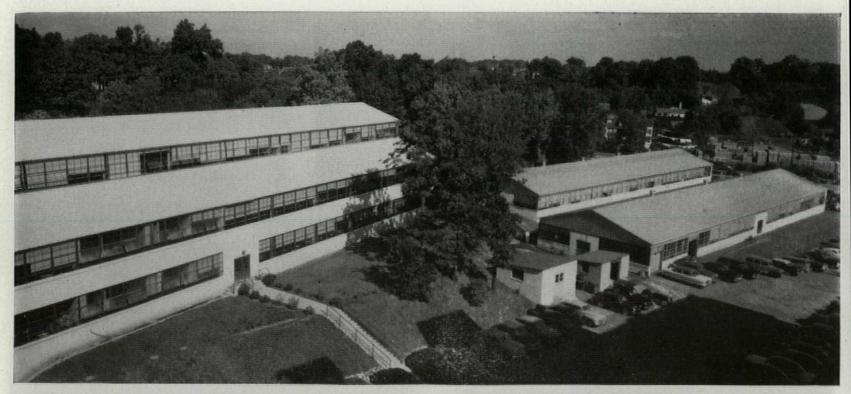
88 ANGELICA ST.

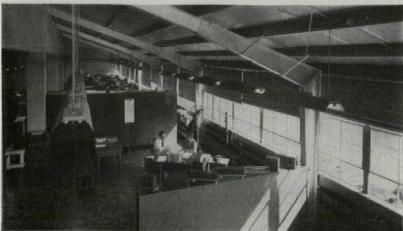
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ARCHITECTURAL FILE or write for copy

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Comfort—Butler aluminum sheeting and fiber-glass insulation help assure year around comfort. Banks of windows in sidewalls flood offices with natural light.



Convenience—Shop equipment is positioned for convenience, efficiency in Butler clear-span interior. Steel-aluminum construction furnishes good fire protection.

Architectural planning with BUTLER buildings

helps provide peak efficiency at Remington Rand

Architectural planning teamed with these three Butler buildings play a vital role in Remington Rand's expanding research program at Norwalk, Conn.

"Speed was important when we signed the contract for the first of our two $50' \times 200'$ buildings in 1948," says S. E. Szemetko, plant engineer. "And having it ready for use in 10 weeks proved the value of Butler's fast delivery and quick erection!

"We also saw the ease and economy of using Butler buildings with other materials when our 4-story office building was built in 1952. By combining Butler pre-engineered steel buildings with masonry construction, we obtained the needed space—even though our site area was limited. A 40' x 300' Butler building on the fourth

floor and two 20' x 300' Butler sections at each side on the third floor give us 24,000 sq. ft. of well-lighted, easy-to-heat office space.

"The architectural adaptability of Butler buildings helped us obtain three attractive buildings which provide the functional space we need for peak efficiency. We can arrange our equipment and offices in the clear interiors to fit our convenience... use movable partitions which furnish flexibility to match changing needs. In short, we are convinced the decision to build with Butler was sound!"

A.I.A. file 14i will tell you more about the advantages of teaming Butler buildings with creative architecture. Get a copy from your local Butler dealer right away. Write for his name and more facts by mail.



For prompt reply, address office nearest you:

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Only Duo-Guard provides

> 1. FOR BRANCH CIRCUITS

2. FOR LAMP and APPLIANCE CORDS

Duo-Guard Pushmatic circuit breakers give you double protection because they have separate thermal and magnetic elements. The Duo-Guard principle assures you that lamp and appliance cords, as well as branch circuits, are guarded from thermal and electrical faults.

No other breaker-at any price-has both:

Thermal Element (bimetal strip) protects branch circuit wiring and insulation, from Electri-Center panelboard to receptacle or outlet, from any kind of thermal overloads . . . and prevents nuisance tripping.

Magnetic Element (multiple-turn solenoid) provides instantaneous protection for lamp and appliance cords, from receptacles or out-

lets to all properly connected electrical equipment. Also protects branch circuit wiring.

Now the standard BullDog breaker, Duo-Guard Pushmatic has all the famous BullDog exclusive features: simple-to-operate push-button control; day or night identification of "OFF" breaker; bolt-tight installation. No other breaker offers as much . . . yet many cost more,

Get the complete story on the world's most efficient circuit breaker. Write, today, for new, free Bulletin PM-365. BullDog Electric Products Company, Dept. AF-14, Detroit 32, Michigan.



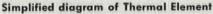
Why Duo-Guard
Pushmatics
Provide
Double Protection

BULLDOG

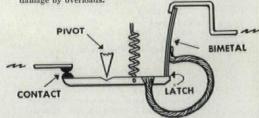
BullDog Breaker

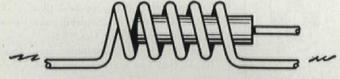
double protection





As bimetal is heated by excess electric current, it bends and releases latch. Spring snaps latch upward, breaking contact. Branch circuit wiring, including insulation, from Electri-Center to receptacle or outlet is protected from damage by overloads.





Simplified diagram of Magnetic Element

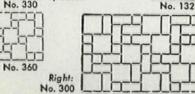
Wound wire coil (solenoid) is energized by current. When short occurs, coil instantly activates metal plunger which breaks contact, BOTH BRANCH CIRCUIT WIRING AND LAMP AND APPLIANCE CORDS ARE PROTECTED FROM ELECTRICAL OVERLOADS AND SHORTS.

ELECTRIC PRODUCTS COMPANY



fication. Available in sizes 1x1, 2x1, 2x2, ¼" thick in the following wide Golden Pheasant, Ember Glow, Light Grey, Dark Grey, Brown, Red, Light No. 130 Green, Dark Green, Spartan Blue, Ivory and Black. The following Mosette col-No. 180 ors are supplied in sizes 2x1 and 1x1 only: Pearl Grey, Cream, Pink, Canary and Dresden Blue.

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LETTERS

WRIGHT AND NERVI

Forum:

I commend you for your continued publication of the works of outstanding architects. Your reporting on Frank Lloyd Wright and Pier Nervi in the same issue (AF, Nov. '53) is of great interest.

> STANLEY M. SHERMAN, architect Brooklyn, N.Y.

Forum:

Congratulations for your report on the work of Pier Luigi Nervi.

> ALVARO G. CUBIDES, architect Ewin Engineering Corp. Mobile, Ala.

SELF-SELECTION

Forum:

May we have an extra copy of the article on self-selection in your November issue?

We are giving considerable attention to this subject and feel that your article contains many accurate statements and wellchosen illustrations.

> E. R. KINGSBURY, planning director L. S. Ayres & Co. Indianapolis, Ind.

ARCHITECT PUBLIC RELATIONS

Forum .

I have read with great interest your article on "The Need for Planning" and compliment you highly on this excellent article in your November issue.

This is one of the best public relations instruments for the architect that I have had the pleasure of reading.

> MAURICE J. METZ, architect Coates & Metz Fresno, Calif.

PRODUCTION-LINE ARCHITECTURE

Forum:

No. 320

Cheers to Penn Center's citizen advisers for criticizing the proposed plan of Emery Roth & Sons' uninspired, mass-produced "architecture" (AF, Oct. '53).

Let's keep Philadelphia free from the blight that has scarred New York City's skyline.

> JEAN COBLENTZ, designer San Francisco, Calif.

DESIGN STANDARDS

Forum:

I am sure that your new department "Design Standards and Data" fulfills a useful purpose, but I would like to see printed on every page the words, "Use with Caution."

The thoughtless use of design standards can lead to a disintegration of the creative forces in architecture. The independent solution of technical and architectural problems leads to progress; the slavish use of standards would lead to stagnation.

A practical and workable solution might be actively to approach the solution of prob-

continued on p. 78



ALABAMA

Badham Insulation Co., Inc., Birmingham Stokes Interiors, Inc., Mobile

ARIZONA

Fiberglas Engineering & Supply Co., Phoenix Hall Insulation & Tile Co., Tucson

CALIFORNIA
Coast Insulating Products,
Los Angeles and San Diego
Cramer Acoustics, San Francisco and
Fresno

COLORADO
Construction Specialties Co., Denver

GEORGIA Dumas and Searl, Inc., Atlanta

ILLINOIS
General Acoustics Co., Chicago

INDIANA
The Baldus Co., Inc., Fort Wayne
E. F. Marburger & Son, Inc., Indianapolis

IOWA Kelley Asbestos Products Co., Sioux City KANSAS Kelley Asbestos Products Co., Wichita

KENTUCKY
Atlas Plaster & Supply Co., Louisville

MARYLAND Lloyd E. Mitchell, Inc., Baltimore

MICHIGAN Detroit Fiberglas Insulation Company, Detroit

MINNESOTA
Dale Tile Company, Minneapolis

MISSISSIPPI Stokes Interiors, Inc., Jackson

MISSOURI

Kelley Asbestos Products Co., Kansas City Hamilton Company, Inc., St. Louis

NEBRASKA Kelley Asbestos Products Co., Omaha

NEW JERSEY Kane Acoustical Co., Fairview

NEW MEXICO Fiberglas Engineering & Supply Co., Albuquerque

NEW YORK
Robert J. Harder, Inc., Lynbrook, L. I.
James A. Phillips, Inc., New York
Davis-Fetch & Co., Inc., Buffalo,
Rochester and Jamestown
Davis Acoustical Corp., Albany

NORTH CAROLINA Bost Building Equipment Co., Charlotte

OHIO
The Mid-West Acoustical & Supply Co.,
Cleveland, Akron, Columbus, Dayton,
Springfield and Toledo

OKLAHOMA
Harold C. Parker & Co., Inc.,
Oklahoma City
Kelley Asbestos Products Co., Tulsa

OREGON
Acoustics Northwest, Inc., Portland
R. L. Elfstrom Co., Salem

PENNSYLVANIA
General Interiors Corporation, Pittsburgh
Jones Sound Conditioning, Inc., Ardmore

TEXAS
Blue Diamond Company, Dallas
Fiberglas Engineering & Supply Co.,
El Paso Otis Massey Co., Ltd., Houston Builder's Service Co., Fort Worth

UTAH Utah Pioneer Corporation, Salt Lake City

VIRGINIA Manson-Smith Co., Inc., Richmond

WASHINGTON Elliott Bay Lumber Co., Seattle

WISCONSIN Building Service, Inc., Milwaukee

CANADA
Albion Lumber & Millwork Co., Ltd.,
Vancouver, B. C.
Hancock Lumber Limited,
Edmonton, Alberta



artnersh

these acoustical specialists and Simpson quality materials ...

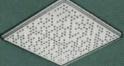
The acoustical contractors listed at the left were selected by this pioneer forest products organization as worthy partners in the highly technical business of sound control, Already experienced, their engineers and their craftsmen are kept abreast of new developments in materials and methods through a continuing exchange of information among themselves, and through periodic meetings with Simpson's acoustical experts. Superior materials, plus superior installation, add up to superior sound control. For consultation and estimates, call the Simpson Certified Acoustical Contractor nearest you.

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ACQUISTICAL MATERIALS * INSULATING BOARD PRODUCTS *
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REDWOOD * FIR AND WEST COAST HEMLOCK LUMBER

HOLLOKORE-DRILLED

Simpson's perforated woodfiber acoustical tile is Hollokore-drilled for cleaner perforations. Its bright-white finish is washable, bevels are painted, acoustical efficiency is high, and it is Biotox protected.



SCATTER-DRILLED

Same material, same finish, same clean perforations . . . but scatter-drilled to create an interesting pattern.

FISSURED MINERAL TILE

The natural fissuring varies from tile to tile, creating a beautiful ceiling texture. This incombustible tile is available either beveled or square-edge.

> METAL ACOUSTICAL UNITS

An incombustible, suspended ceiling treatment which provides easy access to electrical, plumbing and other utility installations.

and Simpson Acoustical Contractors

WHITE is so much more effective!

Trinity white—the whitest white cement—is a true portland. The gleaming sparkling whiteness as mass or contrast increases the stature of good design. Use it for architectural concrete units; stucco; terrazzo; and wherever high light-reflection is indicated. Trinity white meets all Federal and ASTM specifications.

This greyness of grey portland cement is absent in Trinity White. That's why Trinity White is best where concrete is to be tinted. There is no und dieses to your colors. muddiness to your colors. You get cleaner, truer

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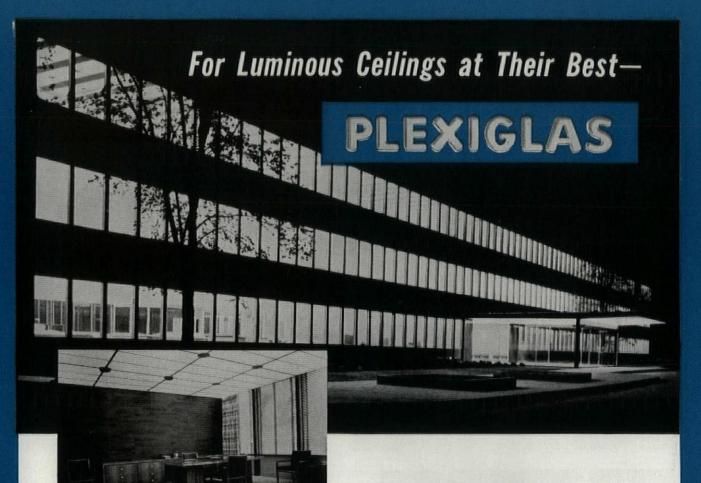
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Los Angeles



Luminous ceilings with diffusing panels of PLEXIGLAS® provide highest quality lighting and clean, fixture-free appearance in offices, lobbies and corridors of this Engineering Staff building of a major motor car manufacturer. In addition, they conceal air ducts, and water pipes for sprinkler heads located inconspicuously below the diffusers.

Luminous ceilings are at their best in function and appearance when the all-important diffusers are PLEXIGLAS, because this Rohm & Haas Company acrylic plastic:

- . . . provides efficient, uniform diffusion of light.
- . . . resists discoloration and breakage.
- . . . is strong, light in weight, and dimensionally stable.
- ... can be formed at low cost to custom shapes.

We will be glad to send you literature on the use of PLEXIGLAS for luminous ceilings and large-area fixtures.

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FOR INDUSTRY

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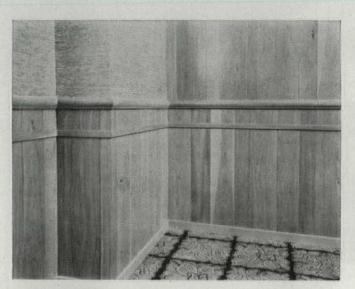
Representatives in principal foreign countries

Canadian Distributor: Crystal Glass & Plastics, Ltd., 130 Queen's Quay at Jarvis Street, Toronto, Ontario, Canada.

PLEXICLAS is listed in Sweet's Architectural File, Section 6d/Ro.

Architects: Saarinen-Saarinen & Associates.

There's interior paneling for every purse and purpose in the complete line of . . . Roddiscraft DECORATIVE PANELING







In every project you design — home, office or hotel — Roddiscraft Decorative Paneling helps you create interiors that win attention and praise. This is because Roddiscraft offers a *complete* line of decorative plywood ... a type for every need ... a type in every price bracket.

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with automatic Autotronic elevatoring

A busy office building, the Carnegie Endowment International Center, has been successfully using automatic elevators without operators for more than six months.

The immediate acceptance of passenger operated elevators by New York tenants and visitors alike is attributed to the simplicity of operation, the excellent service, and the ease of communication with the starter by car telephone.

Naturally, management is also thoroughly satisfied.

CARNEGIE ENDOWMENT INTERNATIONAL CENTER

Facing the broad expanse of United Nations Plaza at 46th Street, this new 12-story building houses 38 national and international non-profit organizations devoted to the improvement of human welfare.

The building's 800 occupants, some 500 daily visitors, and a unique arrangement of conference and meeting rooms on the 2nd floor create a highly diversified traffic pattern throughout the day. Traffic is kept moving smoothly by 4 automatically operated AUTOTRONIC elevators.

OTIS AUTOTRONIC Elevatoring secures the maximum quantity and quality of performance from a group of elevators. All operations can be automatically and electronically controlled—including automatic recognition and instant readjustment for any traffic pattern variation.

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The LONGER LIFE of WROUGHT IRON PIPE



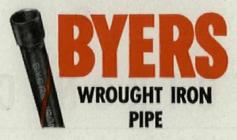
it costs less to do it right-



When you specify pipe, it's wise to remember that when you install it, you pay only the pipe fitter, but every time you repair it, you pay pipe fitter, carpenter, mason, plasterer, and painter.

This dollars-and-cents difference, which rightly places the guide for pipe selection on SERVICE LIFE, not initial cost, is responsible for the wide acceptance of wrought iron pipe for corrosive services. If you are interested in piping economy, write for details on wrought iron pipe for your particular installation.

A. M. BYERS COMPANY Clark Building, Pittsburgh 22, Pa.



LETTERS continued

lems by oneself and afterward to check the solutions found by others as expressed in your new department.

VICTOR GRUEN, architect New York, N.Y.

RATS IN THE CONCRETE

Forum:

Having proved, to my dissatisfaction, that I am not David enough to bring even a blush of shame to the gigantic cheek of industrial claims, I invoke your mighty resources as a forum and as word masters to establish the exact meaning of the term "verminproof" as currently applied to building insulation.

Let us accept Webster's word, shall we, that rats and mice are vermin, rather than that of one research institute which relied on my impressibility to the extent of telling me that rats and mice are rodents and not vermin!

In transforming a concrete farm building into a house—living in it during the process—I have witnessed the following, and so take my oath:

- 1. Runways, gnawed and used by rats, through vermiculite insulating concrete.
- 2. Runways, gnawed and used by mice, through vermiculite insulating concrete, hollows gnawed in vermiculite insulating concrete and used by the mice for nesting—under the brick floor laid on said concrete.
- 3. A rat, being chased by a dog, tearing into a closed bag of loose vermiculite concrete aggregate, passing through it and tearing through the other end of the bag. (The dog got him!)
- Holes gnawed and used by mice through a nationally known insulating wallboard.
- 5. Mice rustling and rattling about in installed aluminum-foil insulation and, I'm afraid, tearing it.
- Mice gnawing through' the aluminumfoil cover of a jam jar and getting at the contents (preserves).

A business associate in my office tells me that mice play in his mineral-wool ceiling insulation—but this, of course, is hearsay evi-

As you see, I am not verminproofed by three different kinds of insulation and I sometimes wonder how long or how much I shall be insulated by the time I finally get rid of the pests. The dogs cleared the place of rats long ago. To be constructive, I will suggest that insulation manufacturers offer a good mousing cat, free, with every thousand square feet of their material. Better still—let them stop using that absurd and deceiving term "verminproof."

BERNARD HEATHERLEY, architect Penfield, N.Y.

EXIT

Forum

Inadequacy of egresses from the typical floors of the office buildings published in your continued on p. 84









PERMANENT
PROTECTION
for
SOUND SYSTEM
SPEAKERS!

LOWELL BACK COVER PROTECTIVE SPEAKER ENCLOSURES

Lowell CP Series speaker enclosures are designed for easy wall or ceiling installation of sound systems in new construction. Spot welded 22-gauge steel construction protects speaker from dust, mortar, rodents. They reduce speaker installation time and permit service without damage to wall or ceiling. Enclosure exterior has rust preventive coating, interior lined with very heavy undercoating to prevent metallic resonance. Adequate speaker back pressure relief is provided. 3/4" knock-outs at 90° in can, four 8-32 spot weld nuts and eight 3/16" nail or wire holes provided in plaster ring and flange. CP Series enclosures available for 7" to 12" speakers and will adapt to any standard wall, ceiling or suspended ceiling construction.

Other Lowell products: XCP Protective Speaker Enclosures for existing construction, 24" and 48" Steel Support Channels for use in suspended ceiling installations, complete speaker baffle line.

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attractive brick and tile floors and walls.

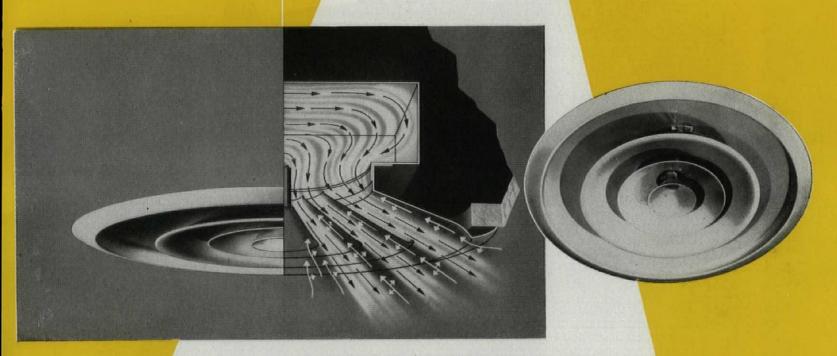
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key to comfort in air conditioning



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promptly accepted by the air conditioning
industry. • Through research and
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the years in tens of thousands of installations, we have consistently improved the
quality and performance of Anemostat
products. • Value, quality and performance
of Anemostat Air Diffusers are still
unequalled—there are no "substitutes"
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To the Architects of America



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WESTINGHOUSE NOW ANNOUNCES ITS COMPLETELY NEW AND MODERN 1954 LINE

CHECK THESE FEATURES:

- DUAL ELECTRIC CONTROL—FINGER-TIP PLUS TOE-TIP . . . only Westinghouse provides
 the convenience of dual electric control at no extra cost...with electrically operated solenoid water
 valve that ends valve stem packing leaks and reduces wear and maintenance.
- EXCLUSIVE SUPER SUB-COOLER AND PATENTED PRE-COOLER... substantially
 increases cooling capacity and lowers operating cost by utilizing cold waste water to pre-cool both
 the incoming drinking water and the refrigerant.
- AUTOMATIC STREAM-HEIGHT CONTROL . . . automatic stream-height control is built into
 the bubbler assembly. Provides proper drinking stream; prevents squirt or dribble, regardless of
 normal variations in water pressure.
- COMPACT, MODERN STYLING . . . baked enamel in attractive silver-grey hammertone finish. New escutcheon, stainless steel top. Occupies only 14" x 14" of floor space.
- 5-YEAR GUARANTEE PLAN . . . on the entire Hermetically-Sealed Refrigeration System.

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WSE8B Static Air Cooled 8-Gallon, Explosion-Proof



WWE14B 14-Gallon, Water Cooled Explosion-Proof



WAC2 Compartment Pressure Cooler



WAP7A 7-Gallon, Remote Cooler



WWP13 13-Gallon, Remote Cooler



WBC1 Compartment Bottle Cooler





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- New slot-finding groove meshes blades with slots.
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- Completely enclosed in black molded material, or in ivorene if desired.

TRADE-MARK

DUPLEX RECEPTACLES

The many rugged, dependable Hubbell wiring devices specified for this handsome Alcoa Building in Pittsburgh, Pa., are a perfect complement to its modern design and sturdy construction. The Twist-Lock Duplex Receptacle shown here is but one of many Hubbell devices specified and installed in this outstanding building. It is an example of the value received* when you insist on highest grade, heavy duty materials.

Highest Grade
HEAVY DUTY

Pirst and still the Finest and still the Finest

HARVEY HUBBELL, INC.

BRIDGEPORT, CONNECTICUT

LETTERS continued

September issue astonishes me. I doubt that any of them would be passed by the Building Dept. in Boston, and for a very good reason.

I am chiefly concerned about the cardinal point that every floor should have two remote exits. In the four buildings published, in no case are the elevators contained in enclosed lobbies, so I rule them out as legal egress. Each building does have two stairways, but look at them! In the Dallas plan more than 50% of the rentable area is at one end of the building beyond the two stairs. In the Houston plan I think a fire escape is a poor excuse for a second egress (not legal in Boston's snowy climate), and there is no access to it other than through some tenant's office (and who can guarantee that the door will not be blocked just the day it is needed?). In the Denver plan there are two stairs only 30' apart in a common corridor, which should count as one egress as far as remoteness is concerned. In the New York bank there are two stairs flanking the elevators along a party wall in one extreme corner of the building, and they both exit into the main elevator lobby on the first floor, which should give them the value of one egress; a perfect opportunity to locate a second exit along a party wall near the diagonally opposite corner of the building is completely overlooked.

If the premise "It can't happen here" doesn't work better than it did at the General Motors Livonia plant, some one of these days a smoky fire may cut off a lot of people from these concentrated exits and cause losses of life by suffocation.

The top-flight architects of these important buildings have not used the very best judgment between a safe plan and a plan that is "appealing" by having all service areas packed into one neatly confined clean-cut area. I even wonder why the city plan inspectors approved these layouts. I also wonder why you have made no editorial comment on this vulnerable point.

SHERMAN MORSS, architect Beverly Farms, Mass.

SCHOOLS

Forum:

Congratulations on your marvelous coverage of schools.

We wish to order six additional copies of the October school issue for distribution to local school boards.

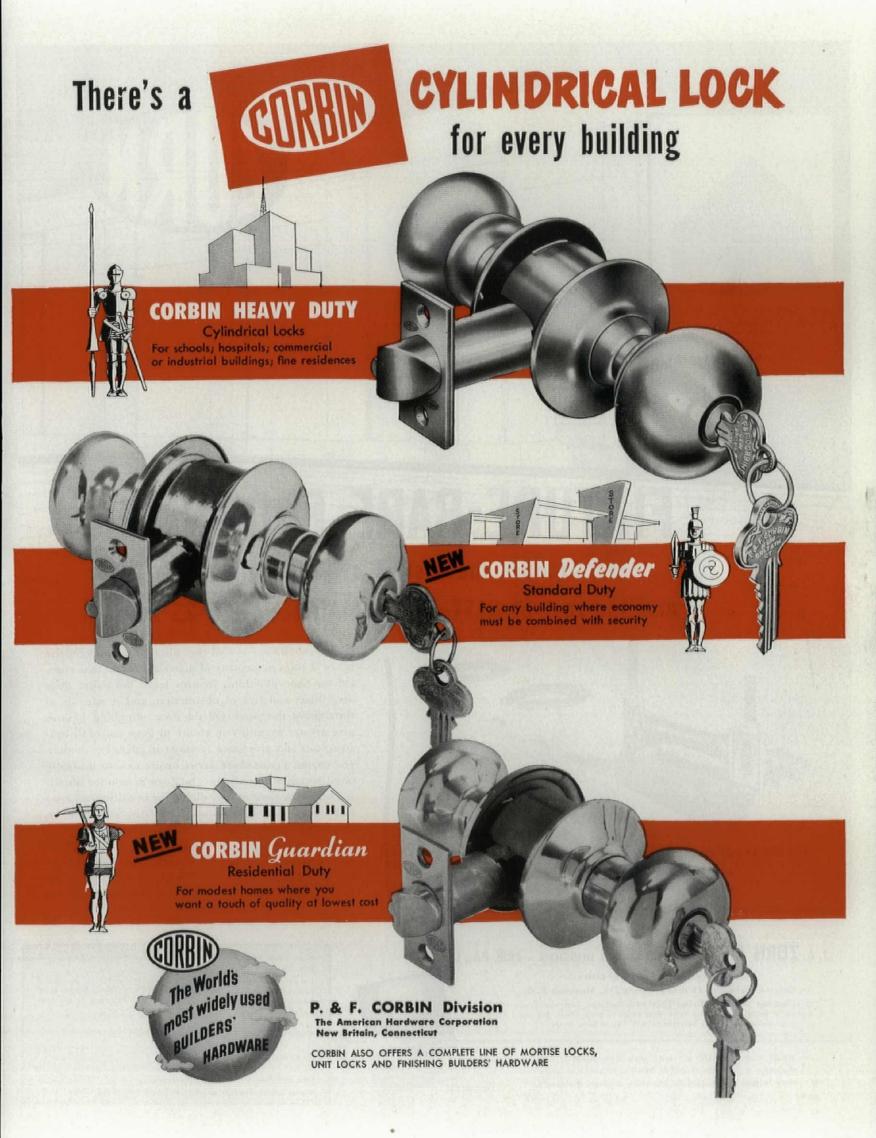
We are also pleased that you are beginning the series of "Design Standards and Data" and are looking forward to future editions,

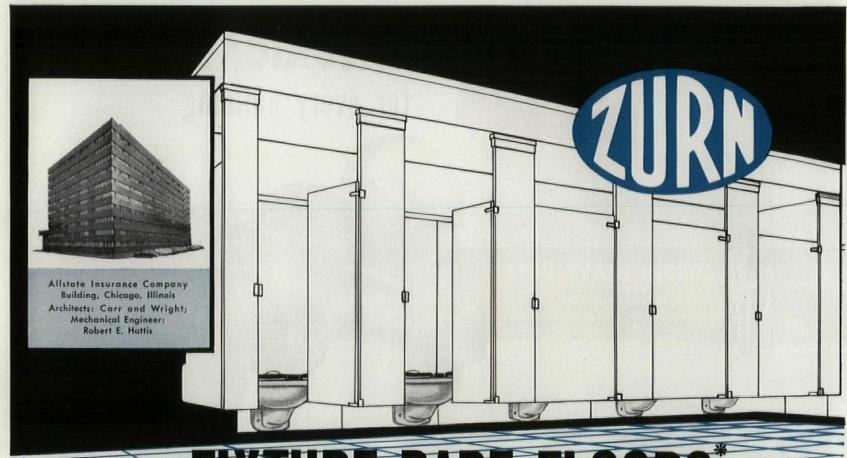
> Jack R. Bradley Kiene & Bradley, architects Topeka, Kan.

Forum:

We would like to have 75 tear sheets of the Schoolhouse Economy Forum, published in the October FORUM.

continued on p. 90





REBARETEON

reduce the cost of over-all building

and the cost of REST ROOM MAINTENANCE 25 to 30%



 The installation of wall-type plumbing fixtures effects major savings in quantity of materials and in time costs. Off-the-floor plumbing fixtures leave the entire floor area intact and free of obstruction, and it remains so throughout the years. Off-the-floor plumbing fixtures give greater flexibility in choice of floor and wall constructions and give more freedom in planning modern rest rooms. Fixture-bare floors insure against untimely obsolescence of rest rooms. The Zurn System for installing wall-type fixtures is available for installing any type and make of wall-type fixture. The Zurn System can be assembled into an almost limitless variety of installations. With the Zurn System horizontal drainage lines, up to where they connect to the stack, are installed above the floor, behind the toilets, behind the wall. Write for free booklet, "You Can Build It and Maintain It for Less A NEW WAY."

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Sales Offices in All Principal Cities

In Canada: Canadian Zurn Engineering Ltd., Montreal, P. Q.

Over 600,000 wall-type fixtures have been installed with the Zurn System in buildings of every type from coast to coast. Write for list of buildings having rest rooms with fixture-bare floors.

WRITE FOR BOOKLET entitled, "You Can Build It and Maintain It for Less A NEW WAY". It contains up-todate factual information for planning modern rest rooms.



J. A. ZURN MFG. CO. • Plumbing Division Erie, Pa., U. S. A.

I want to know more about the influence wall-type plumbing fixtures can have on the over-all cost of a building. Please send booklet entitled, "You Can Build It and Maintain It for Less A NEW WAY".

Name and Title

Please attach coupon to your business letterhead. Dept. A. F.



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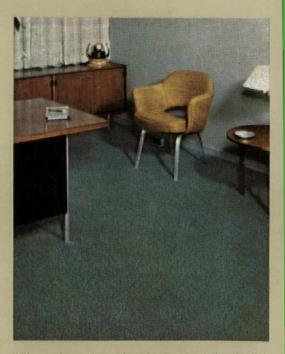
MOHAWK is the only carpet mill that produces all four major weaves as well as exclusive new patented Moh-weave; the latest in tufted and needlewoven carpeting; and a complete line of carpet cushions. This being the case, it is obvious that only Mohawk can give you completely impartial counsel on your carpeting problems.

In addition to this, Mohawk is equipped to handle every phase of manufacture—from spinning and dyeing of raw materials to the final testing of finished carpets and cushions. Therefore, Mohawk can naturally give you the greatest quality-per-dollar value.

Third, Mohawk has the largest, most complete line of patterns, grades and colors. And, if you don't find exactly what you want in this huge selection, Mohawk will custom design and custom



"You Can Be Sure... If It's Westinghouse!" It took the great versatility of Mohawk to engineer the most durable weave, in the most economical widths, and in the right colors for Pittsburgh's beautiful new Westinghouse offices. Still another example of how you can also be sure . . . if it's a Mohawk Engineered Installation.



"Showplace for Alcoa's Products"—that is Aluminum Company of America's new building in Pittsburgh, where only Mohawk could fill all the requirements. The right colors to accent aluminum fixtures and furnishings and the right weaves to solve problems of acoustics and maintenance were engineered by Mohawk.

ENGINEERED CARPET INSTALLATIONS!

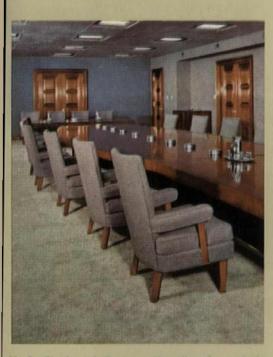
o all commercial carpeting needs!

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Mohawk's famous Engineered Carpet Installations begin with a thorough analysis of all the facts—of all your individual requirements as to design, color, size, shape, utility and budget.

Our specialists—who will work with your decorator or as your decorator—will study your particular problems in minute detail. They will then engineer for you the most practical carpet installation possible.

For the name of your nearest franchised Mohawk contract carpet dealer, get in touch with your local Mohawk distributor, or write Contract Sales Dept., Mohawk Carpet Mills, Inc., 295 Fifth Avenue, New York 16, N. Y. There is no obligation, of course.



U. S. Steel and Custom Chenille. One of the many Mohawk Engineered Installations at U. S. Steel, in Pittsburgh, is in the Board Room, where Mohawk Custom Chenille covers the full 27-foot width without a seam! Once again only Mohawk had all the answers to all the carpet and carpet-cushion requirements!



Made to Order for Mellon Bank. From yarn and color to final installation, the carpets which enhance the Mellon National Bank offices in Pittsburgh are unmistakably a Mohawk *Engineered* Installation. Custom woven in three colors, they give the effect of a solid color and are as practical as they are beautiful.



Mohawk

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295 Fifth Avenue, New York 16, N.Y.

Brighton City Hall, Brighton, Colorado

Architect: James M. Hunter, A. I. A., Boulder, Colorado

wascolite skydomes ... Highlight design

In the daytime . . . diffused toplighting. At night, indirect lighting . . . thrown upward from lighting fixtures and reflected from circular white translucent Skydomes. This is the unusual way in which Architect James M. Hunter has used Wascolite Skydomes in the Brighton City Hall, Colorado.

"We have been using Wascolite Skydomes for the past few years to get penetration of light in a building . . . both from the point-of-view of efficient lighting for close work and also to get backlighting . . . in the interest of obtaining a dramatic effect for aesthetic value."

Mr. Hunter has also used Skydomes as a design factor in halls and foyers . . . to filter sunlight through foliage of a planter box in his own home . . . for efficient desk-level illumination in a bank and school . . . wherever toplighting can highlight creative architectural design.



wascolite er skydomes

See Sweet's Catalog, or write ... WASCO FLASHING COMPANY

89 Fawcett Street, Cambridge 38, Mass.

for easy-to-install sliding doors that really work

Next time you attend a "public showing" of one of your new buildings, watch for this. The average person can't resist the temptation to try a sliding door. If it works freely, easily, he's impressed no end. Here's quality, here's workmanship. Now he's sure the building is a credit to the community. What he doesn't

know is that you planned it that way. Eight wheels per door instead of two. Center mounted instead of side mounted hangers. And most likely, a pocket frame of steel that can't warp; will never bind the door. A Kennaframe, no less, with heavy duty, ball bearing 400-A hangers and extruded aluminum track.

KENNAFRAME, the only prefabricated steel frame for pocket door installations. Adjustable three ways. Steel split jambs guarantee against warpage. Not two, not four, but eight wheels per door!







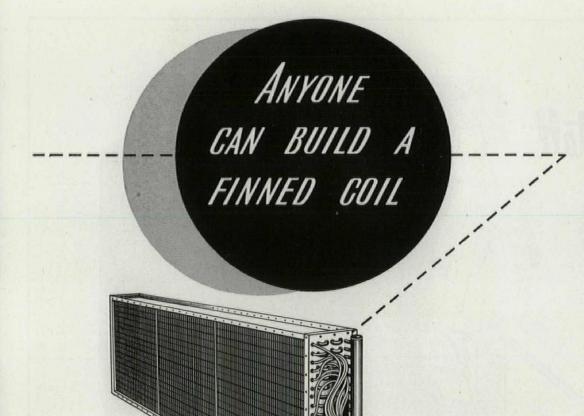
FREE BUYER'S GUIDE

Now you can be sure the track used is right for the job. Kennatrack BUYER'S GUIDE classifies a complete line of special purpose hardware, together with scaled drawings for optional installations. May we send you a copy?

See you at the Builders' Show!
CHICAGO'S CONRAD HILTON HOTEL, BOOTH 104







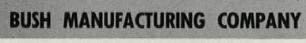
But BUSH finned coils aren't just BUILT, they're ENGINEERED . . . constructed to rigid specifications . . . accurately rated . . . by HEAT TRANSFER ENGINEERS.

Consider these advantages of BUSH finned coils:

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- Tight fin-to-tube bond insured by expanding tube mechanically during construction.
- All direct expansion coils are rated with allowance made for pressure drop on the refrigerant side.
 User pays no penalty in performance. BUSH coils deliver as rated.
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Your nearest Bush sales engineer will be glad to offer help or advice on coil selection.



WEST HARTFORD 10, CONNECTICUT



LETTERS continued

This article is such a splendid presentation of present-day schoolhouse problems that we would like to mail copies of the article to all interested school superintendents in our school districts.

We are sponsoring this service through the Arizona Chapter of the American Institute of Architects.

FREDERICK P. WEAVER JR.

Committee for Public Relations

Arizona Chapter, AIA

Phoenix, Ariz.

 Limited quantities of reprints of this article are available without cost.—En.

Forum:

A magnificent issue. . . .

All of us in the business of providing schools, be we architects, engineers, construction men, school officials or taxpaying parents apprehensive about the school housing program and what it can mean to the educational future of our own youngsters and the children of the nation, were aware of the problem because of personal experience, but the sharp focus into which Architectural Forum has put the entire issue is praiseworthy.

Your special issue states the critical situation and its tremendous human and financial magnitude, then offers some excellent solutions. Bewildered and harassed school boards, frantically seeking solutions to solve their ever mounting problem, could well use your October issue as their school building encyclopedia. We have conferred with some of these boards and know their need for research and wise guidance, not only on efficient planning and carefully watched building costs, but also on the problems of unified districts, land acquisition and the multitudinous decisions which lie outside of architecture.

The school issue offers a challenge to every person connected either directly or indirectly with the educational housing problem. As an architect, I see the challenge to our profession as one that makes it imperative for us to design schools with the greatest possible efficiency and at the very lowest cost per square foot and per pupil. Your issue, so complete and so filled with fine research and ideas, could be followed up at local levels, stimulate a community-by-community attack on this problem, which is going to be increasingly critical as the school population continues to

Congratulations on a splendid, thoughtprovoking issue.

WELTON BECKET
Welton Becket & Associates
Architects and engineers
Los Angeles, Calif.

Forum:

After looking at your school issue of Oct. '53, I took a look backward at Coolspring School in your issue of Sept. '39.

In the light of your 1953 study of the prob-

continued on p. 96

Now you can specify the

WINDOWS YOU HAVE ALWAYS WANTED



• Now you don't have to specify substitute windows any more! Now you can specify all the Ludman Auto-Lok awning windows you want and get them! Production is at an all-time high and increasing! Distribution facilities are greater than ever before! Specify them for your next project!

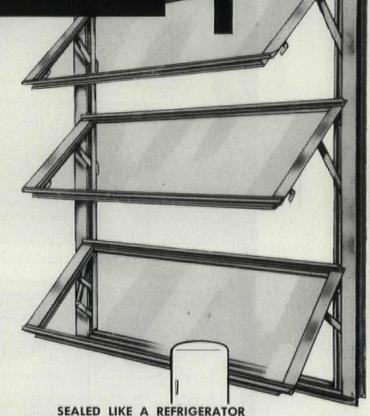
Ludman Auto-Lok Awning Windows are available for every type construction . . . residential, industrial, commercial . . . college, university, school . . . hospital, hotel, motel and special purpose buildings.

No other windows add so much to practical building utility. Because of Ludman's patented Auto-Lok principle of operation, they close 10 times tighter than generally accepted standards! This tight closure helps heating and air-conditioning equipment to operate at maximum savings and efficiency. At the same time, they offer a new high in ventilation control. They open 90°, give draft-free ventilation. They're air-tight, seal shut like a refrigerator.

No other window adds so much to building appearance. Ludman Auto-Lok awning windows compliment modern architectural lines. They give you more latitude and endless variety in creating new designs in fenestration.

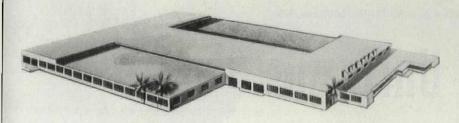
Wherever your job might be, you can be sure of prompt delivery.

They're sold by over 4800 dealers in the United States alone!



See SWEETS FILE. For helpful engineering and planning service, write:—

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Production is increasing steadily at our new plant — the world's largest plant manufacturing awning windows and jalousies.



JOMAN LEADS THE WORLD IN WINDOW ENGINEERING

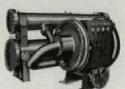
A full summer of Air

Trane UniTrane System in "world's biggest house"



Typical installation shows unit free-standing under window. In Woodner apartments, unlike this one, units are recessed, extending only 7" into room. Models are also available for concealed wall, ceiling or closet installation. In all cases, they provide true year-'round comfort. A simple small-pipe circuit supplies chilled water to each UniTrane coil for summer cooling and dehumidifying—hot water for winter heating. All air, not just ventilation air, is filtered in unit before passing over coil—an important Trane feature eliminating clogged coils and maintenance expense.

SPECIFY MATCHED TRANE EQUIPMENT FOR UNDIVIDED RESPONSIBILITY!



CenTraVac—New centrifugal water chilling system . . . sets new standards of operating efficiency. 45 to 400 tons



Cold Generator—Packaged water chiller. Completely wired, piped, refrigerant-charged at factory. 10 to 100 tons.



Reciprocating Compressors

Rugged, dependable, quiet, efficient.
Automatic multi-step cylinder unloading, 6 sizes up to 50 tons.



Climate Changers—Heat, cool, humidify, dehumidify, filter. Provide up to 6 zones with different combinations, 450 to 23,400 cfm.

For information on the complete TRANE line,
call your nearest TRANE office or write TRANE, La Crosse, Wis.

TRANE UniTrane

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING AND VENTILATING EQUIPMENT

The Trane Company, La Crosse, Wis. • East. Mfg. Div., Scranton, Penn. Trane Co. of Canada Ltd., Toronto • 87 U. S. and 14 Canadian Offices.

Engineers: General Engineering Associates, Washington D. C.

Conditioning for \$733 operating cost per tenant!

 $cuts\ cost-gives\ tenants\ individual\ climate\ control$

In the new \$12-million Woodner Apartments, Washington, D. C., 3,000 tenants in 1,140 apartments were cooled during the entire sweltering summer of 1953 by Trane UniTrane room air conditioners... at an estimated cost of only \$22,000 for electricity and cooling tower make-up water.

Slashes power requirements: With the UniTrane system, cooling (or heating) is used only where it's needed. Individual room units can be shut off in unoccupied rooms without affecting operation of any of the other units. Because ventilation air is brought directly through the outside wall into each room unit, there is no central ventilation system to operate.

Result: Operating load can be matched directly to fluctuating temperature requirements for lowest possible operating cost.

Tenants like UniTrane because it places climate control completely in their hands. Occupants of any size motel, hotel,

office or apartment building can have the temperature they want, in any room, any time, day or night.

Owners like UniTrane because this unique combination of tenant advantages costs less to install, far less to operate. No central ventilation system to maintain—no complicated ventilation controls are required. All air, both ventilation and recirculated, is filtered at the unit. Rooms and decorations stay clean longer.

Architects welcome the savings in valuable floor space, design freedom. Units are available in all sizes and types—free-standing, recessed, semi-recessed, ceiling—for either exposed or concealed installation.

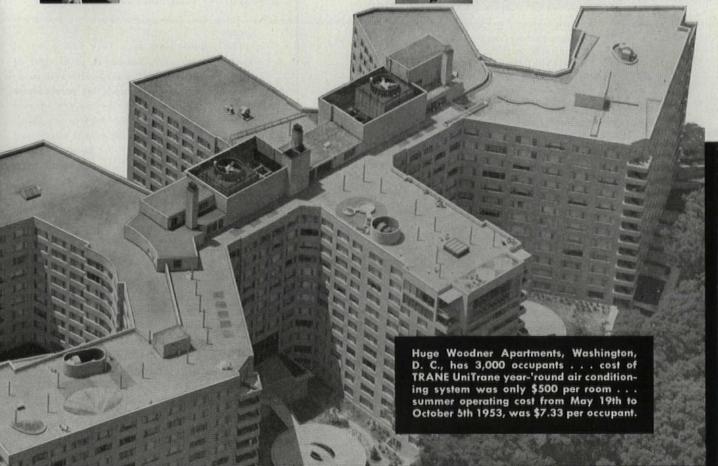
Engineers appreciate being able to plan full capacity for each space. They like the heavy-gauge construction, the quieter operation (each unit is sound-room tested before shipment.)



"Our 3,000 residents are delighted with the system which works well even at the worst of Washington's sweltering summer," says owner-architect Ian Woodner. "We compliment you on the quality of your installation and the soundness of its design and workmanship."



Award for outstanding new building of 1952 was presented to Ian Woodner by Washington Board of Trade. The building was judged by a distinguished panel of nationally-known architects.



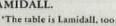
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cost less... clean easier... last longer

ask the Architect who specifies LAMIDALL

The architect would tell you that the walls in these rooms have a beautiful future. They're LAMIDALL.*
These structurally strong thick plastic laminate panels cost less, too. The simplicity of application and the proved durability of LAMIDALL combine to keep the price low and practical. Small wonder so many of the men who specify wall materials specify LAMIDALL.





ask the Builder who installs [AMIDALL



For different but no less important reasons, builders and contractors are equally enthusiastic about LAMIDALL. Its installation time and costs are low. The 4' x 8' panels are cut to size on the job, quickly and easily applied. The walls and gleaming lavatory top surface illustrated here are a beautiful case in point.

ask the One who lives with LAMIDALL

Corridor walls in hospitals take a neverending beating. It's only natural the superintendent of this hospital is well pleased with the durable, practical walls of LAMIDALL. Maintenance time is negligible, for LAMIDALL cleans with a damp cloth. Its hard, smooth surface stubbornly resists stains, hard wear and ordinary abuse. Years from now these walls will look new.



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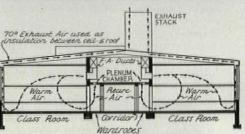
Address Inquiries to Woodall Chicago Plant, 3508 Oakton St., Skokie, Ill., where Lamidall is produced. Other Woodall Plants: Cleveland • Laurel, Miss. • Mineola, N.Y. • Monroe, Mich. • San Francisco, Calif.

LETTERS continued

lem [smaller windows and mechanical ventilation, among other details—Ed.], how do you like that one?

> JOHN LLOYD WRIGHT, architect Del Mar, Calif.





 Here is a picture of Reader Wright's Coolspring School and a diagram of its ventilation system—14 years ahead of its day.—Ed.

Forum:

The school issue is a very fine piece of research work and contains a great deal of valuable material. Of especial interest to us was your page of 50 ideas for schoolhouse economy. Many of these points are of real value, and I think if you were to republish this sheet and send it to the school districts of America, the largest possible good would be accomplished.

One of the problems of fragmentary publication of school designs is that your editorial spotlight moves with such rapidity from one school to another and from one area of the country to a different location. This would be improved upon if perhaps you would select some school which in your opinion represents the most typical school in the country as far as requirements are concerned, and spend the entire issue on this project, thoroughly going into every part of it from the standpoint of planning, design, construction program, costs, philosophy. I am sure that architects would find such a treatment of considerable and lasting benefit.

HERBERT J. POWELL Marsh, Smith & Powell Architects and engineers Los Angeles, Calif.

 FORUM will certainly consider this suggestion in preparing its next school issues but wonders how others feel about it.—Ed.

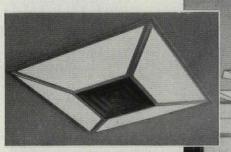
continued on p. 180

Project: Manhattanville College,
Purchase, N. Y.

Architects: Eggers & Higgins,
New York, N. Y.

Fixture Manufacturer: Gruber Bros., Inc.,
Brooklyn, N. Y.

Lightingware: CORNING Alba-Lite and
PYREX brand Lenslites



In dining room, air conditioning diffuser is integrated with lighting fixture. Light is pleasantly diffused by Corning Alba-Lite.



Classrooms, assembly hall, and corridors feature recessed fixtures also shielded with Alba-Lite low-brightness lightingware.



Stage of music auditorium is lighted with 32 recessed incandescent units shielded with Pyrex brand Lenslites.

New ideas in lighting for girls' college realized with Corning lightingware

The ingenious combination of air conditioning with engineered lighting for *five* new buildings of Manhattan-ville College for Girls offers interesting possibilities for almost any type of building.

For example, in the dining room, air conditioning outlets are integrated in large fluorescent fixtures. Each one containing 24 lamps using a total of 600 watts. Sloping shields of Corning Alba-Lite diffusing glass afford low-brightness illumination of the proper intensity for dining.

In the assembly hall, three air conditioning outlets are spaced in each of seven rows of continuous recessed troffers. Alba-Lite is used here also. It provides diffuse, high-level illumination, free of direct glare and harsh ceiling contrast.

Over the music stage of the auditorium, 32 incandescent units are shielded by Pyrex brand Lenslites effecting a wide angle cutoff of the 150-watt lamps. They create a blanket of light of high intensity.

Corning offers a wide range of diffusing lightingware as well as Lens Panels and Lenslites. You will find these products adaptable to any lighting problem. Bulletin LS-35 tells you how to figure requirements. Send for it today.



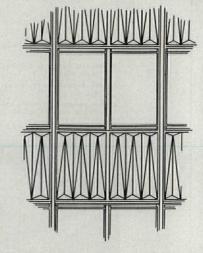
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Please send literature o	hecked:		
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There IS something

-for the Atomic Age of Architecture!



BI-FOLDING FACADES

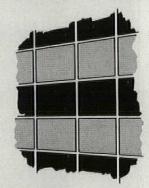
SEALUXE Engineering makes its contribution to the Revolution on the Skyline with new Bi-Folding Facades. One modular displacing as many as four. Larger modulars enable the designer to use heavier materials, better materials and at lower cost.

The Bi-Folding Facades enable the building manager to still have his partition locations exactly as they are in conventional buildings.

Both sides of the glass can be cleaned from the inside.

SEALUXE Bi-folding Facades are convertible from a 100% locked ventilator for mechanical heating and cooling to a conventional type opening, permitting natural ventilation. The building manager just flips a key and the conversion is made. Write in for full information.





SEALUXE engineered panels even 2 inches thick afford the same efficiency as a 12 to 14 inch thick wall. The weight is much less. The colors are fast. The diffusion of reflection is good. Depth of appearance is produced by a perfectly flat slab resembling that of marble, terra cotta or masonry construction.





The Olgyay "Shade Dial" is now available. Designed to assist the architect in determining the angles at which sunlight will fall on buildings at different localities, seasons and times of the day. Developed by Aladar Olgyay, internationally known architect, in collaboration with The University of Texas Bureau of Engineering Research and the Department of Architectural Engineering. Manufactured by Universal Corporation under license arrangement with Mr. Olgyay. These "Shade Dials" give the designer actual figures rather than indexes for calculations. Write in for full particulars.

UNIVERSA

*DRAFTING ROOM STANDARDS *CATALOGS

*MANUAL OF TECHNIQUES FOR METAL-GLASS FACADES

*DICTIONARY OF DEVICES AGAINST THE SUN — proper orientation of buildings for control of Thermal Heat and utilization of the

IMPORTANT: Send Universal Engineers your preliminary drawings for study. They will be returned within three to seven days with worthwhile suggestions.

NEW under the sun!

SEALUXE ENGINEERING is pacing the parade in the proper use of Metal-glass facading in fine buildings everywhere. SEALUXE Metalglass facaded buildings are more attractive in appearance, lower in maintenance cost, easier to heat and cool, and can be constructed at no increased cost over conventional buildings. National in scope, Universal is represented in all leading Architectural Centers. Let Universal assist you with your preliminary drawings.

SEALUXE ENGINEERING is proud to have collaborated with so imminent an Architect as Welton Becket, F.A.I.A., and Associates during the early stages of design and engineering of the Standard Federal Savings Building in Los Angeles. SEALUXE Metal-glass facades contribute to the beauty of the 100% American-type architecture of this building.



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NEW YORK

J. P. TRAVIS, President

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and Subsidiaries

DALLAS UNIVERSAL CONSTRUCTION CORPORATION * DEVELOPMENT ENGINEERING CORPORATION **

*Created to handle all SEALUXE Metal-glass erection work.

**Created for research, testing and laboratory work.



"The Job Goes TWICE AS FAST with 'Incor'"

GRAVESEND HOUSES, Brooklyn, N. Y.

Owner: NEW YORK CITY HOUSING AUTHORITY

General Contractor:
CAYE CONSTRUCTION CO., INC., Brooklyn, N. Y.

Architect: MATTHEW W. DEL GAUDIO, New York

Structural Engineers: TUCK & EIPEL, New York

Ready-mix 'Incor' Concrete:
COLONIAL SAND & STONE CO., INC., New York

• Assembly-line efficiency in industry has its counterpart in construction, as illustrated in Gravesend Houses, latest in New York City Housing Authority's record-shattering program.

Foundation problems slowed the job—but concreting know-how made up two months' lost time, got the job back on schedule. Walls and slabs above first floor, in the 15 seven-story units, were concreted with 'Incor' 24-Hour Cement.

Well-built forms were filled, stripped, reassembled, on schedules as precise as any automobile assembly line: 105 floors concreted in 66 working days—1.6 floors a day! Contractor's sum-up:

'Incor' was a life-saver... the job went twice as fast, thanks to high early strength you can rely on ... exceptionally smooth surfaces saved on finishing, too.

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*Reg. U. S. Pat. Off.



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ARCHITECTURAL FORUM

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NEWS 37 The usual comprehensive roundup of industry news plus inauguration of a new monthly feature picturing and describing briefly the nation's most significant new buildings. **EVENTS** 64 LETTERS 72 ARCHITECTS' OFFICES 102 A pictorial review of the work these 11 firms have done for themselves: Williams, Williams & Williams, Palm Springs (p. 102) Meyer Katzman, New York City (p. 104) Alvin Lustig, New York City (p. 106) Charles R. Colbert, New Orleans (p. 106) Frederick G. Frost, New York City (p. 107) John Ridley, Seattle (p. 108) Mario Corbett, San Francisco (p. 110) Wahl Snyder, Miami (p. 111) O'Dell, Hewlett & Luckenbach, Birmingham, Mich. (p. 112) Lawrence & Hazen, Seattle (p. 113) 11. Baldwin-Machado, Montgomery, Ala. (p. 114) INDUSTRIAL BUILDING 116 H. J. Heinz in Pittsburgh remodels a big auditorium into modern employee facilities, encloses its new vinegar plant with a curtain of glass and aluminum. Architects: Skidmore, Owings & Merrill. COLLEGE AUDITORIUM Oberlin's sway-backed building was designed by Architects Harrison & Abramovitz and Eldredge Snyder but was shaped by Acoustical Engineers Bolt, Beranek & Newman. NEUTRA ON ARCHITECTURE 130 Third in FORUM'S series on architectural trends-excerpts from the new book by Architect Richard J. Neutra, "Survival through Design." 134 Modern addition to old Detroit University school by Architects Leinweber, Yamasaki & Hellmuth. CHILDREN'S HOSPITAL 138 Gaiety and color and child scale are brought to Seattle's Orthopedic Hospital by Architects Young & Richardson, Carleton & Detlie. 144 **EXHIBITION DESIGN** 146 Packing cases double as display cases for Scandinavian exhibit traveling between 20 US and Canadian museums. flexible space-saving exhibit technique by Danish Architect Erik Herlow. SMALL BUILDINGS Junk-yard office for Jones Iron & Metal Co., Dearborn, Mich. by Architects Leinweber, Yamasaki & Hellmuth.
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PRODUCT NEWS

TECHNICAL PUBLICATIONS

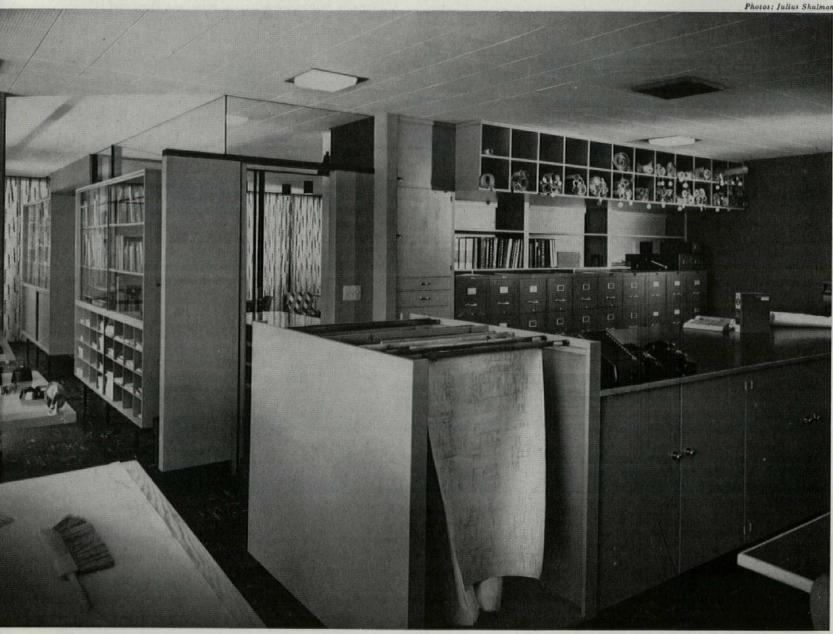
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ELEVEN ARCHITECTS' OFFICES

Architects' offices are like the health of doctors' families and the morals of ministers' sons—willy-nilly and for good or ill, a professional demonstration. But—like children—architects' offices are not primarily show pieces. They are primarily work places. (Indeed, many clients, and especially the most important, never see their architect's office.) After surveying a great many architects' offices, FORUM is convinced that the architects who have put first things first and concentrated on good working quarters, generally come off with the best show places. Examples of such happy circumstances follow.

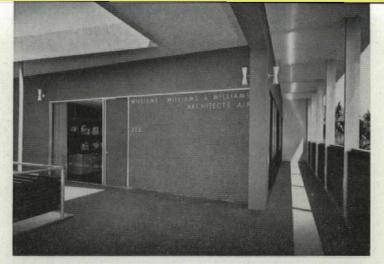




Storage and printing space is notable for minute planning care, is as handsome in its own way as visitors' area (right). Previous 9' x 65' office, which was "like working in a bus and conferring in the luggage compartment," made any makeshift anathema to architects.

Office of Williams, Williams & Williams, Palm Springs, Calif.

Every item and inch does a specific job



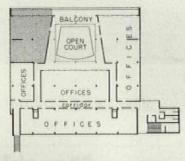
WALKING DECK

WALKING DECK

WALKING DECK

SPECIFICATIONS

SOLUTION



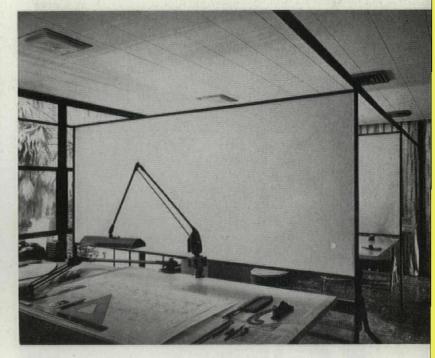
Patio-balcony provides access to offices around periphery of second floor. (First floor is occupied by stores.) View (at left) shows corner of patio and east balconies just outside Williams' office. East facade is shown on opposite page. Building was designed by Williams' office, with Clark & Frey.



Main stairway to second floor leads from parking lot on west. First-floor framing is reinforced concrete with 20' spans; second-floor, light steel.



Reception area is divided from work space by display walls. Most partitions, like that behind desk, go to 7' with glass above for space continuity. Same 7' height with glass was used for masonry portions of first-floor exterior walls to give floating quality to second floor.



Semiprivate work space—designated engineering, design and specifications—is for three principals (father and two sons). Alcoves are separated from drafting room by floor-to-ceiling partition (see plan). Building cost, including tenant requirements: \$16.50 per sq. ft.

-for storage, display or work



Photos: Alexander Georges

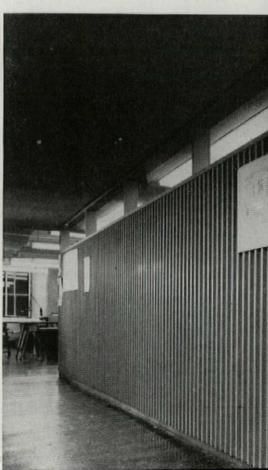
Office of Meyer Katzman, New York City

Movable dividers are freestanding storage units with steel angle uprights on which shelves, cross bracing and panels of hardboard, metal or plywood are bolted as needed.

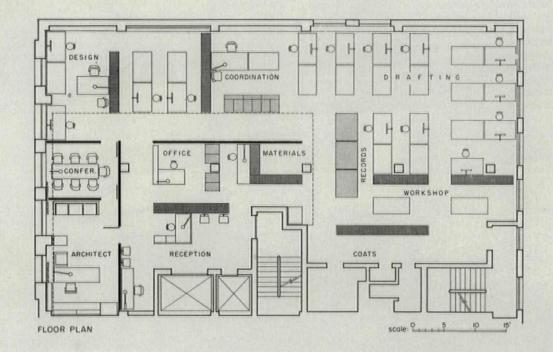
Movable dividers for flexibility;

Fixed wall of wood strip on plasterboard behind office core, and line of dropped ceiling





Reception desk abuts divider that holds office supplies on other side; panels are painted plywood. Uprights merely touch ceiling, are not fixed to it. Note crisp negative-joint detailing of floor-to-ceiling plaster-board wall (left background).





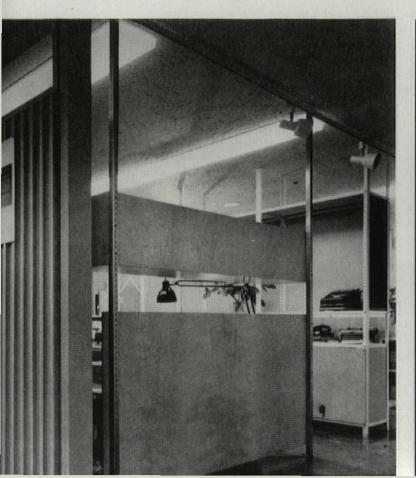
Conference-room wall (view is toward architect's office) is glass-topped, has pin-up panel of fiber-board covered with burlap, lower panel of painted plasterboard. Negative joints emphasize panel treatment. Dropped ceiling, housing air cooling, stops short of old office-building windows.

Plan was calculated for maximum flexibility but has several fixed points to hold basic pattern, prevent chaos. Central office-materials core can expand into present records area. Drafting room is larger than presently needed.

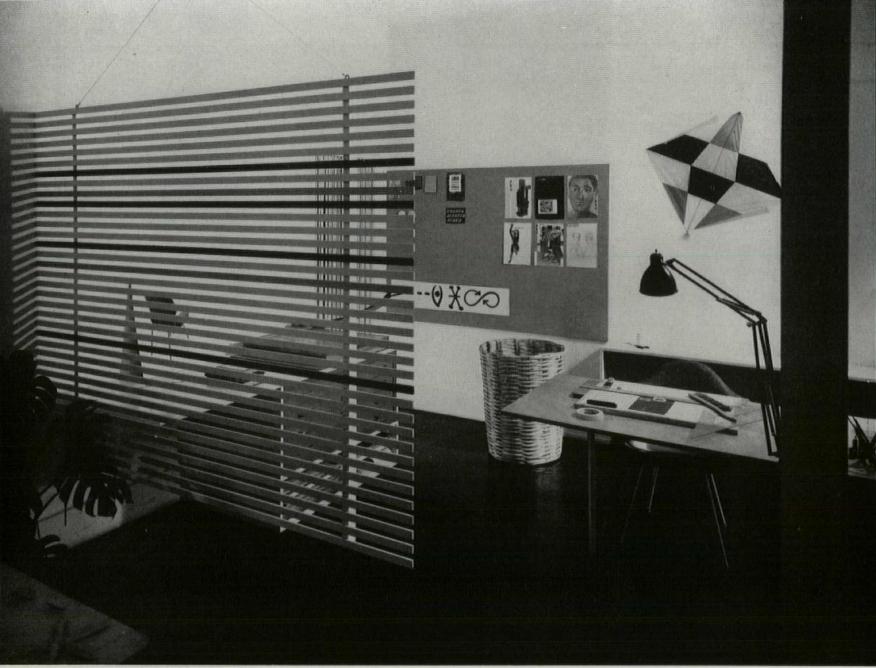
two strategic fixed lines for "backbone"

define main circulation. Corridor wall at conference-architect suite is other fixed line (below)

Fixed divider behind office desk (below) has birch panels. Uprights are fastened to nailers above ceiling. Note convenient reception-area niche for conferring with visitors.





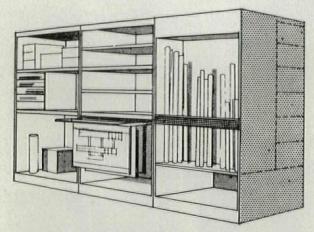


©Ezra Stoller

Slat divider hangs from ceiling on thin crossed wires, is kept from swinging by tiny angle fasteners at wall end. Divider separates two design assistants and secretary. Office is in remodeled row house.

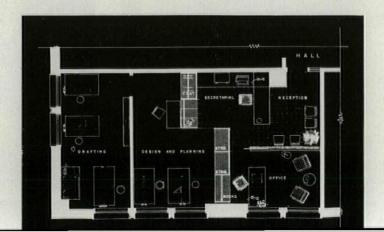
1. Office of Designer Alvin Lustig, New York City

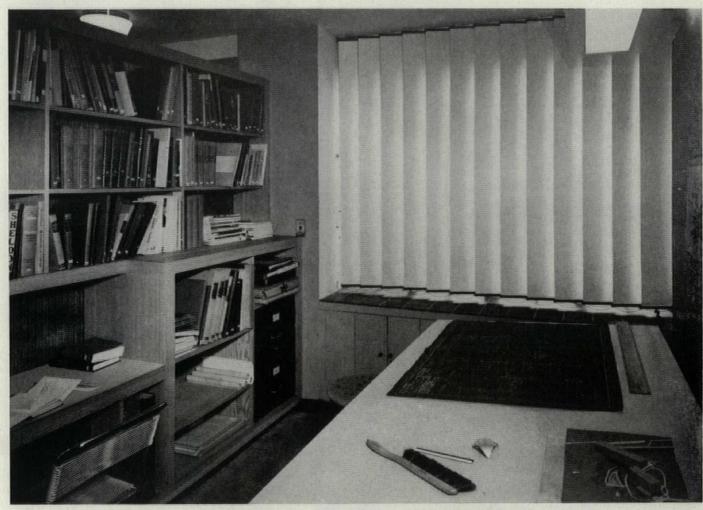
More space dividers—ephemeral, opaque



Storage cabinets, tailored to architect's requirements, help Colbert make the most of his tight rented quarters in an office building.

2. Office of Charles R. Colbert, New Orleans





Bookcase-storage partition (at left) is backed with translucent plastic which lets pattern of books show through to enliven corridor behind. Note convenient desk alcove (in left foreground), vertical window blind (in background). This is partner's office.

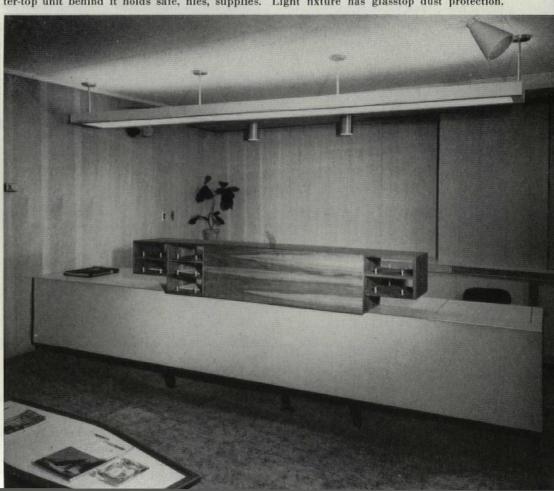
3. Office of Frederick G. Frost, New York City

Reception desk integrates switchboard, bookkeeping and typing facilities. Angled counter-top unit behind it holds safe, files, supplies. Light fixture has glasstop dust protection.

and translucent



Reception room partition is perforated cement asbestos board acoustically treated.



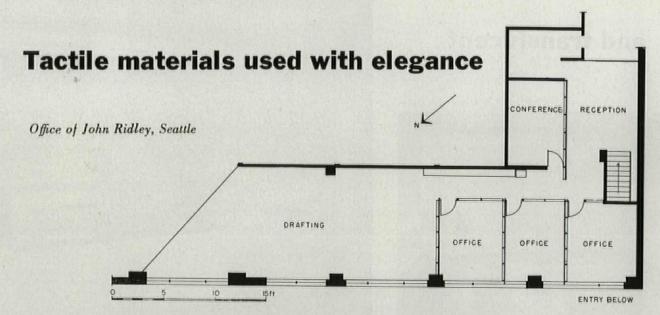


Photos: Ernst Kassowitz



Conference room is separated from reception hall by partition consisting of 1' x 3' x 2" panels of cold-storage insulation cork set between 2 x 4s, with obscure glass below, clear glass above. Room has skylighting plus cylindrical floods.

Reception hall (left) was given orderly modular rhythm by spacing exposed studs of stained common lumber to take hung panels of cement-impregnated wood fiber. Panels screen ductwork and wiring.



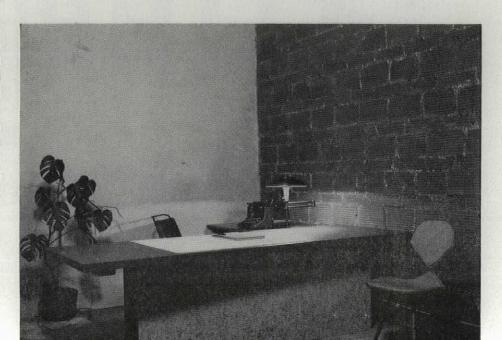
Corner of loft building is subdivided into offices for Ridley (corner), landscape architect and engineer. Office for another engineer will be partitioned out of drafting room. Four men share lease, common facilities.

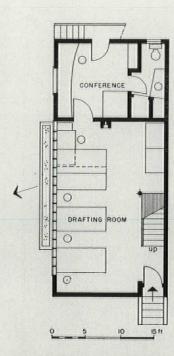


Corridor, viewed here from third private office, was kept visually open, is lined with reference-book and sample storage units. Chairs were staff-designed, locally made.

... create an atmosphere of friendly dignity in an old loft

old wall of corner office was streaked by paint-spray operations of previous tenant. Ridley "brushed tile once over with full swipes of tile color," leaving mortar uncovered and many flecks. Ridley's desk is vinyl-covered drafting board set on wood-fiber panels; conference table and reception desk are same. With five-year lease, annual rent comes to 81¢ per sq. ft., improvements (\$4,000 or \$800 per year) to 40¢ per sq. ft.; total: \$1.21 per sq. ft. per year!

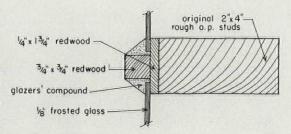




Glass wall along north side of remodeled building takes advantage of old balloon frame studs, which also suggested economical detail (right). Easement on north is 9'; light through golden bamboo planting and obscure glass gives room cheerful, porchlike effect.



Conference room is in original kitchen area of small 1884 house bought by architect and remodeled for work space below, living quarters above. Walls in view above are teak flooring.



These two offices

Office of Mario Corbett, San Francisco



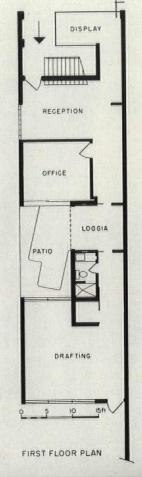


Stairwell in Corbett's drafting room has post necessitated by removal of three nonbearing partitions; just for fun, it is a pine tree. South wall is cedar shingled.

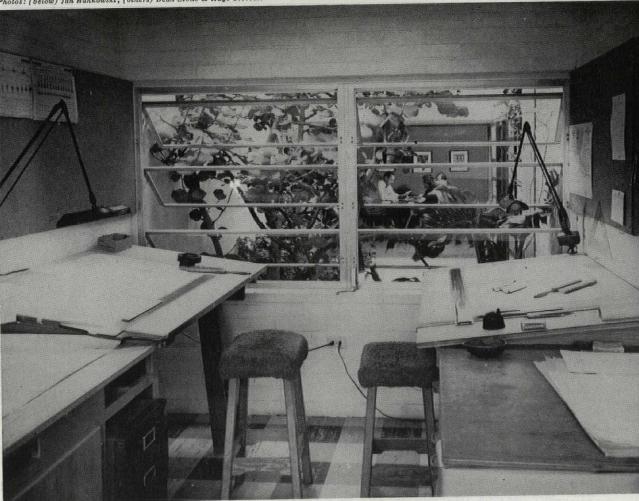
make a special feature of their windows

Office of Wahl Snyder, Miami

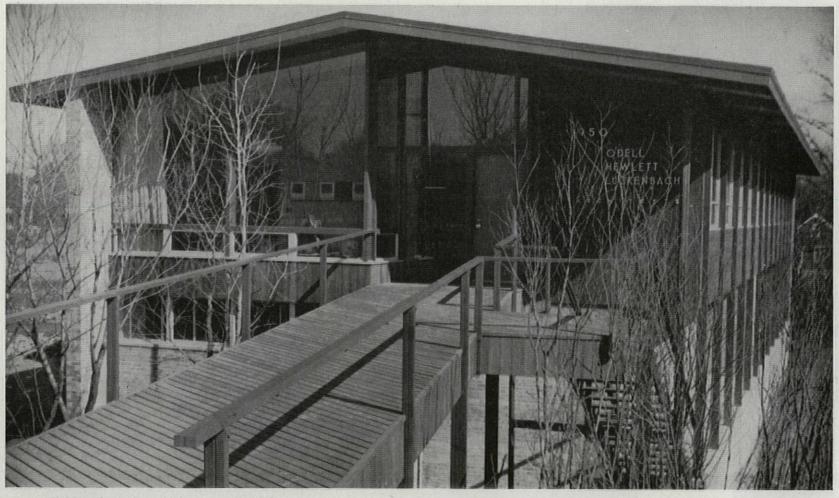
Photos: (below) Jan Hankowski; (others) Dean Stone & Hugo Steccati



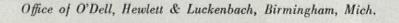




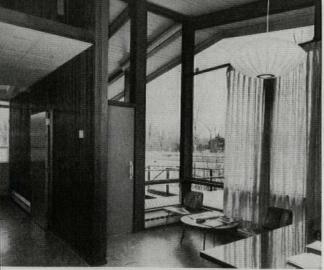
Drafting-room alcove in Wahl office gets patio view, also has porchlike air; Wahl's private office is visible across patio. Building is exposed concrete block, two-story, was built by architect. Cost: \$8 per sq. ft.



Bridge leads from highway to second-floor reception area. Site, a 3½-acre triangle, was much cheaper than adjoining land because of steep dip below road.



Two suburban offices one extrovert:

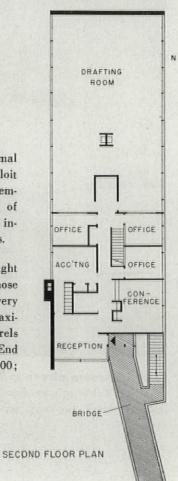


Photos: (above and bottom right) Joe Munroe; (below) Richard Shirk



Reception room: informal approach and entrance exploit suburban openness and emphasize appropriate use of wood in bridge decking, interior framing and finishes.

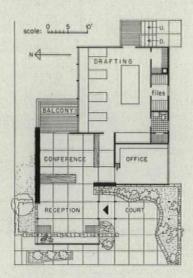
Drafting room exploits light steel exterior framing whose vertical columns, forming very narrow mullions, permit maximum window area. Spandrels are insulated fir sheathing. End wall is brick. Cost: \$79,000; \$10.30 per ft.



Second floor accommodates private offices and drafting room. Lower level has engineering drafting room and, in brick front portion, utilities and blueprint room. Firm moved from downtown office building 18 months ago, discerns no loss of downtown business, some gain in suburban work.



Conference room, viewed from balcony, features interior-exterior beams and stone walls, calculated to continue effect of entrance court throughout building and to belie small size and narrow lot. Cost of building: \$22,780; \$16.50 per sq. ft.



Main street facade closes building off from noisy highway; problem was to permit building to turn its "side" to road yet incorporate unmistakable entrance. Court provides abrupt atmospheric break between offices and highway. Building won 1953 Honor Award from Washington State AIA chapter.

Office of Lawrence & Hazen, Seattle

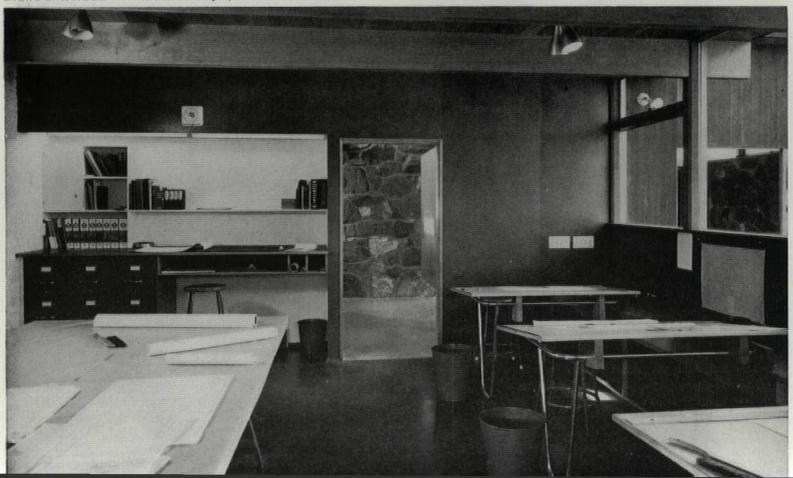
one introvert

Stone and wood serve as built-in displays of native materials





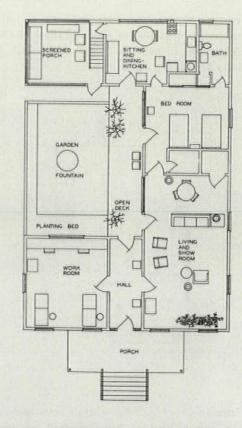
Photos: Chas. R. Pearson







Transformation: old house was empty and untended ten years but timbers and floors were sound. Canvas canopy follows old porch roof line.



Office of Baldwin-Machado, Montgomery, Ala.

Real estate derelict respectfully treated, yields



Showroom doubles as living room for bachelor partners; most furniture is firm's own design. Phonograph closet at rear also holds fabric samples.



Open deck bordering garden takes over job of hall in central portion of building. Rear wing was added by owners. Scheme nicely exhibits, in casual, easygoing way, firm's ability to handle integrated architectural-interior-furniture-landscaping design jobs.

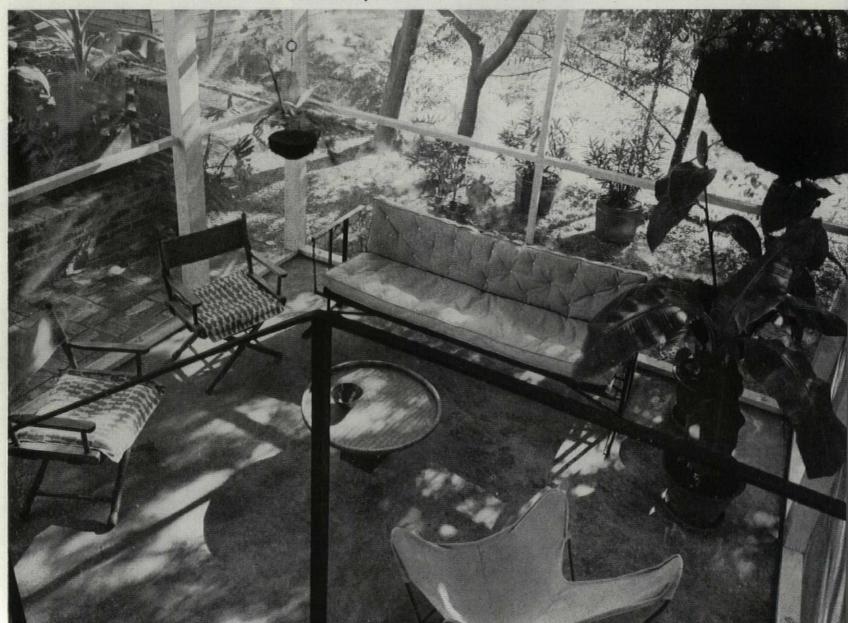


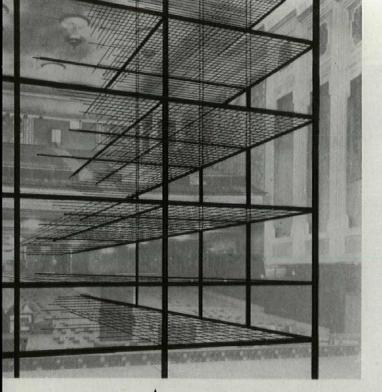


Luxuriant planting is used as cooling agent; fountain runs off into planting beds, dampens salvaged weathered brick of garden wall.

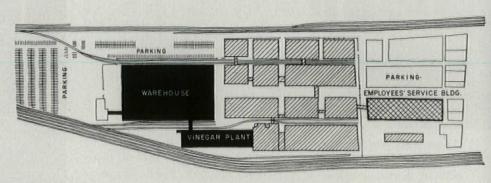
workroom and showroom

Screened porch uses open height, planting, cool textures to subdue Alabama summer





For Heinz in Pittsburgh,



SERVICE-BUILDING ALTERATION



Platoon of old buildings, arranged on grid beside river, was restudied in 1947 by Skidmore, Owings & Merrill (AF, May '49). New buildings are designed with eye to possible floods, with no vulnerable underground cubage, and with most machinery on upper floors. SOM's master plan will guide future work.

FINISHED GOODS WAREHOUSE

VINEGAR PLANT

At the juncture of the Monongahela and the Alleghany is the sleek downtown Pittsburgh world of new office buildings—Gateway, Alcoa, US Steel—but north across the river are new versions of the kind of buildings which really created Pittsburgh: factories. In one remodeled and two entirely new buildings the old Heinz Co. has more than met the local white-collar challenge in architecture.

Heinz, which began in 1869 with horse-radish, and has grown brick on brick to a production of more than 400 varieties of food (although the stencils have not been changed since they hit 57), is in the biggest planned expansion in its history. The evidence, these \$8½ million in new buildings:

▶ The employees' service building (above and p. 118) keeps its 1930 Kahn facade, but has had half its guts ripped out and replaced.

The new warehouse (above and p. 122) has 7.9 million cu. ft. of windowless space, turns its con-

tents over every two weeks on the average, and does it with fewer than 40 warehousemen.

▶ The vinegar vat house (right and p. 120) has the handsomest wall in Pittsburgh, the most sophisticated steel and glass curtain Skidmore, Owings & Merrill have yet put up.

There has always been a large ingredient of pride to Heinz buildings; the old ones, decorated and spired, still show it. When the founding father of the 57 varieties, old H. J. Heinz, died in 1919 at the age of 75, his colleagues found the back drawers of his desk filled with brick samples; legend says the day before he had been up on a scaffolding scolding the bricklayers into making ½" mortar joints in some of the handsomest walls in the country. Today the same pride that made H. J. put up those precise walls—some of which are veneers in front of other walls whose mortar joints did not please him—is revealed on the next six pages in the buildings his grandson has added.



H. J. HEINZ
horse-radish and 1/8"
mortar joints

Photos: (Heinz) Johnston Studio: (others) © Ezra Stoller

SKIDMORE, OWINGS & MERRILL, architects & engineers
GORDON BUNSHAFT, partner in charge
JAROS, BAUM & BOLLES, mechanical engineers
GEORGE A. FULLER, general contractor

a new variety of industrial architecture





In 1930 elaborate fretwork. The old auditorium

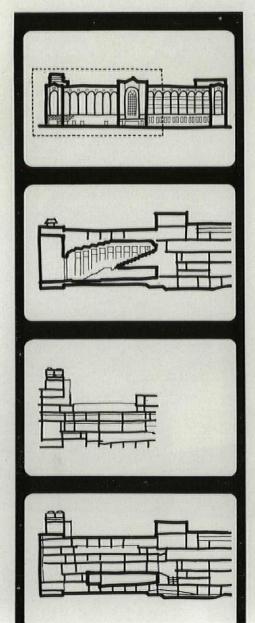
The remodeling of the employees' services building: old package, new contents

Behind a beautiful brick facade, vintage 1930,

was this vast auditorium.

By inserting this new framing, on new foundations,

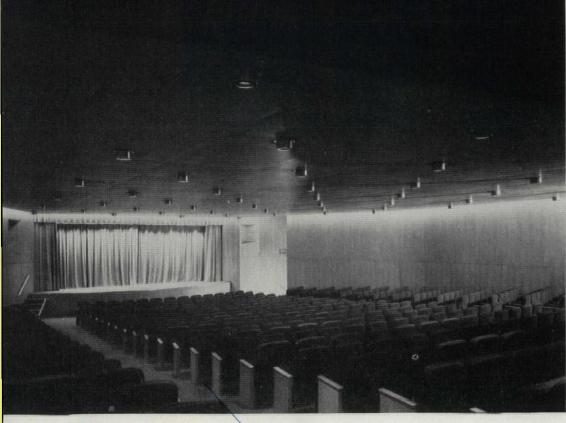
a new tenantry of space was made.



Heinz's employees' services building is the gate-house to the great food plant. A pullman-shaped building 355' long, it holds locker rooms in which the 2,400 factory employees each morning change from mufti to white work clothes and hats (everyone in the manufacturing areas has to wear a hat, by company sanitary rules) and move on to the cooking and canning. At lunchtime they come back, take off their hats, and eat in several cafeterias in the west half of the same building. Designed by the Albert Kahn organization in the late 1920s, the big building also housed a giant 2,500-seat auditorium which had been filled only about once a year since, at Christmas parties. This great cubage was the space chosen for remodeling.

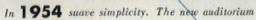
The old auditorium was ripped out and in its place was built a suave, small auditorium and a set of offices, halls for sales conventions, etc. Structurally this was like putting up an entire new building within the blank brick walls of the old auditorium, even to the necessity to drive new piles down to support new column spacing (the old auditorium trusses still support the upper floors, but below that all is new).

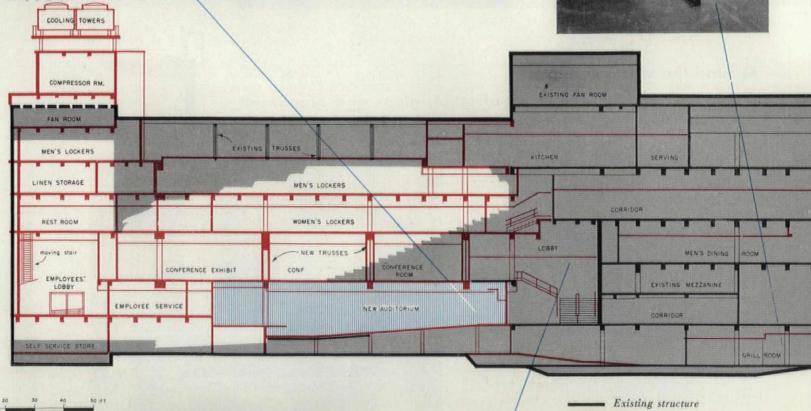
In the central lobby, and in rooms in the west half of the building, only finishes and equipment were changed. Cost of the remodeling (\$2 million) was more than the original cost of the building, but still represented a saving over the cost of an entire new building today.



Downstairs cafeteria space is subdivided by obscure glass partitions. Colors are vivid, create sunny effect under electric light. Finishes are hard, upkeep easy.





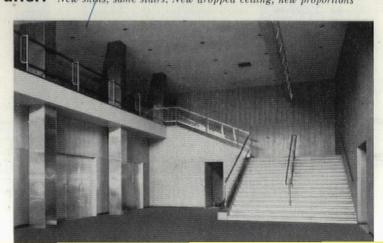


Central lobby before

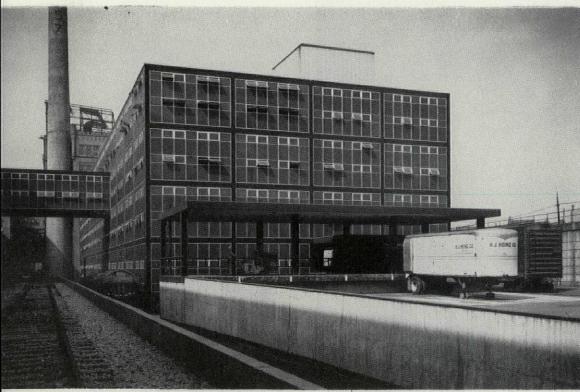


and after. New skips, same stairs. New dropped ceiling, new proportions

New structure



Photos: © Ezra Stoller and S. J. Link



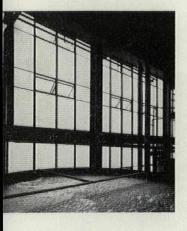
Vinegar building is flanked by railroad tracks, connected to warehouse by bridge

Around the vinegar plant

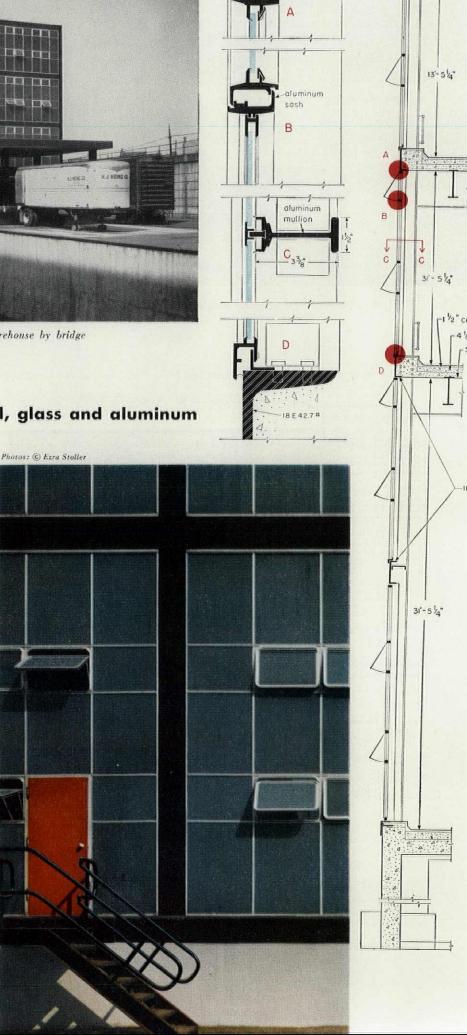
a wrapping of steel, glass and aluminum

No fire rating was required of this wall around the great vinegar vats. The wall is all curtain, designed to resist only weather from the outside and vinegar fumes from inside. (Vinegar eats right through concrete, so it was better to leave the metal naked, where it could be watched for corrosion.) The wall is also a brilliantly incisive piece of architecture.

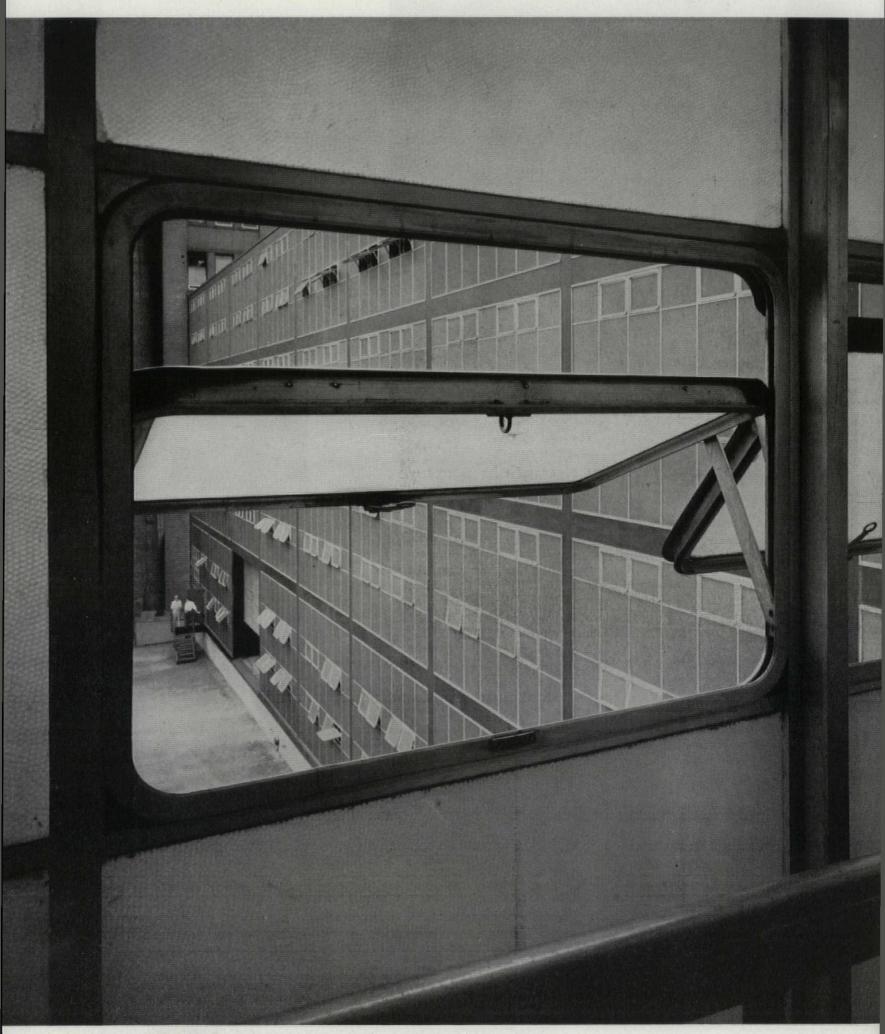
Only about 30 people work in the structure, so interior conditioning was not of prime importance; there are heaters, and there is a lot of daylight blurring milkily through the glass wall; some areas are floored, others have only grillwork catwalks. Cost of the wall: \$4.07 per sq. ft. (it is a stock industrial wall manufactured in Pittsburgh). Cost of the building: about \$1.5 million.



Blue outside, white inside. In interior photo (left) and exterior (right), colors read just about as they do in actuality. Effect from exterior is of intense color in glass, against the severe black of the steel frame and precise lines of the aluminum mullions; from inside, translucent glass seems milky white. Bubbling surface is top of vinegar vat.



sash



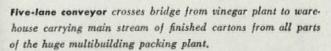
Stock wall has maximum glass width of 36". Aluminum mullions are lean but deep (see details beside photo, left). Translucent glass is hammered heat- and glare-reducing; broad bar (at bottom of photo) is a bumper rail for the dollies and trucks used in plant.

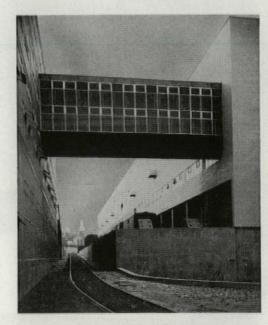


Photos: © Ezra Stoller

Finished-goods warehouse: strength in structure

Basic fact of this warehouse design is the live load, 750 lb. per sq. ft. on the top two floors, 300 on the first floor. This tremendous structural task is accomplished on the lower two of the three decks in reinforced concrete. On 20'-6" centers both ways rise big columns resembling the piers in an Egyptian hypostyle hall (photo, below). On the third deck, whose columns support only the roof, the bay size is increased to 41' square and is framed in lean steel, better for maneuverability of fork lift trucks. There are few windows in the handsome brick wall (cost of wall: \$2.45 per sq. ft.; cost of building: \$5 million).

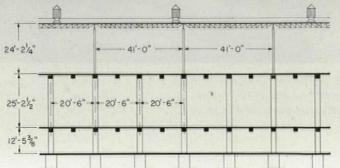




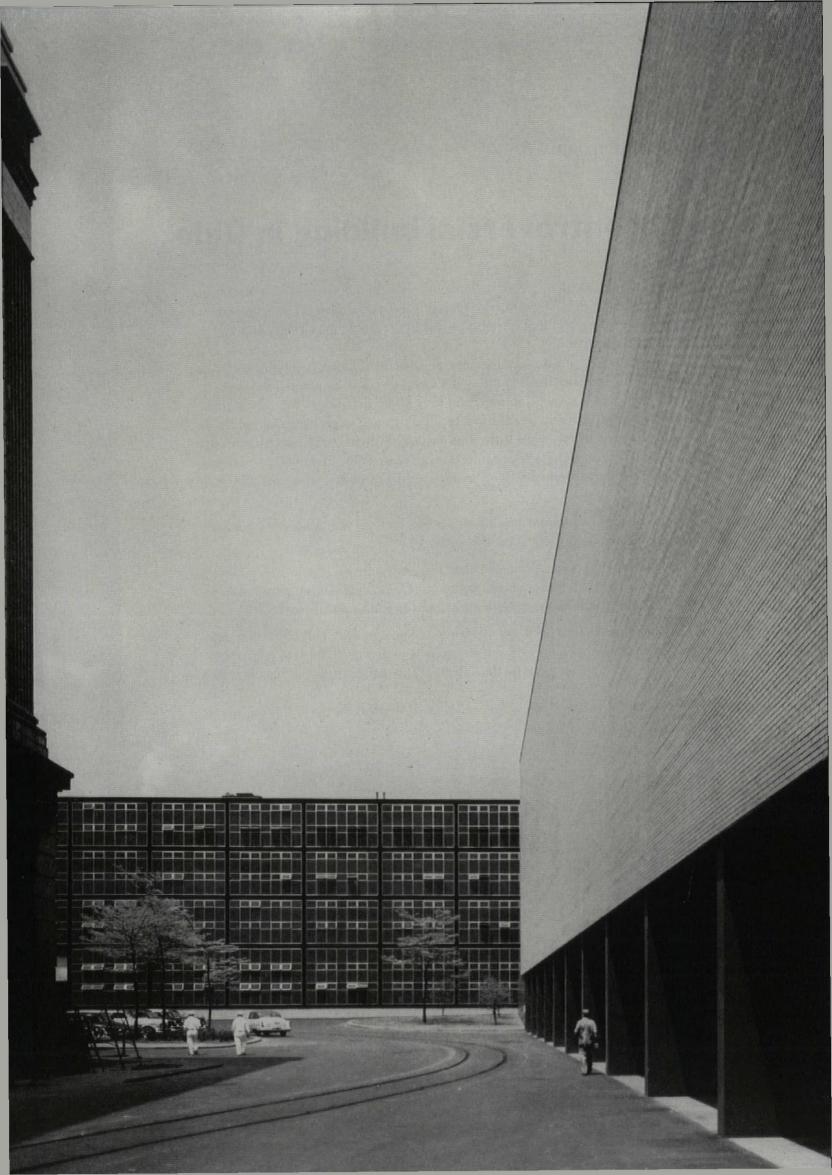
Bridge enters warehouse at top level, distributes conveyor loads downward. Warehouse wall is oyster-white glazed Ohio brick. This central warehouse replaces a dozen smaller leased warehouse spaces in Pittsburgh; will save \$500,000 per year.







First floor has 12' ceiling; top two floors go up to 25'. First floor is lower because of old flood fear; in 1936 flood, river would have ruined merchandise stacked on this level but would not have hurt anything 12' up, so this floor is used mostly for goods in rapid transit, which can be cleared fast. Trucks load from two levels at end of building (above) and all along other end wall too (photo, facing page).



OBERLIN'S AUDITORIUM

"The most controversial building in Ohio"

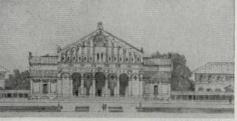
the Cleveland *Plain Dealer* called it, not entirely without malice. To Architect Wallace K. Harrison the comment was probably no more than a glancing blow: he learned a long time ago that stirring up controversies is the price you pay for being bold—and creative.

For if the new, \$1.2 million auditorium at Oberlin College is anything at all, it is certainly bold and creative. That does not mean that it is an unqualified success. Ohioans are debating that question now, and may go on debating it for a long time.

But few buildings in recent years have faced up to major problems as boldly as Oberlin faced up to them. This little auditorium, with its sway-backed roof, its strangely cubist forms and its wavy interior surfaces, tries, creatively, to answer a lot of challenging questions that most architects like to dodge. Here are the three most important:

- 1. Can you design an auditorium to fit snugly around an acoustic engineer's "optimum shape" and still get good architecture?
- 2. Can you resolve the glaring conflict that you come up against in every theater—the conflict between low-slung auditorium and towering stagehouse—without making the former too high or the latter too low for good appearance?
- 3. Can modern architects keep on designing "anonymous" buildings that may signify everything or nothing—or do we need a new vocabulary of expressive, modern forms that suggest clearly the purpose and the meaning of the building before us?

Harrison's bold answers to these questions are described on the following pages.



1923: CASS GILBERT



1937: RICHARD KIMBALL



1941: ELIEL SAARINEN

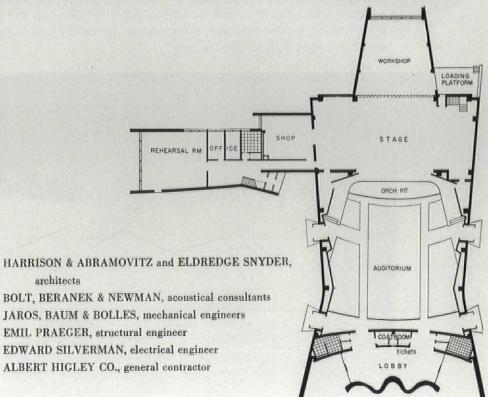
Over the past 30 years, many other architects submitted designs for Oberlin's Auditorium

There is another story to Oberlin, and it is almost as fascinating: the money for this auditorium was bequeathed by Charles Martin Hall in 1914. Since then, many architects have submitted drawings (see above). But none was accepted, and this "most controversial" structure was built instead. "It will take some getting used to," says Oberlin's president, William E. Stevenson. That is quite a compliment: there is nothing so dull as a building that does not "take some getting used to"—except, perhaps, a college that does not make you think.

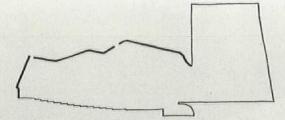




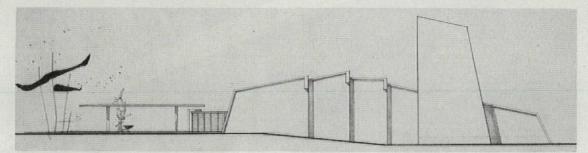
1943: SHREVE, LAMB & HARMON



BOLT, BERANEK & NEWMAN, acoustical consultants JAROS, BAUM & BOLLES, mechanical engineers EMIL PRAEGER, structural engineer EDWARD SILVERMAN, electrical engineer ALBERT HIGLEY CO., general contractor

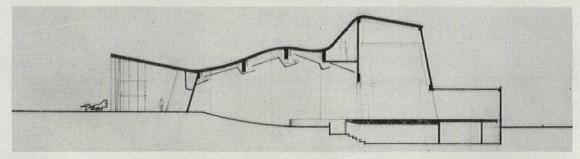


Acoustics experts Bolt, Beranek & Newman recommended this wavy shell for optimum sound



Early architect proposal shows auditorium that clings to the acoustic "contours" like a glove. Chief objection: stagehouse looked too tall, especially on Oberlin's low skyline. Next, architects tried a "Miesian" design—a rectangular steel and glass cage to enclose the entire theater. It was rejected as being too wasteful of space.

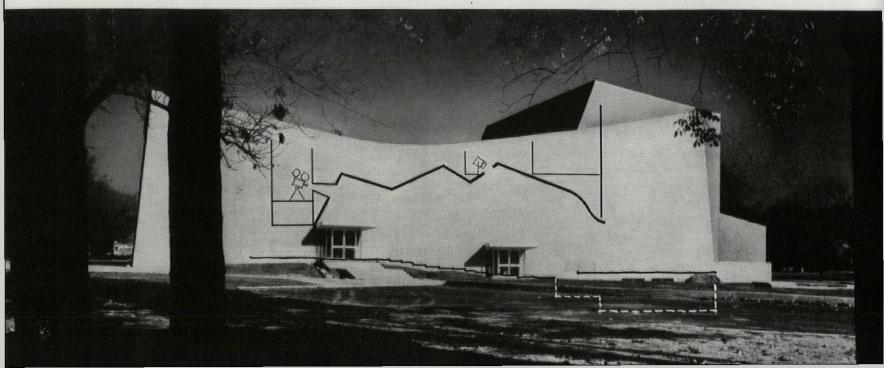
Next: a fluid form that helped swallow up the towering stagehouse



This section also gave the architects necessary space for a fan room and lighting galleries above the auditorium—between acoustic shell and roof proper. While expressive in a general way of the acoustic shell, this humpbacked silhouette was no longer directly related to it and created some new sculptural problems out of proportion to any possible advantages gained.

Final version relates to acoustic shell, pulls down stagehouse, integrates entrance

The forms are now less fluid, more straight-edged. They lend themselves to some massing of elements at the rear of the building that recalls early cubist painting and sculpture (see p. 128). Total silhouette of building is reasonably cohesive. Moreover, there is now enough space between swayed roof and acoustic shell to tuck in lighting galleries, fan room and projection booth. Sloping limestone surfaces on the sides and in the rear of the building were specially waterproofed, and joints were made tight with bronze "splines."





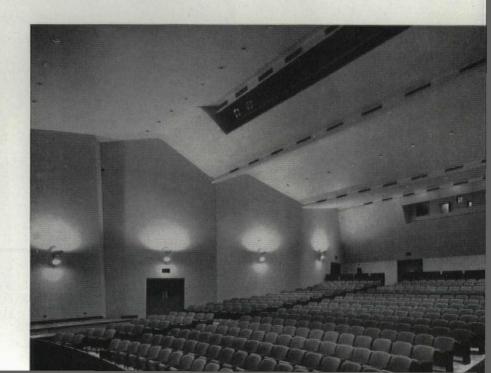
Photos: Lionel Freedman

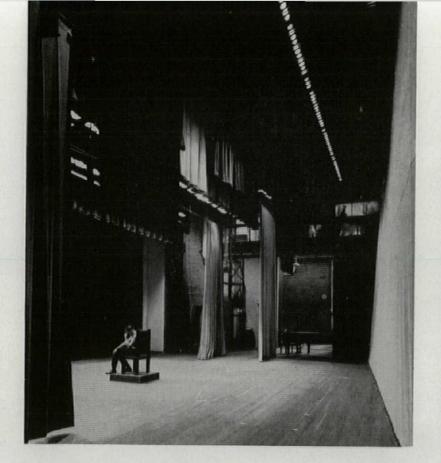
501-seat auditorium serves concerts, lectures, Shakespearean plays

Concerts may range from piano recitals all the way up to Cleveland Symphony performances. Musicians find the acoustics perfect for either,

Lectures are frequently delivered to students, who use wide arms of seats on which to write. This requirement resulted in 36" spacing between rows of seats, massive spot-downlighting all over auditorium to get 30 footcandles at desk-arm level.

Shakespearean theater (or any other kind) is greatly assisted by wrap-around stage, excellent lighting galleries, fully equipped stagehouse and deep stage proper. For details, turn the page.

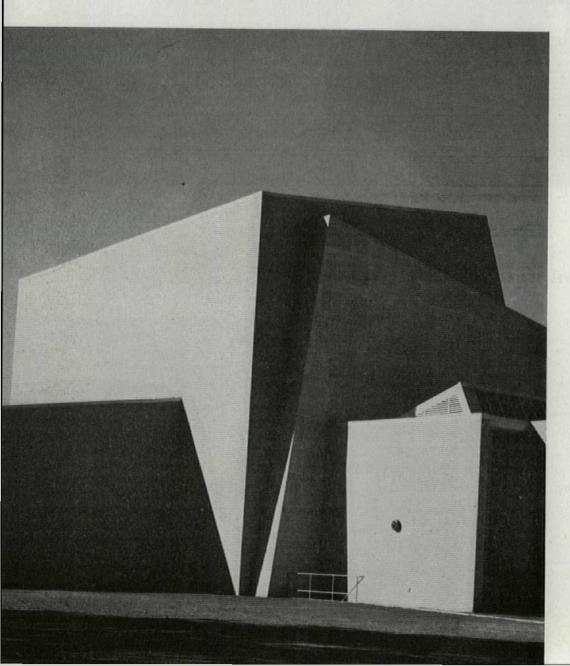




Oberlin's fully equipped stage is a

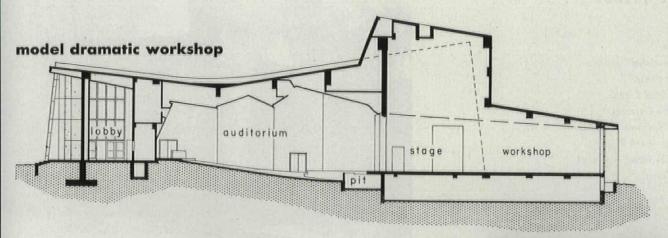
Here is a stage that is actually big enough. It wraps around an ample orchestra pit so as to facilitate performances of Shakespearean plays and it can be opened up in back to include a spacious workshop in large sets. Section shows how backstage workshop can be used to enlarge stage facilities. For Cleveland Symphony performances, workshop can be opened up and joined to stage, and baffles can be lowered from stagehouse to create huge "megaphone" aimed at audience. This was Cleveland Symphony director's idea, has worked out well. Harrison also believes that rear-projection TV may some day be perfected, expects workshop to serve as rearprojection room in that event. In addition, auditorium has usual movie screen and frontprojection booth.

Massive cubist forms spell "theater" and create



Oberlin is the direct antithesis to the current idea of an "anonymous architecture"-a kind of universal shell (perhaps a geodesic dome or a steel and glass cage) which is used to enclose (and thus to conceal) whatever temporary or permanent function a building may possess. While that idea has a lot to recommend it, Architect Harrison's attempt to create an expressive modern symbol is at least equally valid, certainly in public buildings. People may argue for years whether the Oberlin forms are handsome or ugly, but nobody can deny that these forms spell out, clearly and unequivocally, that this building is a theater and nothing but a theater. To have achieved that without resort to traditional clichés is impressive in itself. To have even made the attempt to achieve it sets Harrison apart from a great many of his contemporaries.

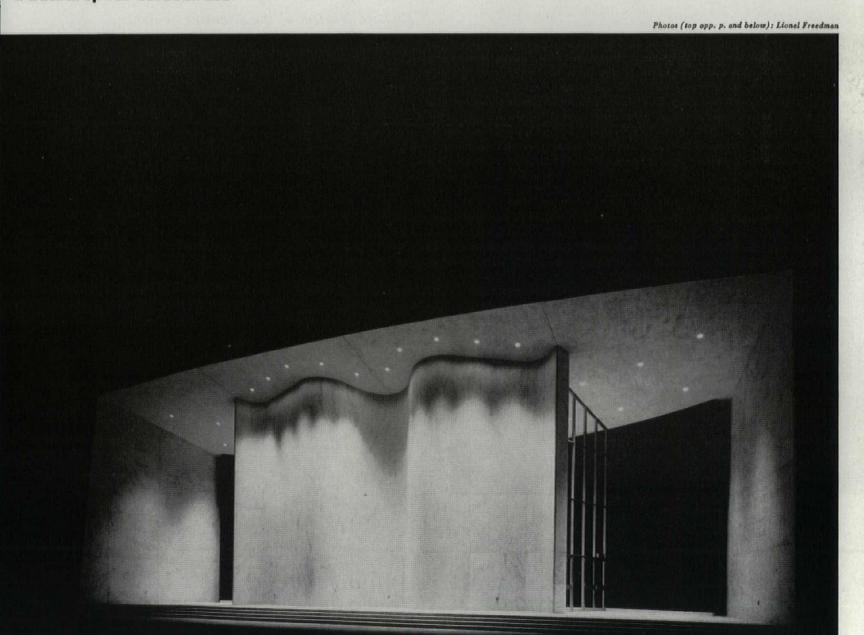
The composition on the left shows the rear of the stagehouse where it is joined by workshop wings. Opposite is the marble front of the theater, by night. This front terrace is sometimes used by a band at outdoor dances on the campus. It makes a handsome backdrop, on axis with one of the main walks across the campus park.





Orchestra pit and wrap-around stage Backstage workshop

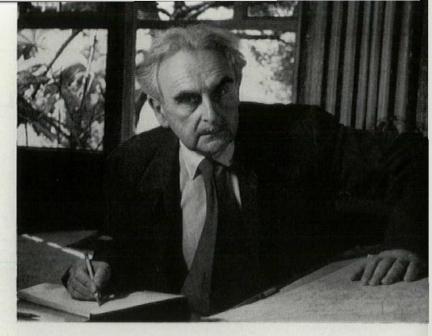
a backdrop for outdoor use



ARCHITECTURAL TRENDS

This article, representing the "functional" approach to architecture in its more mature phase, is the third in a series on Architectural Trends.

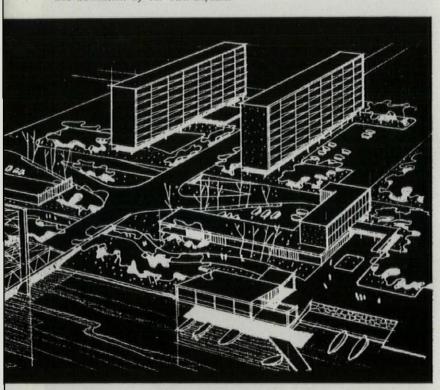
Earlier articles were "The Six Main Currents of Modern Architecture" by Eero Saarinen (July '53) and "After the International Style—Then What?" by Robert Kennedy (Sept. '53). The views expressed are not necessarily those of the editors.



Richard J. Neutra

SURVIVAL THROUGH DESIGN

"The way we design our surroundings can lead biologically to survival and wholesomeness, or death and damnation by our own default."



is a close study, by pioneer Architect
Richard Neutra, of the scientific evidence,
chiefly through biology, physiology, neurology,
though also through history and philosophy,
of the way design impinges on the human being,
leading to wholesomeness or the opposite.

The book of this title will be published by Oxford University Press this February.

The excerpts that follow, several of them slightly abbreviated, record some of the more trenchant observations. They make no attempt to reproduce the full message of a closely reasoned, rounded work.



"In a Gothic cathedral, air currents are forced into patterns by the shape of the enclosure and location of air vents which one can see by watching the endlessly self-repeating forms of drifting incense smoke."



Nature has too long been outraged by design of nose rings, corsets and foul-aired subways. What we here call nature comprises all the requirements and characteristics of live organisms. In human design, we could conceivably see organic evolution continued, and extending into a man-shaped future. Though the toxic trash piles of our neglects and misdeeds, old and fresh, surround us in our physical environment, yet organically oriented design could, we hope, combat the chance character of the surrounding scene. This setting of ours is all-powerful; it comprises everything man-made to supply man.

A great deal of what has been vaguely called beauty will be involved in our proposed new and watchful scrutiny of manmade environment. It will come into question perhaps far more often than anybody could imagine in our present drab disorder. But the sort of beauty we speak of will rest on less precarious grounds of defense. Designers will recognize that gradually but surely they must give their proposals and compositions a more solid underpinning in scientific physiology to replace mere speculative conversation or sales talk.

An eternal residuum of mystery may remain always in trying to explain what is beautiful, and yet the realm of research, testing and provability increases from day to day.

Is planning really possible?

Can we really plan anything or are we only laboring under an illusion that we can?

The concept "man-made" is one which has been endlessly questioned by suspecting philosophers as well as by simply faithful men of religion.

The religious thought of ancient India strikingly expresses the idea that man is not separable from the world at large, and he therefore cannot act upon it.

Even the great St. Augustine himself may have been somewhat undecided; otherwise how were people actually able for one and a half thousand years to quote his words on both sides?

The Reformation, with the bitter determinist Calvin in the lead—as well as the Thomists, the Dominicans and later the Jansenists within the mother church itself—developed considerable wrath against men of action by plan such as Ignatius of Loyola. This vigorous saint and exemplary organizer gathered careful and systematic knowledge of conditioning and remolding minds—a core problem of design. His order had a large tool chest that contained, among other tools, rich expressive art and architecture.

Turning from religion to science, we may go to Erwin Schroe-

dinger, a great man of contemporary physics. We find that he turns a double somersault: he declares against, for, and again against free will. He ends saying that "we," in a philosophical analysis, cannot do anything about "it."

Well, perhaps we cannot, but we must!

Art progresses unevenly, and the human mind stays in compartments

Architecture was slow in joining the movement of "naturalism" begun by the eighteenth-century philosophers and continued so valiantly by the literary men of the nineteenth century, which led to modern science.

By now, though science progresses at an uneven pace, retardation is only temporary, for all the sciences have become interrelated, and none may stay far behind the others.

By contrast, human habits tend to remain divided into tight compartments. A portrait of Voltaire in his elaborately curled wig attests an amusing contrast between attire and conviction. And later on Émil Zola, the great naturalistic writer, the friend of Cézanne and of the radical plein-aire school of painting (which opened up such new concepts of space), worked in a study encumbered with antiques and slept in a Louis XIII bed, in an airtight compartment where he died of suffocation.

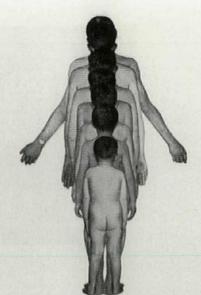
How performance guarantees came to replace old "quality" ideas

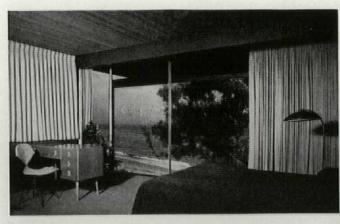
For the Parthenon, material specifications had been short and simple, mainly marble quarried in the neighborhood. Today's builder and designer no longer employ raw materials but a long list of end products, quarried out of ads and catalogues.

Today, apart from specialists, nobody in building knows how billet steel is best made. Goods are bought by phone. Common knowledge of materials in the old sense is gone; it is far too involved for the ordinary client or his attorney, the architect. In all fields quality specifications have yielded to performance specifications—a description of performance capacity and operational objective. The buyer of an automobile seldom knows what is under the hood, nor does he hire an expert to find out. What he asks about besides retail price is the mileage per gallon of gas, the endurance record of the particular make, and how soon major repair bills may begin pouring in. What is actually given him is a performance guarantee. All incidental "quality" talk is recognized as vague sales talk. Thus industrial technology has begun to flavor all concepts from security to beauty.



Photos: (above) Don Pittman; (right) Julius Shulman





One little piece of environment affects thousands of nerve endings in correlation: a view, sounds, temperatures, odors, gravity, resilience, all register on one another.

Time implies growth. A youngster is not one item but a "serial structure in space-time"

Time-spans affect design. "A billboard, a book, a tombstone—each has a different amortization period implying different standards of typography."

Quality was once aristocratic-but no longer

The purchasing power of modern masses tops the Chinese emperor. In the past, excellence largely meant singularity or uniqueness, as in some silken handkerchief or lacquer especially worked by an outstanding craftsman for the emperor. But now the axiom "quality means rarity" becomes meaningless. Some new quality goods, such as electric bulbs, became so "excellent" that they migrated to dime stores where vast quantities were sold daily.

The electric bulb, in its uses and appearance, would have astounded ancient connoisseurs of Chinese silk or lacquer. Its metal filament is fine beyond comprehension, developed in hundreds of laboratories, requiring preliminary investment beyond any individual regardless of his financial status. A market composed of a billion-a-day users has brought into existence this new type of quality, difficult to understand in itself, but fully appreciated in a standard performance.

It was the organized quantity buyer, not the consumer, who first awakened to the new requirements. First the great American railway companies, later the government, learned to lay down standard specifications always focused on performance.

Magic yields to decoration, but conviction dies

As functional perfection in design grows, extrafunctional supplementation seems to decrease proportionately. Here emerges a psychological law of human production.

Yet early rituals, now unneeded, survive as decoration. Heat can now be turned on with a button but fireplaces remain. Ornamentation cannot be rationally invented and applied in cold blood, and current arbitrary decoration lacks the initial emotional impetus, the authentic purpose, of gratifying a deep primordial urge to fulfill a magic ritual. Unlike the ancient sage of ornamental wisdom, his feeble descendant, the decorationist of today, seems to die young; certainly his creations are short-lived.

In discussing decoration we encounter the fear of emptiness

The blank often makes us shudder, a mental horror vacui. Children are fairly impelled to scrawl on a blank wall.

What an undeveloped mind perceives as blankness, however, may strike a more mature mentality not as a vacancy incapable of assimilation but as a meaningful element in a larger composition. An untrained person, for example, may see a wall, an area of color, a piece of plain furniture as an isolated entity,

and rebel against its bareness. A trained person can perceive it as a part of a room and enjoy a juxtaposition or play of contrasts that completely eludes the first observer. To the connoisseur, the over-all composition becomes alive.

The notion that intellectual activity as a component of esthetic response is an undesirable or even harmful adulteration has become untenable. Not indigenous to animals, upper-brain action belongs inevitably to our stage of development and to the human picture of the world.

For our responding nerves, design is always involved in time—from sudden shock to great steadiness of appeal

For example, in humans as in animals, sexual appeal *shocks* into excitement, although it may sometimes come in tiny quanta, as a mere tickle. But by its nature it cannot be continued. Such a primary esthetic appeal can, then, stimulate activity for a limited time only.

This brings us to a general consideration of the time element in esthetic appeal. It is evident that the factor of duration varies according to the neural level on which the stimulus is processed and the response is formed.

The idea of esthetic appeal must be divested of a quality of timelessness or eternity often attributed to it in the past. There are certain basic shapes that have almost constant appeal, coupled with a certain steady mental economy. Other esthetic stimuli operate on a fluctuating sensory level. But all appeals should be graded with respect to their duration or rather the duration of our receptivity to them. Each has a definite amortization period.

A billboard, a book, a tombstone—each has different amortization periods implying different typographic standards. Ladies' apparel may be designed to appeal only for a season. Not so a house whose consumer may have to take 25 years to pay it off.

Time enters design, again, through the life process that is served. One of the fundamentals of design, proportion, has seemed independent of time and also of absolute size. A large or a small design may be judged abstractly by the same standards of proportion. Geometry has held a monopoly on the definition of similarity, the basis of proportion. Yet it would be a vast error to design a tiny elephant house for a mouse. Cold static geometry can never do where life is to be served. In a physiological view there can be no empty, lonely space by itself, but only a spacetime manifold filled with heartbeat and warmth.

Euclidean designers for thousands of years have innocently divided or multiplied by two or four or ten to keep good propor-



"Hermetically sealed air conditioning could rule out nature's perfumes."

"The out-of-plumb confusion of Coney Island's fun house merely exaggerates the way an architect can torture his victims by denying the coordination of nerves and muscles."

tions. Yet even in the majestic boardroom of a national bank, doorknobs and latches cannot grow to ten times their normal size and retain a meaning relative to gripping hands of living beings.

Again the time-bound process of growing poses a design problem. For example, a little boy, like anything else that keeps growing, is not to be thought of as a single item when it comes to design for survival. He is really a series of items-or what is called a "serial structure" in space-time.

There are indeed a thousand ways in which the designer of a home can improve his design if he sees the family group of his client not as a snapshot to be squarely framed and fixed but in that serial perspective of growing and aging. A garden architect cannot look at the plants as if they were fixed in size and mutual relationship.

The designed environment can and does pattern many different sensations

They derive from air currents, heat losses, aromatic exhalations, textures, resiliences and the all-pervading pull of gravity.

The livability of a parlor might be more strongly affected by the smells of upholstery, carpet and draperies than by the visual ornament of imitation Chippendale or Sheraton.

Should hermetical air conditioning prevail, we know there will be no such auxiliary as an uncontrolled breeze from the garden. The monotony of the interior will no longer be helped out with an occasional whiff of nature's perfume, varied as the seasons unroll. Incidentally, it is a significant precedent for constructed environment that gardens at least are sensitively designed on an olfactorial basis too, not only on visual principles.

It should be emphasized that none of our responses occurs truly independently. On the contrary, they are tightly woven together in what is called stereognosis. The stereognostic cross-filing system of our many coordinated senses is a miracle worth study.

Many new wonders of stereognosis have been developed for entertainment

The architect who designed the out-of-plumb confusion of Coney Island, or the "mystery house on confusion hill," had a job differing only by exaggeration from the job every architect has. In normal houses he may be innocent by sheer ignorance of the powers he wields over his victims, but in the mystery house he turns into a calculating torturer. The amount of disharmony that can be wreaked by denying stereognostic coordination shows how important such coordination of the different senses is.



Ownership means control

There are countless kinds of control and belonging, with unlimited shadings, ranging from the kind exercised by an entire community, to the one of Mr. and Mrs. Jones, or that of Louis XIV who was France. They have grown with and through the body of architectural production of all times and completely permeate it.

Louis XIV did own Versailles, because he actually and truly expressed in that project his will and requirements. The American pioneer owned his humble cabin in much the same way.

In contrast to this there is the home ownership of a person who has the limited choice of a 50' lot in a standard, previously established subdivision. He has to have his house built from standardized marketable materials, with plans approved by the building department, and an appearance dictated by the bank appraiser and the insurance agency, all of whom are already considering a resale after the owner's anticipated default and eviction. Such home ownership has indeed shrunk to an almost empty verbal symbol. An owner of this sort merely acquires the privilege of carrying capital charges and amortization over 20 years, and under the mute proviso that the owner's self-expression be kept negligible, that he conform strictly to the financial guardians' idea of standard remarketing and ready repossession.

The problem of design acceptance is basic for people

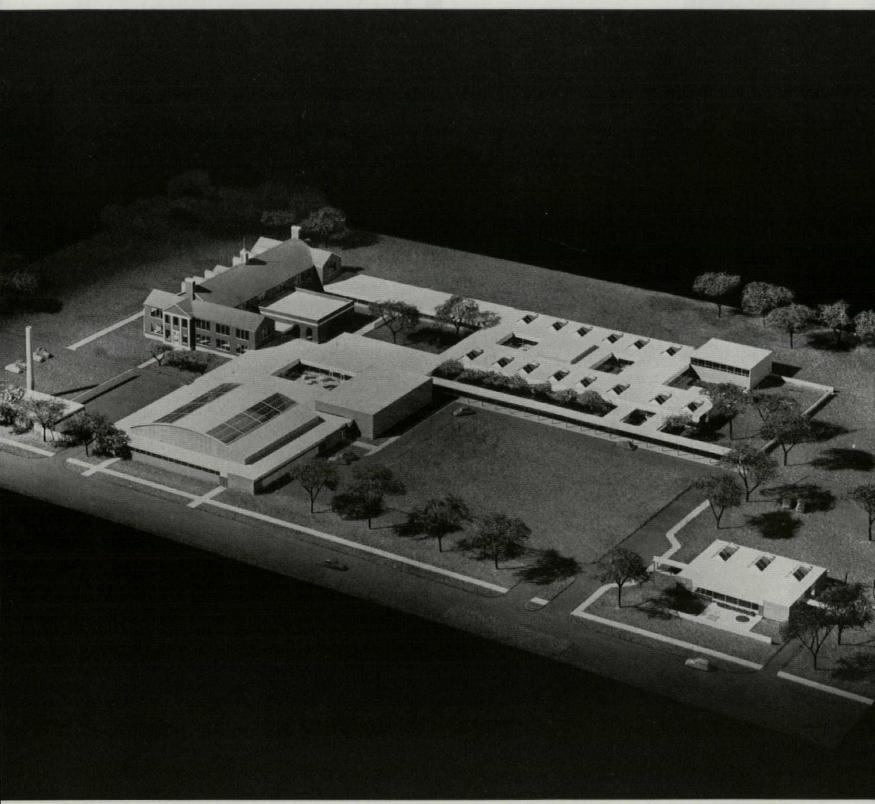
It is foreign to evolution in nature. Nevertheless, natural laws do govern what minds can assimilate.

A new habituation, a new streamlining into the nervous system, must be the first objective of any pioneering in design, or in design acceptance. It has been shown that inventions, obviously operational, do not convince in themselves. Yet revulsion and rejection may testify more against injudicious methods of introduction than against the design itself. All its chances lie in happy integration and assimilation.

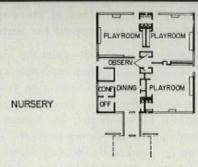
Bankers, for example, have been characterized as men who "regard research as most dangerous and a thing that makes banking hazardous due to the rapid changes it brings about in industry.' Bankers, seen at close range, simply partake in a common human denominator. Although "men of facts and figures," they too are prompted by their emotions and by the craving to have their lives simplified and prolonged by a nervous economy that flows most easily from the status quo.

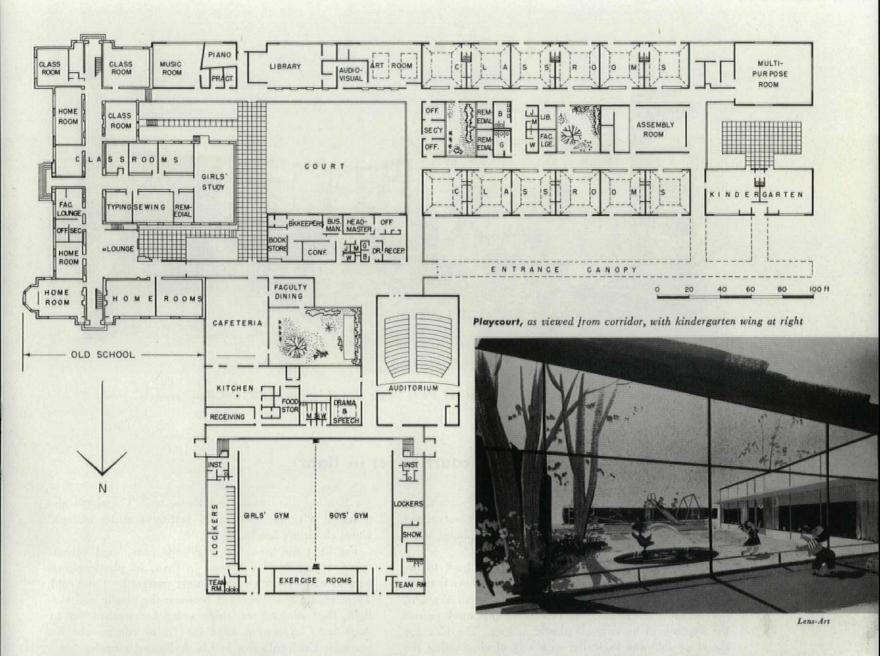
The pioneering designer, therefore, will always have to engage in a series of steps rather than in just one design, or disclose its features gradually, and not in one stroke.

LEINWEBER, YAMASAKI & HELLMUTH, architects
RICHARD H. McCLURG, structural engineer
WILLIAM BROWN, consulting engineer
BOLT, BERANEK & NEWMAN, acoustical consultants
O. W. BURKE CO., general contractor



Zoned scheme gives elementary school an almost separate new building (right center in model); uses remodeled interior of old building for upper school, with girls' classes on first floor, boys' on second; places common facilities—gym, auditorium, dining, administration, art, music, library—between. Nursery school is separate (right); woodworking and mechanical shops are in boiler-garage building (left foreground).





School is built around courts to zone 13 grades

DETROIT UNIVERSITY SCHOOL AND GROSSE POINTE COUNTRY DAY SCHOOL

Grosse Pointe Woods, Mich. ▲ 49 classrooms (23 in new buildings.

FEATURES

Complete plant for students aged 3 to 18. A Classroom top lighting built into space-frame truss. A Plastic ceilings.

CONSTRUCTION

Poured concrete foundations.

A Exterior walls, 10" cavity brick and masonry block. A Steel framing. A Roof, poured gypsum decking. A Heating, forced hot water. A Floor panels in nursery and kindergarten.

COST

\$1,296,800 for new construction. ▲ \$17 per sq. ft. This job's three main design problems are common to many schools:

- How to zone a collection of noisy, quiet, common, special and various-age activities.
- 2. How to reduce the scale of a necessarily big and sprawling plant.
- 3. How to add to an old building and make the whole satisfying.

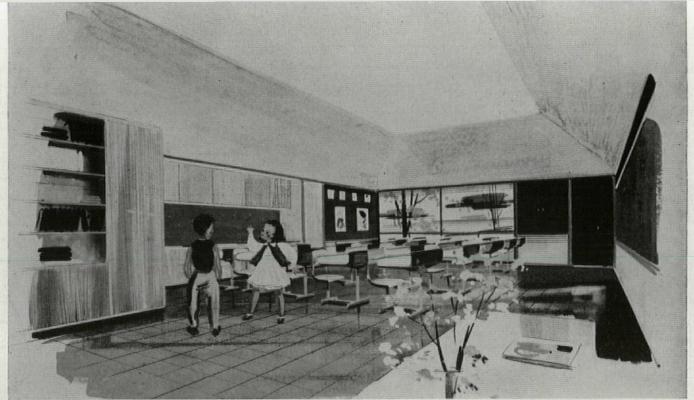
Here these problems turned up in extreme form because this is a cradle-to-college institution and because the addition is so large.

This unusually complete school is for students from the ages of 3 to 18; it embraces everything from nursery dining to high-school motor mechanics. To complicate things still further, most boys' and girls' classes are separate from the sixth grade up, a hangover from the days before two private schools joined forces.

The architects' nice untangling of the program intricacies is set forth in the plan and model on these pages,

The courts, used so adroitly in zoning, are also a chief device for creating the illusion of several smaller, separate buildings.

As for the old and new, the architects pointedly contrasted them; the addition neither toadies to the old school nor engulfs it. The result is a clear and attractive statement of a school's growth and change over the years. It says Vitality.



Classroom has sloping ceiling to cut down contrast and glare; line-up of wall features at 7'-2" line abets "open-sky" feeling

. . . and every classroom is built like a court to let in light

Top lighting for this school is so ingeniously worked out and its design idea is so consistent with its construction idea that the details seem to fall into place almost without effort.

Take the sloped ceiling. It actually goes back to the architects' first decision about the top lighting: that the Michigan climate does not warrant an over-all skylight, nor do most school budgets (including this one) permit the expense of an over-all plastic ceiling. The idea for the slope followed logically, as a way of eliminating the dark contrast of a horizontal ceiling against the brightness of the skylight. Truss construction fitted the requirements of ceiling slope and light well as though it had been invented for them.

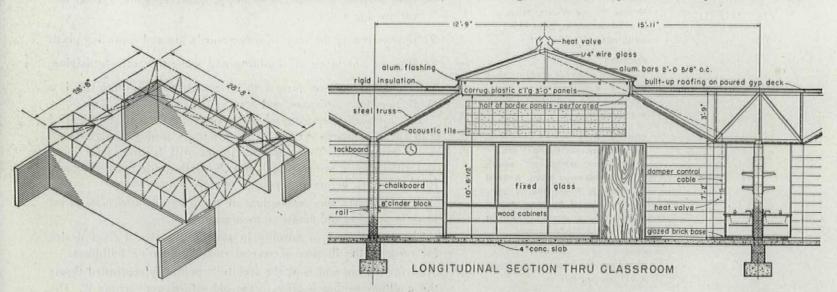
The shape then permitted an orderly definition of all heads of doors, chalkboards, tackboards, etc., at the 7'-2" line; since the windows were for visual satisfaction, not

for lighting, they could end there, too. The shape also provided a simple method of getting acoustic material above children's heads.

For light diffusion, the architects considered various louver types, decided instead in favor of plastic panels because of insulation value against radiant heat and cold. To eliminate heat pocketed between the plastic and skylight, they adopted the ridge ventilator worked out by Architect Clarence A. Caulkins Jr. to combat the hot southern California sun in his skylighted schools.

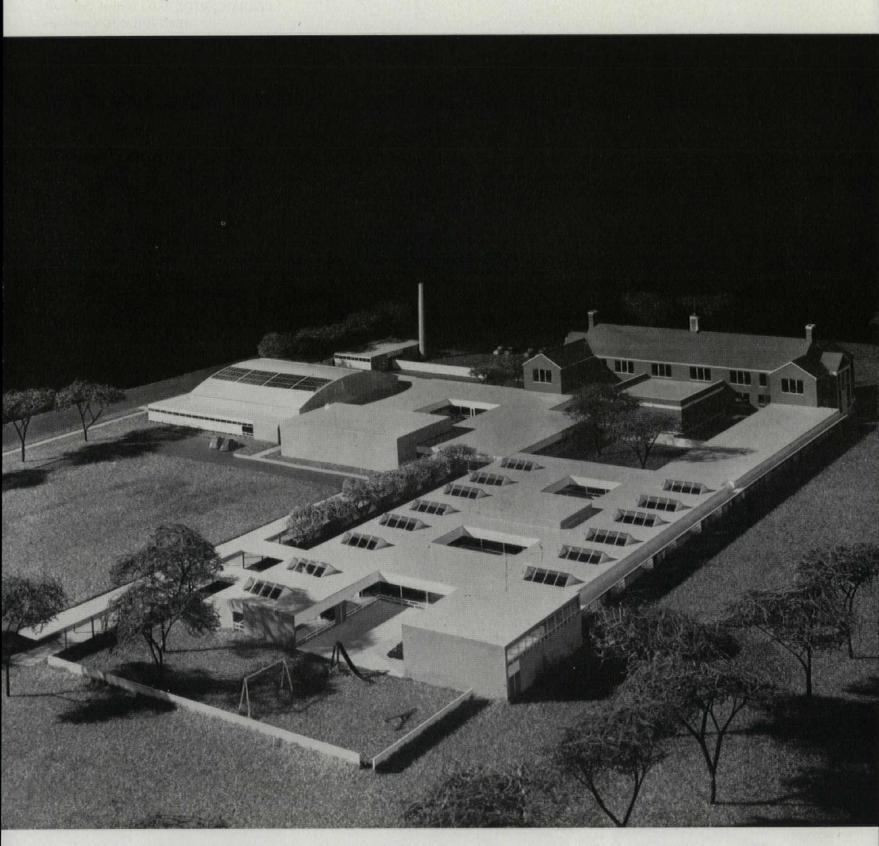
Since the cracks in the ceiling do not provide sufficient air flow for efficient operation of the ventilator, the two end panels of the ceiling are perforated.

Tests indicate that on a bright, sunlit day, the light at desk level will reach 600 or 700 foot-candles. Caulkins (who uses louvers) reports almost as high a reading on a bright California day with no complaints about heat.



Steel truss construction for classrooms was decided on because it seemed a "natural" for sloped ceiling, top-lighted section.

Classroom section: note ridge ventilator, a southern California school idea, now adopted for Michigan.



Skylighted wing of elementary school is structurally a series of rectangular frames supported on masonry walls. Multipurpose rooms (foreground and center) are steel rigid frame. Gymnasium is framed with bowstring trusses and steel columns. Other areas, including corridors, have steel joist framing with 4"-square steel tube columns. Low sidelit classroom corridors (7'-5½" ceiling) and relatively high, courtlike classrooms will offer pleasant contrast.

CHILDREN'S ORTHOPEDIC HOSPITAL, Seattle
YOUNG, RICHARDSON, CARLETON & DETLIE, architects
SCHMIDT, GARDEN & ERIKSON, consultant architects
DeWITT C. GRIFFIN & ASSOCIATES, mechanical engineers
BEVERLY A. TRAVIS & ASSOCIATES, electrical engineers
HERMAN SMITH, M.D., medical consultant
JEAN JOHANSON, sculpture
HOWARD S. WRIGHT & CO., general contractor

Hospital designed to bring cheer to children



Playrooms in nursing units face south, are allocated two to a floor. Interiors were designed from eye-level viewpoint of 3'-6", not a startling idea for a school but an unusual amenity in hospital design for children. Another playroom is on ground floor, linked to gardens.



Photos: Chas. R. Pearson

Ill children's need for cheerful, playful, intimately scaled surroundings is by this time a medical cliché. But US hospital design—in general—still lags badly when it comes to providing these things.

The hospital shown here is noteworthy because its designers let this medical advice sink in. They designed all children's areas of the hospital from an eye level of 3'-6"; for instance, gave playrooms (opp. p.) 2'-6" sills, 9'-9" ceilings; kept decorative materials and furniture in scale, colors gay and varied.

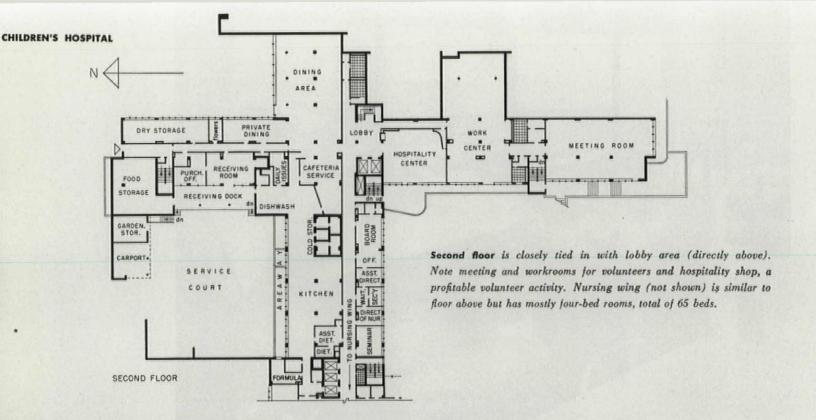
On the exterior they had the odds against them. A 185-bed hospital, pulled together for efficient functioning, is almost by definition massive and repetitive. To reduce apparent scale, the architects used contrasting materials and colors—warm bisque ceramic facing and salmon Roman brick, cool blue porcelain enamel.

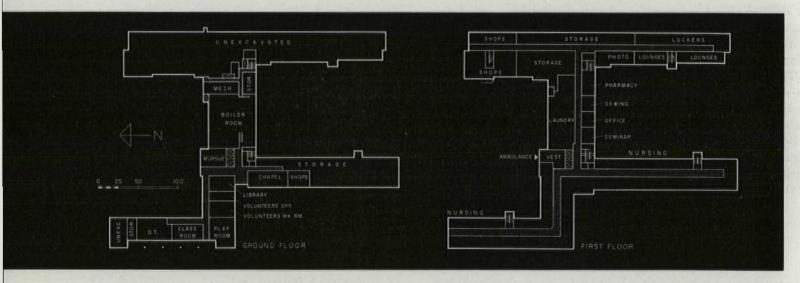
Their efforts to humanize an exterior that turned out visually to be just not very susceptible to humanization were most successful at the one-story entrance level (below), less so from other vantage points.

This hospital and its predecessor have been enormously successful at enlisting the aid and enthusiam of volunteers. Everyone concerned with the hospital is aware of what a priceless asset this is and the value set on it is reflected in the design. Note, for instance, in the plans (on the next page), the pleasantly located roomy areas for volunteer activities.

Entrance Wing was kept one story to reduce scale. Inpatient entrance is in foreground, outpatient in background.







Ground floor of nursing wing has activities that relate to outdoor facilities. Ideal of patient rooms at ground level was impossible because of 185-bed size.

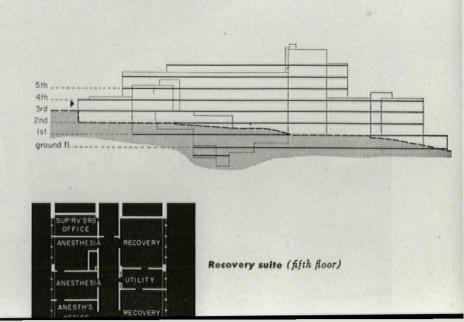
First floor has ambulance and staff entrances. Locker area includes volunteer facilities, convenient to work and meeting rooms above. Nursing wing has 65 beds, mostly in four-bed rooms.

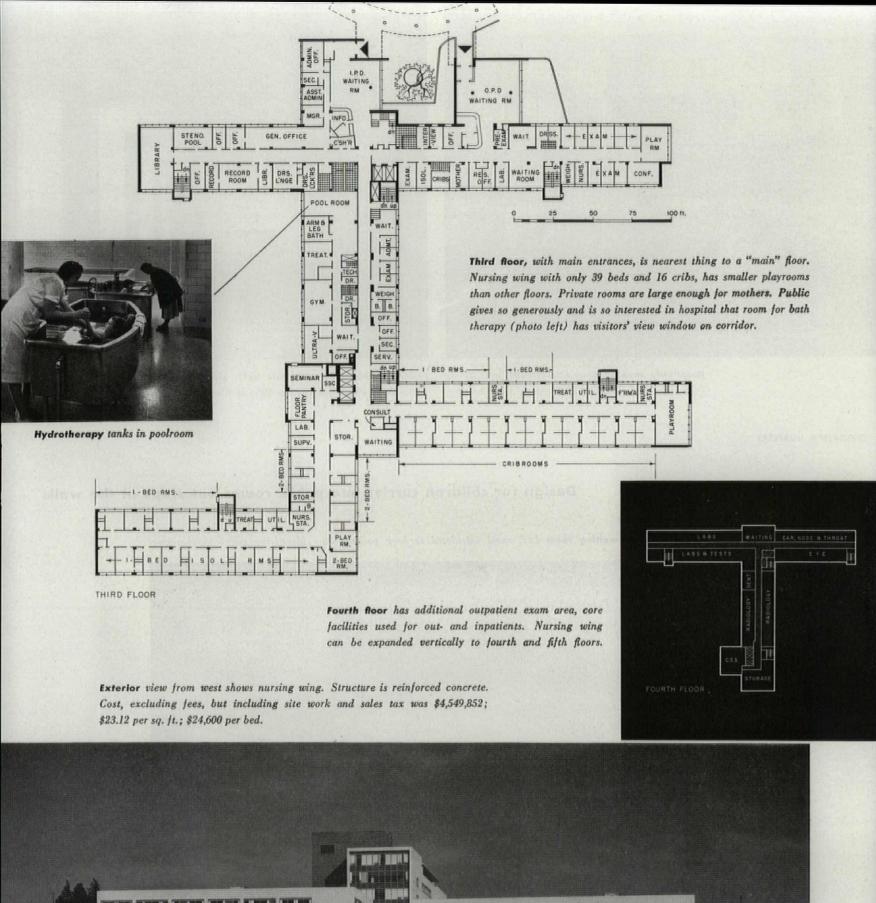
For a sloping site, an unusual plan with the nursing wing dropped down

An increasing number of hospitals are built on slopes because it has become difficult, especially in town, to find flat sites at reasonable cost. Most architects today prefer *some* slope because of the open side this gives service departments. But many new sites, like this one, have a drop equivalent to several stories, which is another matter.

The architects here brought their entrance in at the high point, dropped the nursing wing down; the top nursing floor is on a level with the entrance. The usual first-floor "base" is broken into vertical segments, with medical facilities working upward from the third floor, administration and other public rooms working down.

The fifth floor, which consists of only the center wing, has surgery; sixth floor houses interns.









Hospitality shop off second-floor lobby, near dining Children's chapel has miniature lights shielded by room used by visitors. Shop opens onto balcony.



brass plates which cast stars of light on blue ceiling.

CHILDREN'S HOSPITAL

Design for children carries into public rooms but stops at the walls

Outpatients' waiting room has mural calculated to keep patients busy identifying storybook characters



Photos: (p. 142 and bot. r.) Chas. R. Pearson

Few hospitals for children are so thoughtfully designed as this. Yet this is still "the big institution on the hill"—an essentially alien thing to a child's eye, or to an adult for that matter.

Sun courts, play courts and terraces for ambulatory patients are attempts to link this building with some greater environment. But more than that is needed for children's hospitals. For instance, modern pediatricians keep noting wistfully that hospitalized children—when their health permits it—should have the chance to mingle with well children.

This is a community planning problem but it is also an architectural problem: a hospital plant that is really a little world unto itself, like the one shown here, resists exterior humanization. Until hospitals can be linked to normal life—functionally, and in the eyes of the ill and healthy—humanization will amount mainly to exploiting decoration and interior design, as was so nicely done here.



Spandrels at central block and playrooms (below, left) are 3/8" curtain wall of blue porcelain-enamel steel on aluminum honeycomb core. Architects first experimented with heat-resistant glass spandrels.

Juncture of central wing and nursing wings is used for waiting rooms. Glazed area at left contains playrooms



Overhaul for federal housing policy

- Presidential policy committee suggests sweeping revisions in US aids to residential building, mortgage financing
- Redevelopment would be tied to rehabilitation; 40-year, nothing-down FHA loans proposed on semiwelfare basis

IN THIS MONTH'S NEWS

(see pp. 37 through 54)

Administration readies public works and new tax incentives for building to fight recession it says probably will not need that much fighting

Congress, with paper-thin GOP control and elections upcoming, looks unready to pass much construction legislation

New Buildings: a new monthly roundup of the most significant projects begun across the nation

State building codes gather more headway and New York adopts the second half of the nation's biggest state code

AIA gets into the State Dept. foreign buildings shake-up with a warning on retaining top-flight design for embassies abroad President Eisenhower lifted the veil a little on his housing policy. In his state-of-the-union message to Congress this month, he said: "The details of a program to enlarge and improve the opportunities for our people to acquire good homes will be presented to the Congress by special message on Jan. 25. This program will include: modernization of the home mortgage insurance program of the federal government; redirection of the present system of loans and grants-in-aid to cities for slum clearance and redevelopment; extension of the advantages of insured lending to private credit engaged in the task of rehabilitating obsolete neighborhoods; insurance of long-term mortgage loans with small down payments for low-income families; and, until alternative programs prove more effective, continuation of the public housing program adopted in the Housing Act of 1949. If the individual, the community, the state and federal government will alike apply themselves, every American family can have a decent home."

That was all the President revealed about which of the 50-odd recommendations of his housing policy committee the administration was preparing to adopt as its own. But it was a pretty big mouthful-and by far the most comprehensive comment Dwight Eisenhower had made on housing since he first became a Presidential possibility. It indicated strongly that the GOP high command was ready to endorse most of the suggestions of the 23man housing committee headed by HHFAdministrator Albert M. Cole. These added up to the biggest overhaul of FHA and other government aids to private residential construction in 20 years. A lot of the changes would affect big construction:*

Redevelopment-would be put under an Urban Renewal Administration, beefed-up successor to HHFA's division of slum clearance and redevelopment which would get equal status with FHA and PHA. Redevelopment would be closely tied up with rehabilitation and conservation efforts. Principally, cities would have to present a "workable program" to attack urban decay and prevent its spread through sound planning, law enforcement and repair of salvageable buildings before they could qualify for federal financial aid. (The same prerequisite would be applied to grants for public housing-and the Renewal Administration, not PHA, would decide who met the standard.) FHA Title I redevelopment loans and grants would be broadened to cover rehabilitation and conservation as well as total demolition. A \$5 million fund would be set aside to test new

techniques in slum prevention and cure, and doled out without the customary restrictions. The geographical basis for allocating all redevelopment funds would be altered to make one third available to cities showing the "highest level of performance in a positive, over-all attack on urban decay." A new FHA insurance vehicle, Sec. 220, would be created to provide loans in designated urban renewal areas on terms equal to the most favorable FHA loans in other areas. For multifamily housing in redevelopment and rehabilitation areas, FHA would insure up to 90% of value, or \$2,250 per room, and up to \$2,700 per room for fireproof, elevator buildings. A "broadly representative" private group should be formed to help mobilize public support for the war on slums.

What the housing advisers were trying to do, they said, was to "help cities help themselves" instead of leaning on the federal government for so much of the job. The other side of the coin was clearly implied: the government should do little or nohing for cities that evade their own responsibility to battle against slums. Said the committee: "Slums are the product of neglect by our city governments. . . . If we are sincere and realistic about eliminating urban blight, we must get at the causes as well as the symptoms of the trouble. . . . The job will be neither cheap nor easy. . . . [But] a piecemeal attack on slums simply will not work-occasional thrusts at slum pockets in one section of the city will only push slums to other sections unless an effective program exists for attacking the entire problem. . . ."

High-rise apartments—would get higher mortgage limits, in recognition of the fact that today's construction costs make erection of fireproof, elevator apartments virtually impossible under FHA terms in big cities. The committee recommended a 20% increase in the mortgage ceiling. Under Sec. 207 FHA would drop its \$10,000-per-dwelling-unit ceil-

^{*} A complete analysis of the Housing Policy Committee's recommendations, and the full text of the committee's own summary of its plans, appears as a 16-page supplement to January's House & Home. While the limited supply lasts, the supplement will be mailed free to Forum readers who request it. Address: Editorial Service Dept., Architectural Forum, 9 Rockefeller Plaza, New York 20, N.Y.

ing and insure mortgages up to 80% of \$2,500 a room for ordinary construction, or 80% of \$3,000 a room for fire-resistant, elevator buildings. Under Sec. 213, 90% mortgages would be insurable on the same costs, 95% mortgages if half of the co-op purchasers were veterans (instead of the current 65% veterans).

Some eastern builders queried by FORUM thought the new limits looked "very promising"—event for high-cost areas like New York. But they foresaw rents at \$135 a month for four rooms.

HHFA reorganization-would scrap or shift to other agencies all of HHFA's nonhousing activities. First, HHFA would be stripped of all its operating jobs, but HHFAdministrator Cole would get authority he does not now have to give orders to subordinate agencies like PHA, FHA, the new Urban Renewal Administration, and a new Housing Management and Disposition Administration. Housing Management would take over disposition of Lanham Act temporary housing from PHA, as well as the \$80 million worth of public temporary defense housing built for the Korea war. College housing would be shifted to the US Office of Education.

Public Housing-would be permanently tied to rehabilitation efforts (see above) but the present program would be continued, although the committee shied away from suggesting how many units should be built next fiscal year. (PHA has asked for 35,000; Eisenhower seemed likely to approve the figure; Congress seemed likely to trim this to 20,000 or so, as it did last year.) Most significantly, FHA would embark on a two-year experiment with 40-year loans on homes priced up to \$7,600 (\$8,600 in designated high-cost areas). The trial program, Sec. 221, would be offered with only a token down payment of \$200 to cover closing costs. The committee would let FHA issue 85% commitments to builders or owners of rental Sec. 221 units, with provision for converting these temporary loans into permanent 100% loans upon sale to qualified low-income buyers. It contemplated lease-purchase contracts for families who could not meet FHA credit standards, would have Sec. 221 cover both new and reconditioned housing. Families displaced by slum clearance or rehabilitation would get occupancy preference.

Uncertain adoption. Inside the committee, admitted Chairman Cole, the nothing-down, 40-year FHA loan to move private building into the field served by public housing was the most controversial. Some lenders questioned the very idea. Growled Savings & Loaner George Bliss, chairman of the committee's subgroup on housing credit: "There's bound to be serious losses. Why don't we be realistic and allocate such a program to public housing? It has no place under private enterprise. Further, it's misleading Congress." Two other committee recommendations likewise faced a storm of legislative controversy:



SHIRT-SLEEVE SESSIONS hammered out the final housing policy report—a 287-page document that weighed 2 lb. 10 oz. Pictured (clockwise): Rodney Lockwood, Miles L. Colean, George Bliss, Alexander Summer, James W. Rouse, Chairman Al Cole (HHFAdministrator), William J. Gray, Benjamin Fischer (CIO pinchhitter), Norman Mason, Ernest J. Bohn.

1. A proposal to keep FHA and VA interest rates in step with the fluctuating money market by letting a committee of government brass take over actual setting of the interest rates, subject to a ceiling of 2½% above the going average yield on outstanding government obligations of 15 years or more. This might mean 5½% in today's market. Labor and public housing groups would try to kill the plan. Yet without it, FHA and VA housing programs would remain as exposed as ever to periodic mortgage trouble.

2. A plan to scrap Federal National Mortgage Assn. and replace it with a privately financed National Mortgage Marketing Corp. Homebuilders charged this plan—hatched by savings and loan interests—would not work, and therefore that there would be virtually no money available for the proposed Sec. 220 and 221 loans which were cornerstones of the Republican-style housing policy.

Within the inevitable framework of trade prejudices, the housing advisors had done a remarkable disinterested job of pruning away dead wood, forging sharper tools for widely accepted goals like slum clearance, better housing for the poor, and a more even flow of mortgage money to keep the \$11 billion housing industry from wasteful fits and starts. But in an election year when Republicans scarcely controlled the Congress, the chances for the ideas to come to grief on Capitol Hill were large indeed.

Industry urges Commerce Dept. to rebuild its statistics work; Sec'y Weeks agrees to try

During the Korean war build-up, the Commerce Dept.'s construction division was whittled down to a shadow. Most of its people shifted to emergency agencies. When the emergency activities ended, they did not come back. And appropriations for the division remained at starvation level. The situation hits the building industry at its weakest spot: statistics. Commerce compiles the nation's basic data on nonresidential construction (commercial, industrial, public utility) while the Bureau of Labor Statistics gathers data on residential and public building.

Plea for help. Last month, 17 building leaders explained the sad shape of industry statistics to Commerce Secretary Weeks and Ass't. Secretary Lothair Teetor. Some of the pressing needs:

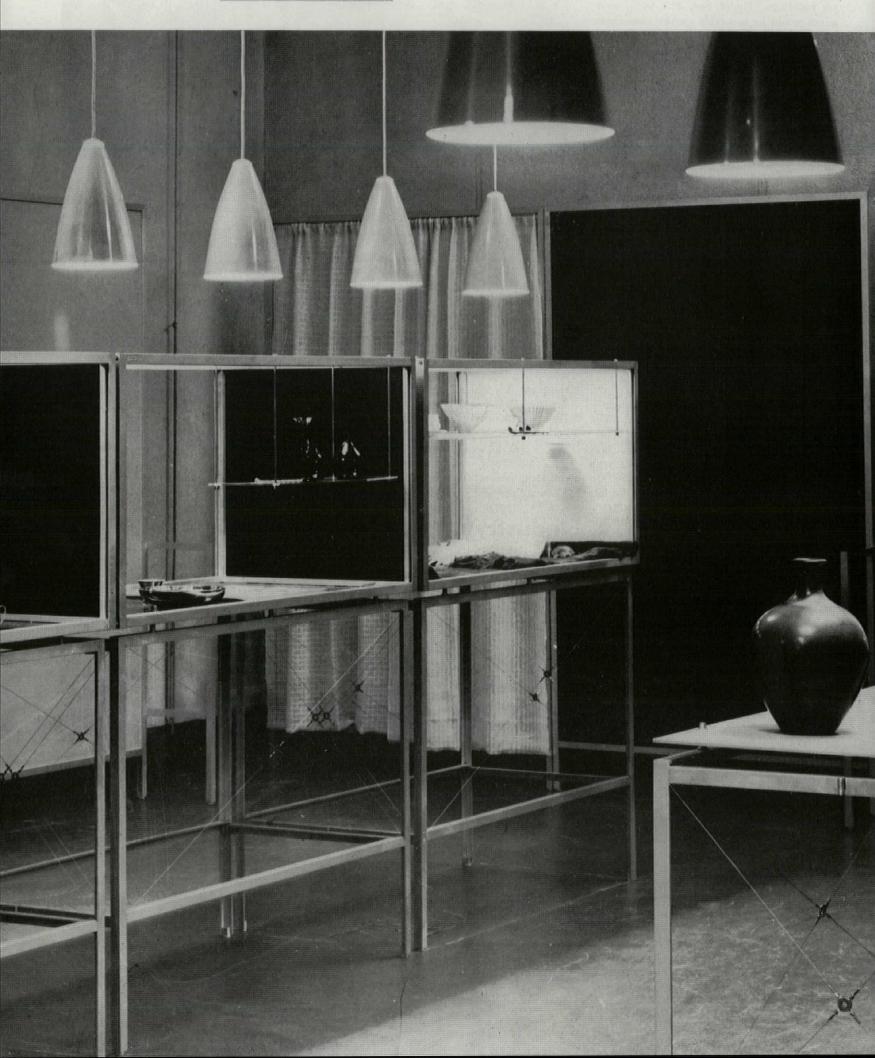
- A reliable inventory of the nation's real property.
- A housing index based on selling price.
- Basic data on volume of realty sales and demolitions.
- ▶ Analytical studies to find out items such as trends in office or hotel building, economic dissections of shopping centers. There is a dearth of information, for instance, on the proper ratio between parking-space require-

ments and sales volume of retail outlets. "Because of the absence of sufficient information in construction economics," said an official Commerce account of the meeting, "many ill-advised investments have been made in construction of both residential and commercial properties."

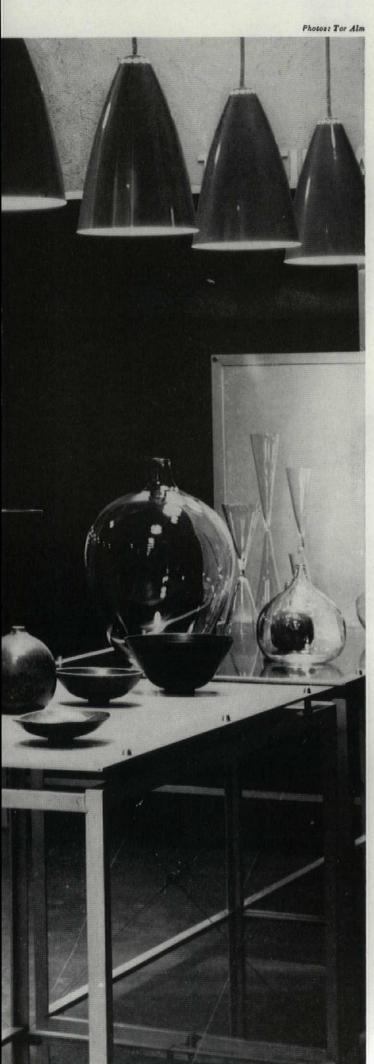
A try for funds. Weeks and Teetor listened sympathetically, promised to ask for more money for their construction division next fiscal year-specifically, a boost from \$60,000 to \$208,505 to permit the staff to grow from seven to an ultimate 31. Building men at the meeting said Commerce officials were fairly optimistic about getting the Budget Bureau to approve the increases. Whether Congress would agree was another question. All told, the Commerce Dept. planned to spend \$1 million more in fiscal 1954-55 on business services, including construction. To convince balky legislators, industry men will probably have to round up a big battery of impressive witnesses to support the idea. One major argument: better statistics would be a big help to state and local governments in promoting rehabilitation and redevelopment of decaying cities. And that was rapidly becoming a No. 1 national objective.



Packing cases unfold into



display cases for traveling exhibit

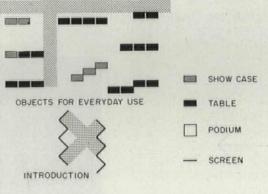


Results: uniformity of display, easy packaging, no storage problems for show of Scandinavian design in 20 US and Canadian museums

These versatile cases are the hit of a Scandinavian design show opening this week at the Virginia Museum of Fine Arts in Richmond. They are at once packing cases to protect the 700-odd objects during transit (they will be shipped to 20 museums during the next two years), and handsome, unobtrusive showcases.

Designed by Danish Architect Erik Herlow, winner of a competition among Scandinavian architects, the ingenious cases will intrigue every designer and businessman who is occasionally faced with the problem of preparing a traveling display: Their flexibility makes this display system adaptable to spaces of almost any shape. Their mechanical simplicity makes special tools unnecessary. Their design simplicity subordinates the cases to the objects they display. Their dual use solves the storage problem (only 13% of the total volume of the exhibit consists of singlepurpose screens and folding bases for tables and showcases). > Their freestanding character makes it unnecessary to fasten anything to the walls, floors or ceiling. Their 1' modular design not only facilitates the integration of display units but also helps squeeze the entire show into two standard US moving vans.

For a description of how these packing cases become display cases, see next page.



PRESENT DAY

FORM AND MATERIAL

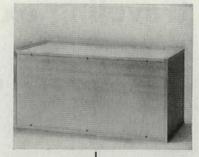
Hypothetical layout (above) of entire "Design in Scandinavia" exhibition shows typical use of all 16 display cases, 63 tables, 51 screens and 30 square pedestals for display of furniture. In picture of exhibit's Denmark preview (left), table top in foreground is side panel from packing case (left, background). Room is lined with 4' x 7' plastic and aluminum panels, also part of show.



Section through packing box panel



Section through aluminum frame of packing-display box



Packing box which will become display case measures 2' x 2' x 4', consists of six laminated plastic panels of various colors faced outside with aluminum and set in an aluminum frame (details, left). Exhibit of 700 items requires 16 such boxes.

Packing-display cases are mounted on folding aluminum bases



Section through angle frame of table base and pedestal

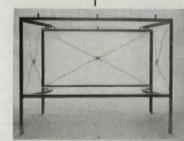
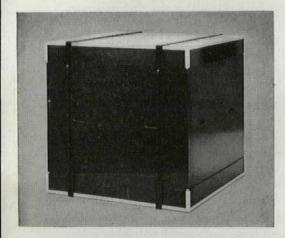
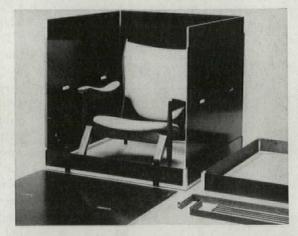


Table base, collapsed for shipment, unfolds to size of display box. Hinges are locked open and frame is crossed-braced with wires and four-way turnbuckles. Each box serves three bases; show thus uses 63 bases. Frame is aluminum.

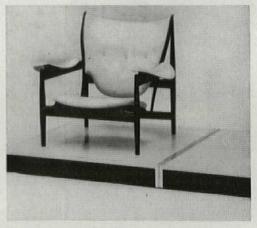
Furniture crates become display pedestals



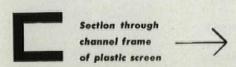
Furniture crate consists of four side panels of laminated plastic, capped top and bottom with shallow boxes used for display.



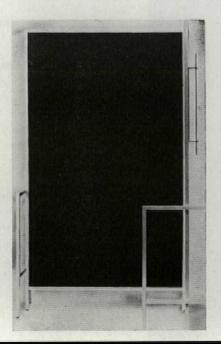
Half open, container reveals chair strapped to base for shipment. Iron brackets and bolts in foreground, which hold container together, must be stored during exhibit.



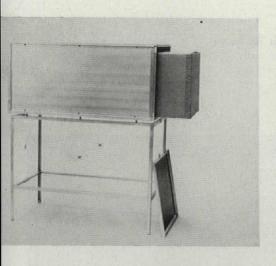
On display, chair rests on inverted base of its container. Top rests alongside as display pedestal for another piece of furniture.



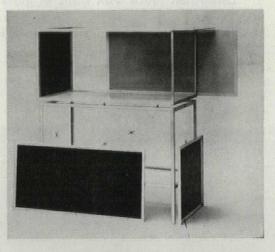
Plastic screens subdivide exhibit



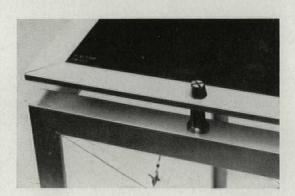
Screens of laminated plastic 51 required for exhibit) are used as space dividers, backdrops for displays, racks for display of fabrics and to carry shelves for display of small objects. They are framed with aluminum channels and supported by one another or by smaller aluminum frames attached perpendicularly to the screens.



Inside container of corrugated cardboard houses objects to be displayed on three adjoining tables. Contents are nested in sponge rubber to prevent breakage. Cardboard container is stored during exhibit.

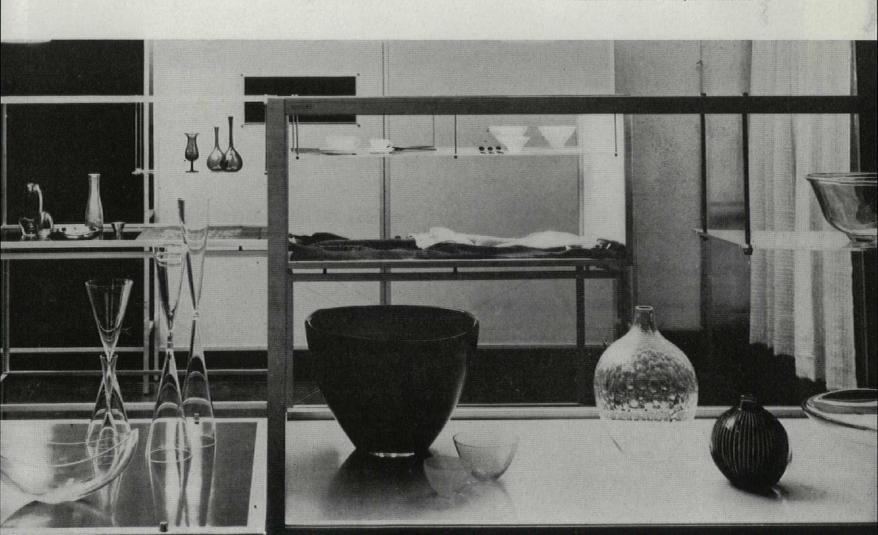


Panels are removed from aluminum frame to form tops of three adjoining display tables. Panels are colored white, gray, black and red. Top of display case is then covered by clear plastic panel; sides by glass panels; end panels of plastic are replaced.



Finished fixtures show glass shelf hung from clear plastic top to carry small items of exhibit. Note that display cases and table tops are mounted about ½" above table bases (by coin-activated screw device, detail left) to preserve nice lines of the framework.

Glass on display in these photos (taken at Danish preview) is part of the actual "Design in Scandinavia" exhibition, which will tour 20 US and Canadian museums this year and next.

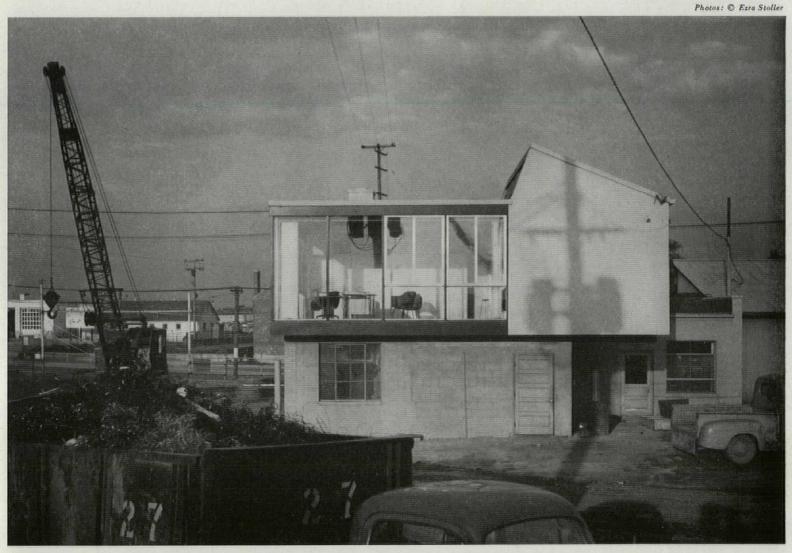


SMALL BUILDINGS

One-room office with walls of glass

Narrow "skyscraper" with a bank in its base

Fire station with built-in action



Perched on top of the weighing house, the boss's office is cantilevered out a few inches to emphasize the difference between the rough routine of the old metal business and the owner's fine touch.

In the chaos of a scrap yard ...

a beautifully ordered office and vantage point

JONES IRON & METAL CO., Dearborn, Mich. LEINWEBER, YAMASAKI & HELLMUTH, architects SHEFMAN CONSTRUCTION CO., general contractors

The US man-made landscape is often described as bearing the mark of a junk dealer. But here, in the twisted steel jungle of a real junk yard, is a hopeful sign of how US industry would like to look and may yet-if it keeps finding architects as understanding as Minoru Yamasaki.

Inside the office the glass wall is shaded against late west sun by vertical cloth blinds. Sash is steel with aluminum sliding windows inserted. Walls are steel studs with stucco on exterior, plaster on interior.







Stylish office is intended for entrataining customers as well as overseeing the operation of the yard, therefore has an inner wall of storage c osets housing bar, radio and library and two outward walls of glass through which can be seen everything that happens in the yard. Floor is black, walls white with natural wood on storage wall. At "living room" end of office are a couch and easy chair, sitting on a red Indian rug.



STANDARD FEDERAL SAVINGS BUILDING, Los Angeles
WELTON BECKET & ASSOCIATES, architects and engineers
C. L. PECK, contractor-engineer
DONALD DOUGLAS, structural engineer



In the base of a narrow office tower . . . an efficient headquarter



This is probably the narrowest little "skyscraper" in the country-39'-10" wide, nine stories high. It is also one of the brightest spots on the dull skyline of downtown Los Angeles, for it is sheathed in blue heat-resisting glass and gray-blue, porcelainenamel steel. Most important for its owner, despite its unusual shape, it is both an efficient and attractive savings and loan office (the first two floors, plus basement dining facilities and roof terrace) and a profitable real estate investment (the upper seven floors are rented at \$4.50 to \$5.25 per sq. ft. on three- to ten-year leases). The "banking" floor is presented on these two pages; the office building, on the following page.

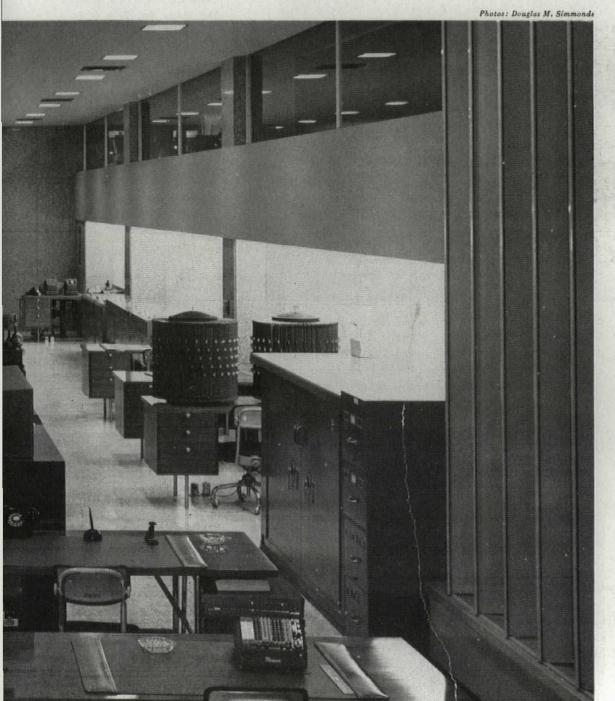


Entrance to banking floor is beneath cantilevered corner of building, features outside planting and, on the inside, a terrazzo and brass mural tracing the history of money, by Margaret Bruton.



Banking floor (left) makes the most of its narrow width by use of only waist-high wood screens, and these are raised off the floor on slim metal legs to enhance the feeling of spaciousness. Clerical area is in foreground; entrance, in background. At right is teller's row; at left, customer conference area. Teller's area is daylighted by high strip windows; clerical area's full-size windows are shaded by vertical louvers (photo above). Floor is terrazzo; ceiling is demountable, perforated metal tile. Furniture is lightly constructed to add to spaciousness.

for modern banking





Photos: Douglas M. Simmonds

Office floors are uninterrupted by columns because the 39'-10" wide building is framed with steel bents. Despite these big deep trusses, the building uses only 12½ lb. of structural steel per sq. ft. of floor area, attributable in part to the use of lightweight plaster for fire-proofing. Upper floors with windows can be subdivided into two rows of private offices 14' and 17' deep by 6-wide central corridor.

Office entrance is at west end of building, far removed from the

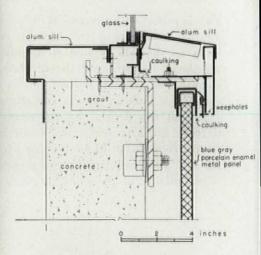
saving and loan association's corner entrance.

Narrow office tower is sheathed in glass and enameled steel

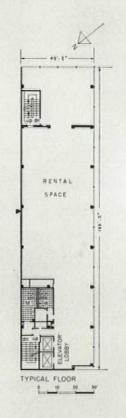


Typical elevator hall

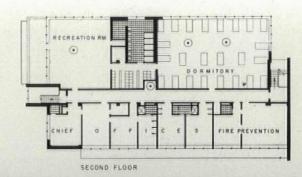




Metal skin consists of thin panels of porcelain enameled steel sheet bonded to a honeycomb aluminum core to hold the sheets flat. Trim is extruded aluminum. Windows are sealed from the outside to protect the air-conditioning system, washed from the outside from a scaffold suspended from the roof and shaded on the inside by vertical metal jalousies.



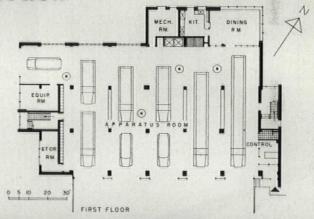
FIRE STATION NO. 1, Toledo, Ohio BELLMAN, GILLETT & RICHARDS, architects GEORGE W. LATHROP & SONS, INC., contractor





fire station designed for display and action

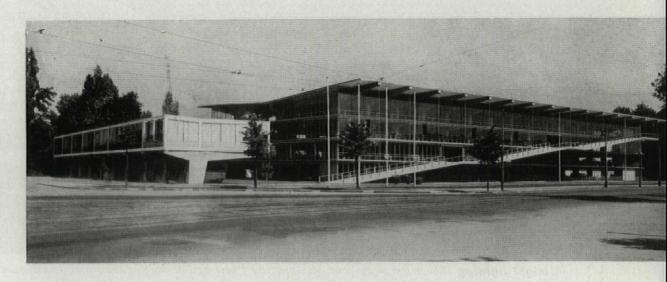
First floor accommodates nine pieces of fire apparatus, plus dining room, kitchen, equipment and storerooms and, next to mechanical room, electrically heated hose-drying closets. Toledo's largest ladder truck, 64' long, controlled depth of building. Glassed overhead doors open simultaneously at push of single button, close automatically two minutes after trucks depart, to conserve heat. Walls are of glazed block for easy maintenance, gray-colored to contrast with fire-engine red. Four brass sliding poles supplement stairs at either end of corridor. Building cost: \$319,000, or \$17.70 per sq. ft.



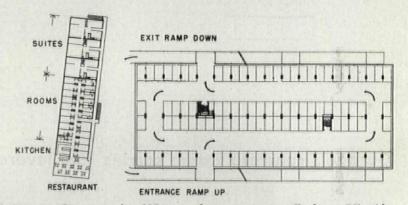




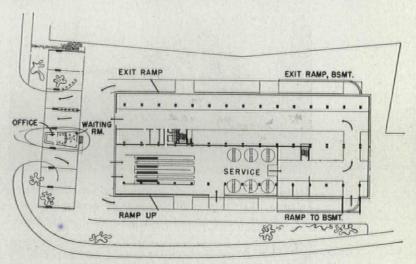
LOCATION, Düsseldorf, Germany PAUL SCHNEIDER-ESLEBEN, architect



Glass'garage hangs its ramps from roof



Typical floor makes room for 105 cars along one-way traffic lanes 23' wide. Motel's upper floor (left) has 20 rooms, three apartments, small restaurant. Garage dimensions, exclusive of 14'-wide ramp, are 119' x 269'. Capacity: 500 cars.



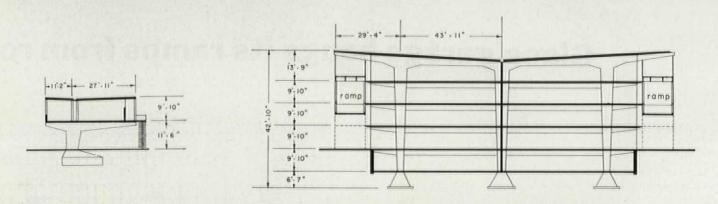
Ground floor of garage is about 35% service area, entered directly from single control lane next to motel office. Elaborate service facilities include vacuum cleaning, regular washing, underside washing, as well as greasing.

Up-ramp of 14.5% gradient is hung from ends of roof beams by slim steel rods. Because walls are glass, drivers have unobstructed view of each floor as they approach its entrance. End of motel (left foreground) displays glass wall of small second-story restaurant.

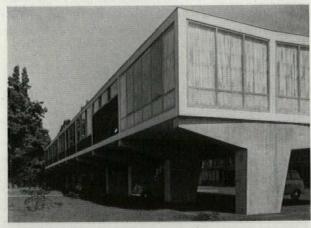
Photos: L. Strelow & Renger-Patzsch



[|] |] | Night lighting silhouettes garage's massive concrete frame against delicate tracery of its glass walls



Garage's concrete frame carries cantilevered floors and suspended outdoor ramps

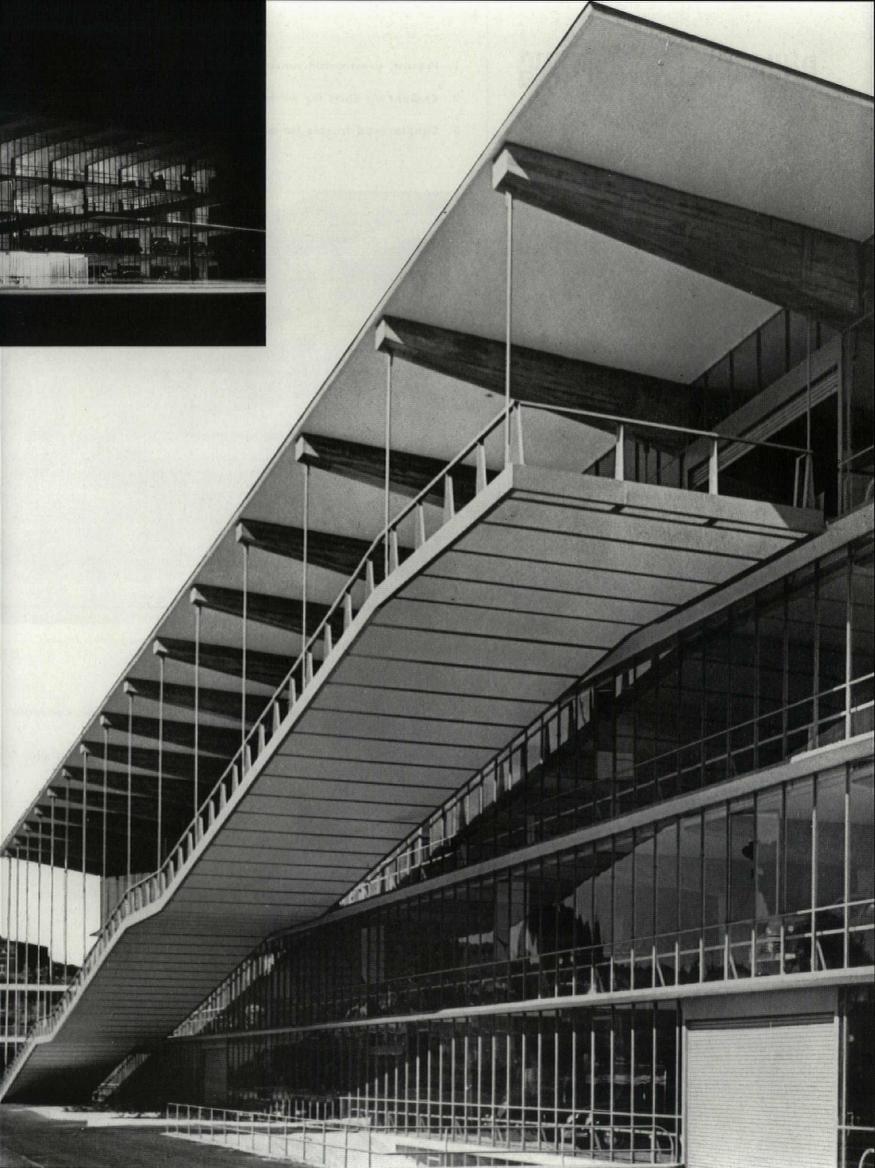


Motel in front of garage is supported on single row of columns, offset to provide clearance for automobiles passing beneath motel to and from garage's flanking ramps.



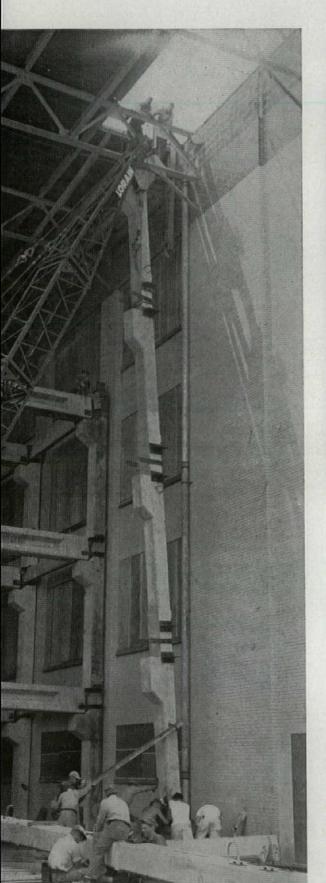
SUSPENSION of outdoor ramp consists of series of 1½2"-diameter steel rods anchored in projecting ends of roof beams and in 7½2" ramp slab. Ramp is 14' wide, has gradient of 14.5% up (14% down). Note ramp down to basement in foreground of photo at right.

Photos: L. Strelow & Renger-Patzsch

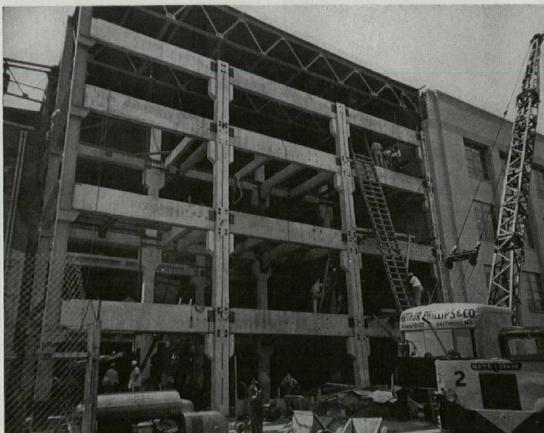


BUILDING ENGINEERING

- 1. Precast, prestressed concrete for multistory buildings
- 2. Radiant air ducts for winter heating and summer cooling
- 3. Cantilevered trusses for economical column-free hangars



Four-story precast columns, weighing 12½ tons, being erected in Glenn L. Martin Co.'s new office building by crane and eight-man crew.



End bay shows prestressed girders in place

1. MULTISTORY PRECAST FRAMING

Prefabrication of 49' precast columns and 30' prestressed girders permits

Here, hidden in a 62' gap between Glenn L. Martin's office and factory buildings near Baltimore, stands the first US application of modern precast framing techniques to multistory construction. It is a 62' x 365' four-story office building that is completely fireproof, fully air conditioned, illuminated throughout by an advanced plastic egg-crate luminous ceiling and yet was designed and built in less than seven months.

Assembled with the ease of heavy timber construction (which precast framing closely resembles), this durable concrete building probably sets a world record for speedy erection. Its 49'-high, 12½-ton columns and 6-ton 30' prestressed girders—a total of 398 units including struts—were precast in seven weeks and erected in

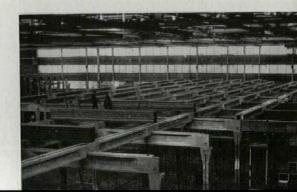
This article was prepared in close consultation with Mr. F. W. Wilcox, plant engineer of the Glenn L. Martin Co.

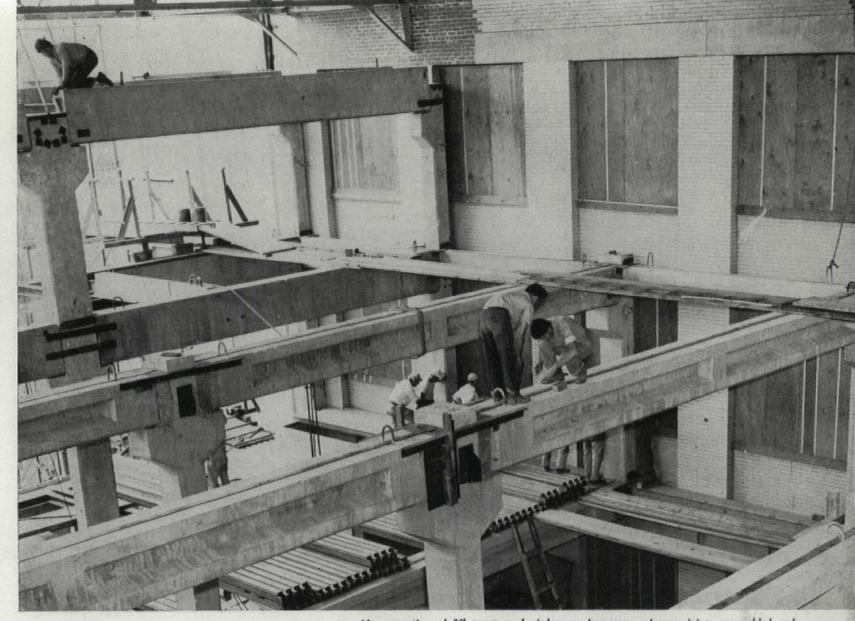
six (including welding and grouting of all joints). All this rapid, prefabricated construction produced a durable, high-quality building at reasonable cost—\$23 per sq. ft. including cellular steel flooring, air conditioning and luminous ceilings.

Precasting vs. cast-in-place

Every architect or engineer using castin-place concrete is somewhat frustrated by the limitations of his material—the high

Precast mezzanine in Martin factory went up so quickly, same technique was used for offices.





After erection of 30' prestressed girders on four-story columns, joints are welded and grouted, then cellular steel deck is welded to steel strip pinned along top of girders.

erection of big four-story office building in 30 days

labor cost of temporary formwork; the lengthy construction schedule that is exposed to all the vagaries of weather; the rigorous supervision needed to ensure that reinforcing is accurately placed and that concrete is properly cured; finally the poor finish that usually has to be hidden from view. Despite these disadvantages and even with expensive construction crews, cast-in-place concrete still appears economical except where speedy construction is vital; then precast concrete takes over.

While precasting has long been used for single-story framing (witness Navy Engineer Amirikian's precast box framing, AF, June '52; Nervi's brilliant work, AF, Nov. '53; and the familiar growth of precast tilt-up construction), it has now got off the ground into the considerably wider field of multistory construction. This is an important advance because only in multistory construction can precast framing achieve its fullest economies. The very

repetition of floor upon floor upon floor permits a maximum reuse of highly efficient, production-line casing equipment for manufacturing the many identical columns, girders and floor beams involved. Thus Glenn L. Martin's new office building is no mere engineering demonstration; it may well be an example of tomorrow's standard concrete practice, one that is paralleled by similar multistory precast framing overseas. For instance:

▶ In Cairo, Egypt, US Engineer Karl P. Billner has built 63 four-story apartment buildings, all framed with precast columns, beams and floor slabs. He uses a vacuum process to speed curing and strengthen the concrete. Reinforcing between framing members is tied together with cast-in-place joints to produce a rigid structure. These methods cut local construction costs by over 20%.

In Geneva, Switzerland, Architect Marc

J. Saugey precast all the columns, main beams and floor joists for a huge ninestory, 180-apartment building.

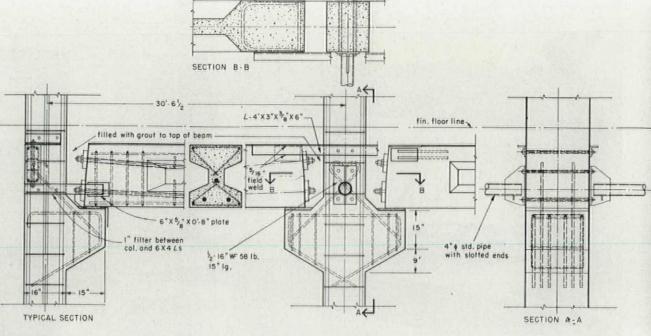
▶ In Helsinki, Finland, Architect Aarne Ervi precast all main girders, secondary beams and floor joists for an eight-story University of Helsinki building. (See illustrations p. 163.)

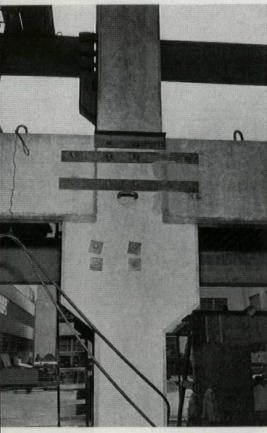
Precasting gets a trial

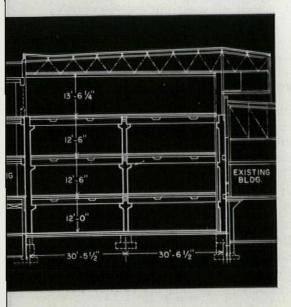
Glenn L. Martin Co. was forced into the precast concrete business. In Nov. '52 Martin engineers, needing more light manufacturing space, decided to build a 300' x 375' mezzanine in one of their existing buildings, a huge factory hall with a 43½'-high roof carried on steel trusses spanning 300' (small photo, left).

Structural steel was the obvious material to use but not even Glenn Martin's priorities could conjure up the necessary steel before July '53 — and the balcony was

Prestressed beams are mounted on ledges cast with columns (right). Steel plates bolted to columns are welded to steel set in end blocks of girders. Joint is then grouted (below). Bottom diagram shows how the precast structure fits between two existing buildings with adjoining walls removed where necessary.







scheduled for completion in April. Cast-inplace reinforced concrete was out of the question because the dirty, wet construction might have had a "catastrophic" effect on highly expensive, precision machinery operating in the basement below.

Ordinary precast concrete beams would have been too heavy for the 5-ton capacity of the overhead cranes available to help erect the new balcony. Therefore the beams were prestressed, bringing their weight down from 9 tons to 5.2 tons. The final solution, worked out by Preload Engineers Inc., was based on precast columns mounted directly over the basement columns and framed with precast, prestressed beams topped with a cellular steel deck. The order to use precast prestressed construction went out on Dec. 1, '52; the mezzanine was occupied May 7, '53.

Following this success of precast construction, Martin engineers decided to adapt the same system to their next task, the four-story office building. This time steel was not even considered; Plant Engineer F. W. Wilcox chose to capitalize on the precasting yard that had been set up within the Martin plant. The new building was therefore designed for precast, prestressed construction right from the start—a prime essential for success with this new framing technique. Their 300' x 325' casting yard was only 400 yards from the site and they possessed all the equipment necessary for transportation and erection.

In addition, they were able to put up the roof first; the two buildings which conveniently flanked the site were spanned with 62' steel trusses, roofed, and thus sheltered the erection of the precast frame beneath.

Design factors in precast framing

Precast concrete requires special design to develop all its potential economies. Until a thesis on multistory precasting appears, Glenn Martin's 62' x 365' office building

Multistory precast framing in Switzerland,

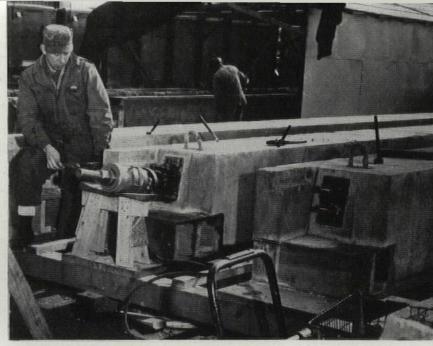
Geneva, nine stories: precast frame of Architect Marc J. Saugey's 180apartment block (below, right) is tied with 2" poured slabs on each floor. Columns (left) are positioned with tower cranes.







Reinforcing steel is prebent to speed installation. Solid prestressing bars, each 11/8" diameter, are sheathed against bond.



Prestressing jacks grip threaded anchorages to tension cold-worked bars. Nut is then tightened and bars are grouted.

might well serve as an interim textbook on the subject. Its chapters would emphasize these design factors:

Rigid framing connections. Since columns and beams are prefabricated separately, and are thus structurally determinate, lateral stiffness is more difficult to achieve than in a monolithic structure. Here the prestressed beams sit upon projections cast in the three- and four-story precast columns. Angle ties, bolted to the columns, are field-welded to anchor plates embedded in the beams' end blocks. Erection clearances at beam ends are grouted to develop compression.

Rigid end bays are given longitudinal stiffness by massive precast crossbeams with haunched ends welded top and bottom between columns. Within the building a combination of precast and 4" steel pipe struts (slotted for easy erection) maintain 16' intervals between bays.

Maximum standardization, large units.

To amortize the high cost of precise formwork, precast construction requires maximum repetition of large units, the size limited only by the transportation and erection facilities available. Martin's longest columns, 49' or four stories high and weighing 12½ tons, are perhaps as large as can be conveniently prefabricated; on taller buildings the columns would need to be cast in sections.

Prefabricated reinforcing. Tack-welded "cages" of reinforcing steel are shop-fabricated for all precast members, saving considerable time in the casting yard.

Simple erection sequence: 1) starting from one end of the building, columns are placed vertically in a cast-in-place concrete socket and temporarily braced with chain falls from the trusses overhead; 2) the prestressed beams are positioned on column seats (atop metal shims to adjust elevation) and struts are placed between columns; 3) after three rows of framing are in position (one day's work) they are lined up, the joints welded, then grouted.

Dry-floor construction. There is little advantage in speeding erection of the frame without similarly speeding follow-up work. This building's 6" cellular steel floors span 16' between beams. To avoid the delay of pouring and curing, the usual concrete slab is replaced with a ½" plywood subfloor glued directly atop the cellular steel.

High-quality concrete and prestressing. Assembly-line precasting facilitates control of mixing, pouring and curing. Leading concrete engineers believe that, by careful grading of aggregates, use of steam curing or the removal of excess water with a vacuum mat, 12,000-psi concrete can be regularly achieved and thus

Egypt and Finland

Cairo, 63 four-story buildings: US Engineer Karl P. Billner and the African Enterprise & Development Co. cut local building costs 20% by precasting all columns, beams and joists for this huge apartment project.

Helsinki, eight stories: Architect Aarne Ervi prestressed main beams and joists during manufacture; secondary beams are prestressed in place to add rigidity. Consulting engineers: U. Varjo; Ostenfeld & Jonson.







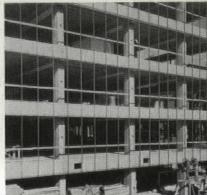
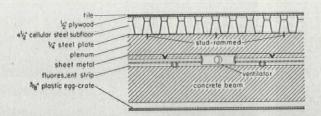


Foto Roos



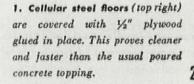
save considerable weight. Glenn Martin's columns are made with 3,000-psi concrete (28-day strength) and the prestressed beams, 4,000 psi. Each beam is prestressed with three 11/8" diameter bars of low-alloy, cold-worked steel (replacing nine 11/8" bars of ordinary mild reinforcing). The high-strength bars (130,000 psi yield strength with 0.7% elongation) are tensioned to 100,000 psi to produce a working stress of 85,000 psi after creep and shrinkage. Ends of the bars are fitted with threaded anchorages which, with bearing nuts acting against plates set in the end blocks, are as strong as the bars themselves. Although the cold-worked steel employs lower working stresses than the usual high-tensile wires (85,000 vs. 120,-000 psi), its low cost at 40¢ per lb. of tensioning steel anchored in place is claimed to be 20% cheaper than conventional prestressing techniques.

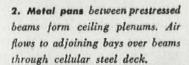
Air conditioning, lighting. Once set, the framing module of a precast building is comparatively inflexible, therefore pipes, conduits and fixtures need to be planned in advance. Glenn Martin's new office is air conditioned by 15 20-ton unit conditioners in a fan gallery hung from the south side of the roof trusses. In every third column bay, supply ducts lead down the south wall to ceiling plenums formed by sheet metal subceilings slung between main beams; the cells of the floor itself carry supply air over the main beams into the plenums of adjoining bays. Adjustable diffusers, designed by Martin engineers, carry supply air into each office space. Return risers in the south wall exhaust the used air on each floor.

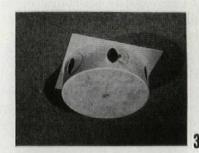
The entire office is covered with plastic egg-crate luminous ceiling delivering 70 foot-candles from fluorescent tubes 30" o.c. The plastic louver panels contain fine, 3%" openings, producing both direct downlight and diffused sidelight; and the plastic panels need little cleaning since the prevailing flow is of fresh air down through the egg-crate panels.

This outstanding building was engineered under the direction of Martin's Plant Engineer F. W. Wilcox and designed by Albert Kahn Associated Architects and Engineers, Paul F. Redding Co. was the contractor. Prestressing, using the British Lee-McCall system, is by Stressteel Corp.

Floor construction contains airconditioning plenum between prestressed beams. Fresh air enters plenum from ducts in south wall, filters down through adjustable metal "hats," then into offices through egg-crate luminous ceilings.



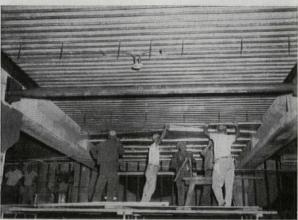


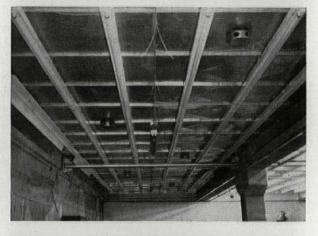


3. Adjustable metal "hats" (above), designed by Glenn L. Martin engineers, control air flow from ceiling plenum into offices.

- 4. Fluorescent tubes spaced 30"
 o.c. give 70 ft-c. of direct light
 at desk height in offices below.
- 5. Plastic egg-crate celling panels give restful, diffused light without reducing direct light through ceiling. They need little cleaning since primary air flow is of filtered air down through ceiling.

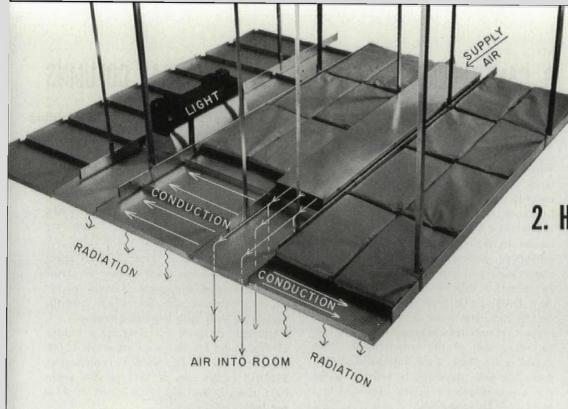


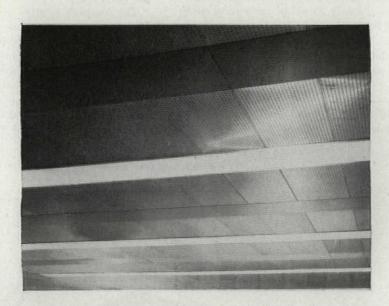




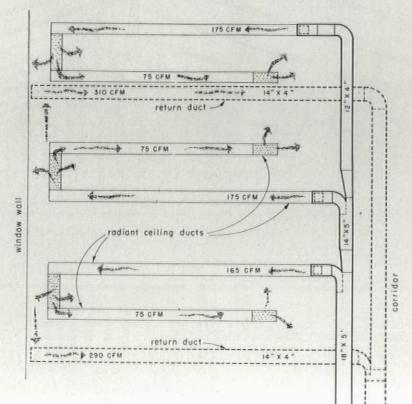








Hospital cellings will look like this: fluorescent lighting troffers alternating with radiant air ducts and separated by acoustic panels. Typical layout (below) shows supply ducts spill out air at windows and at back of room.



2. HOSPITAL AIR CONDITIONING

Acoustical ceiling integrated with radiant panel ducts eliminates piping to save \$75 per bay

A strikingly efficient technique of air cooling and heating is likely to prove cheaper than conventional separate airconditioning and heating systems at the Becklev Memorial Hospital in West Virginia (AF, Aug. '53 et seq.). Air is blown through radiant panel ceiling ducts, then released into the room. This permits the use of wider temperature differentials than usual without discomfort to hospital patients, and thus requires 40% less air (AF, Nov. '51 and June '53). Estimated cost of the aluminum ceiling complete with ducts and acoustic panels is \$2 per sq. ft.; cost of the primary supply and exhaust ducts, fans, 200-ton steam absorption refrigeration equipment, a 600-hp coal boiler plant (which also serves four adjoining buildings), plus all the extra equipment required by a modern hospital, is under \$6 per sq. ft.

Constructed of flat-slab reinforced concrete, the four-story, 113,000 sq. ft. hospital is designed especially for low operating and maintenance costs. Because ducts are easily maintained, air heating is economical and saves \$75 per bay by doing away with pipe risers and furring at the exterior walls.

Air from equipment and fan rooms is delivered at 3,500 fpm through vertical supply stacks with take-offs on each floor, where air speed is reduced to 1,000 fpm. From the corridor ducts, branch ducts lead the air into room ceiling ducts. The top and sides of these ducts are simply aluminum sheets bent into place while the bottom of the duct is the aluminum pan ceiling itself (see photo). The effect is radiant heating (or cooling in summer).

Since the slab above the ceiling is also heated (or cooled), partly by the radiant panels and also by the return ducts, the outside edges of the slab are protected by 4' x 5' insulated porcelain enamel spandrel panels fastened to the slabs.

The Beckley Memorial Hospital is designed by Isadore Rosenfield, architect; John D. Dillon, mechanical and electrical engineer; and Paul Weidlinger, structural engineer.

Welded truss is pin-connected at one end, then joined at mid-point to 85' tie.



Pin-connected joint allows maximum vertical movement of 115' long trues.

3. CANTILEVERS 134' LONG ELIMINATE HANGAR COLUMNS

Suspended roof wings prove 10% cheaper than steel bowstring trusses. Welding

When an engineer is given an impossibly large area to span without supporting columns he often wishes for "sky hooks." When Lockheed Aircraft International asked the Port of New York Authority for a 134' x 420' hangar having one side completely free of supporting columns, the Authority's engineers came up with two such hangars suspended on either side of a two-story office and shop building. Columns project above this central core, are to act as sky hooks for the support of steel trusses cantilevered out 134' on either side of the center frame. Now abuilding at New York International Airport, this bold structure is believed to be the largest suspension system ever used in a building.* Its economies:

It weighs only 20 psf of supporting steel the Port Authority's best previous hangar design, a series of bowstring trusses spanning 140' weighs 21 psf.

Its steel frame cost 10% less than 1952's

* A 70' cantilevered roof was used at the Transcom Lines Terminal, Los Angeles (AF, Mar. '53). bowstring design; while final costs prove even lower, the cantilevered hangar cost only \$11.89 per usable square foot due to its more utilitarian finish, reduction of perimeter walls, cheaper heating equipment and temporary walls for future expansion.

▶ At the same time its clear 32'-high space holds nearly twice as many planes—five large plus three small transports. Because of obstructing columns, only five will fit into the same area built with bowstring trusses.

▶ Although designed for riveting, a welded alternate used 5% less steel, came out \$2,092 cheaper. The bids: welded construction, \$449,018 (1,294 tons at \$347 per ton erected); riveted, \$451,110 (1,367 tons at \$330 per ton).

The hangar's central section, carried on four rows of columns, is topped by heavy 36" horizontal beams cantilevered 18' to each side where they are pin-connected to the inside ends of the 115' suspended trusses. The trusses were shipped in half sections, field-assembled on skids and hoisted by two crawler cranes. In position the peak of each truss hangs by 85' ties (12" w.f., 65 lb.) from columns

Balanced wings are suspended from columns atop central two-story office building



saves another 5% over cost of riveting

projecting 44' above the roof. Loads are transmitted to the ground through a system of ties and compression members. (Interior columns act in tension; exterior columns, in compression.) Framing bents are at 20' intervals, spanned between trusses by lightweight joists and covered (on the top chords of the trusses) with a light-gauge steel deck, woodfiber insulation and a built-up roof.

Thermal expansion of the suspension system is likely to cause considerable vertical anovement at the outside ends of the cantilevered trusses. Further movement is also possible from wind pressure beneath the roof when the hangars are open. This movement, amounting to a maximum of 6", is compensated by a device that closes the gap between guides on the trusses and the motor-driven doors beneath. To adjust truss elevation during erection, screw jacks beneath exterior columns pivot the trusses about their suspension points.

The hangar is designed by the engineers of the Port of New York Authority. Lehigh Structural Steel Co. fabricated and erected the steel and prepared the welded design.

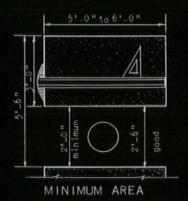
Photos: (top) Wide World; (below) The New York Times



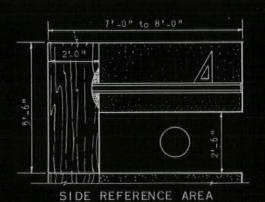
Wilnus columns hangar's roof projects 134', will cover nearly twice as many huge transports as conventional bowstring truss hangar.



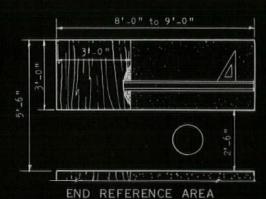
DRAFTING-ROOM LAYOUTS



D'per man	5' board	6' board
work	15 sq. ft.	18 sq.ft.
reference	THE PARTY OF	
total	272 sq.ft.	33 sq. ft.



□' per man	5' board	6' board
work	15 sq.ft.	18 sq.ft.
reference	ll sq.ft.	11 sq. ft.
total	382 sq.ft.	44 sq. ft.



□'per man 5' board 6' board work 15 sq.ft, 18 sq.ft, reference 9 sq.ft, 9 sq.ft, total 44 sq.ft, 495 sq.ft,

26 " min. O 36 " good O 48 * excel O from 16 '-2" to 20 '-0 "

CENTER AISLE SIDE REFERENCE

□'per man 5' board 6' board

minimum	444 20 11.	49 a sq.ft.	
good	46₹ sq.ft.	524 sq.ft.	
excellent	492 sq.ft.	55 sq. ft.	
26" 7' o nin. C 30" good C	, 8' '\)	0	16'-6"

SIDE AISLE CENTRAL REFERENCE

O' per man	5' board	6' board
minimum	50 4 sq.ft.	55d sq.ft.
good	524 sq.ft.	57d sq.ft.
excellent	55 sq.ft.	60½ sq.ft.

DRAFTING UNITS Unit includes table, reference, and sitting areas 26" min. O 30" 900d O 36"

0

SIDE AISLES

board

from 20'_4" to 24'_0"

0

good	57 asq.ft.		sq.ft	
excellent	60½ sq.ft.	66 s	q, ft	
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				-
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1	36"			
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	0-20° to ta			
1	rom 15'-8"			
	to 17'.6"			

SIDE AISLE WITH STORAGE AREA

□'per man	5' board	6' board
minimum	864sq.ft.	914 sq. ft.
good	88 sq. ft.	93½ sq. ft.
excellent	90 d sq.ft.	962 sq. ft.

COMPARATIVE DRAFTING AREAS

26 "	
O	0
O Just	0
O 48"	0
from 18	1-2"

CENTER AISLE END REFERENCE

□' per man	5' board	6' board
minimum	55 sq. ft.	61 sq.ft.
good	57å sq.ft	634 sq.ft.
excellent	60½ sq.ft.	66 sq.ft.

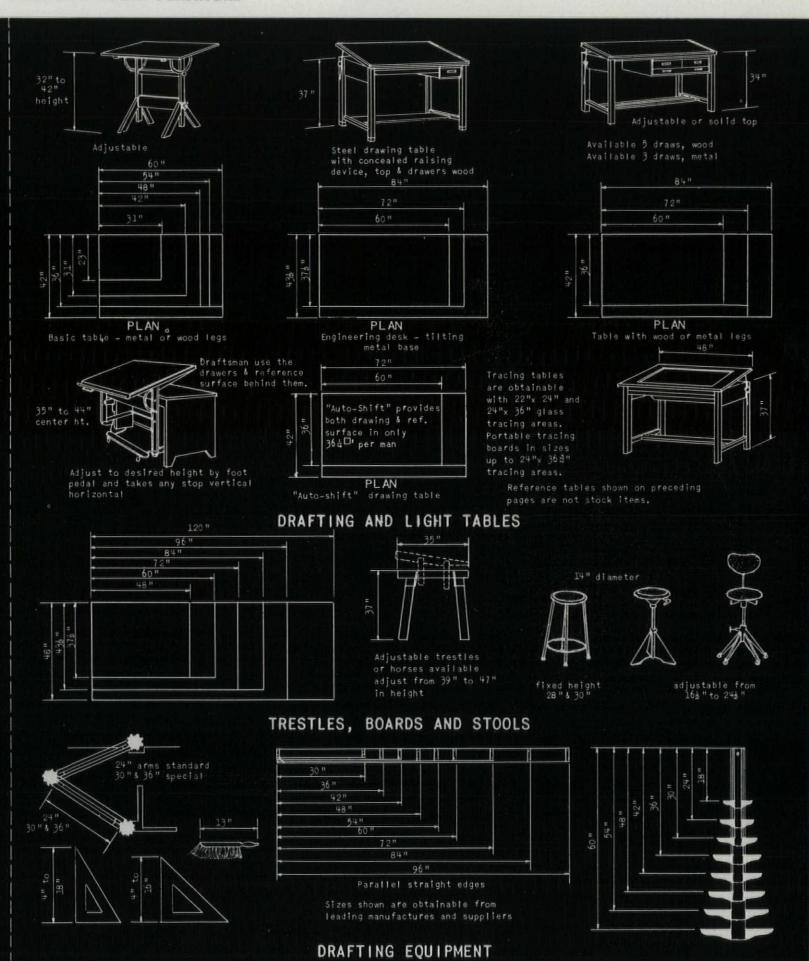
Dimensions shown are based on the use of 3'x 5' and 3'x 6' drafting tables. If larger tables are used they will replace reference areas and the total areas will not increase. Provide one large table

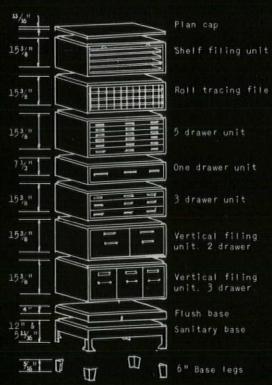
for detailing, reference and wrapping.

The draftsman requires 80 to 100 foot candles of light on his board or approximately 6 watts per square foot. Avoid sharp contrasts of light in drafting room. The board illumination should never be more than seven times as bright as the surroundings. Fluorescent trough fixtures are most practical when hung diagonally to tables.

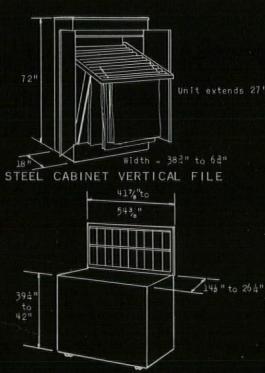
For the medium sized architectural drafting office 100 square feet per man is ideal. This includes areas for drafting, reference, plan storage, aisle and supply. Reception, office, conference, and wash rooms are not included

DRAFTING-ROOM FURNITURE

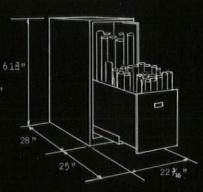




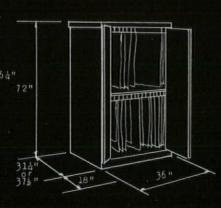
depth = 28½" to 44½" Width = 401½" to 55½" draws extend from 26" to 42"
"PLAN-FILE" Steel or wood



VERTICAL PLAN FILE



VERTICAL FILE



CLIP FILE



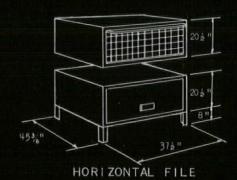
ADJUSTABLE SIEEL SHELVING *available in 11½ " & 15" widths



TRANSPARENT PLASTIC STORAGE TUBE 2" dia., 13" to 55" long



METAL STORAGE TUBE



FILING AND STORAGE EQUIPMENT



Photocopy machines (photographic method)



Spirit, gelatin and Photocopy duplicating machines are valuable for 8½"x 11" copy.



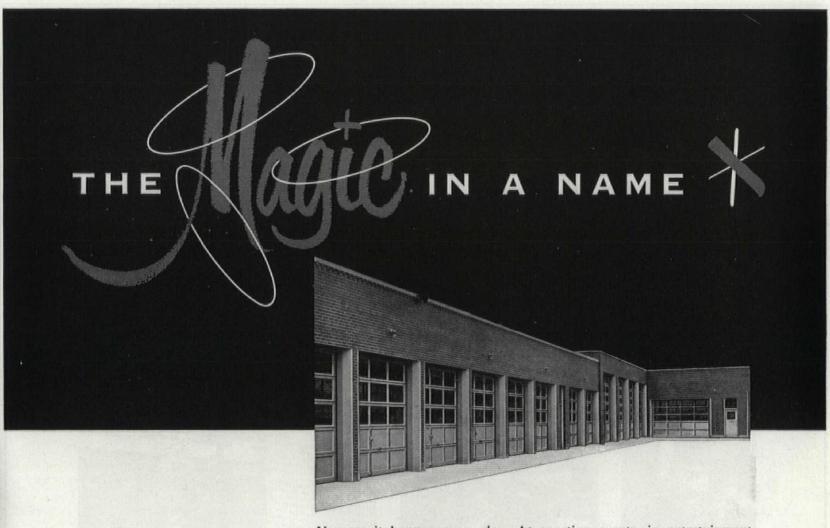
The process used determines the requirements of space light, plumbing, and ventilation

REPRODUCTION EQUIPMENT

For reproduction of tracings a printing and developing unit is necessary. The printer is located above the developing unit. With the two units and the proper chemicals and paper, blueprints, black and whites, bluelines, and other types of copy are possible.

When choosing equipment the individual requirements of the office determine the size and type of process.

These machines should be ventilated for heat and chemical fumes. The 42" machine is the most used in medium sized offices today.



You see it happen every day. At sporting events, in entertainment circles, in any field whatever . . . some names are sheer magic. They're the names of the leaders, the star performers . . . the names that draw the crowds like a powerful magnet.

And that's the way it is with products, too!

Over the years, the name RO-WAY on overhead type doors has meant advanced design, skilled engineering, fine quality, top performance . . . solid value through and through.

Today's Ro-Way doors—commercial, industrial and residential—are the finest ever. With such outstanding features as Taper-Tite track and Seal-A-Matic hinges, ball bearing Double-Thick tread rollers, and Power-Metered springs individually matched to the weight of each door . . . smooth, easy up-and-down operation is assured.

With Ro-Way sections rabbeted for weather-tight joints . . . muntins, rails and stiles precision-squared . . . mortise and tenon joints both glued and steel doweled . . . heavy gauge hardware both Parkerized and painted . . . long life is a certainty.

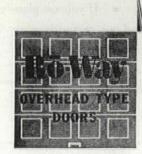
These are the reasons why Ro-Way is America's most wanted overhead type door. And that's the magic in the RO-WAY name.

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Nationwide sales and installation service.

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FOR EVERY DOORWAY!

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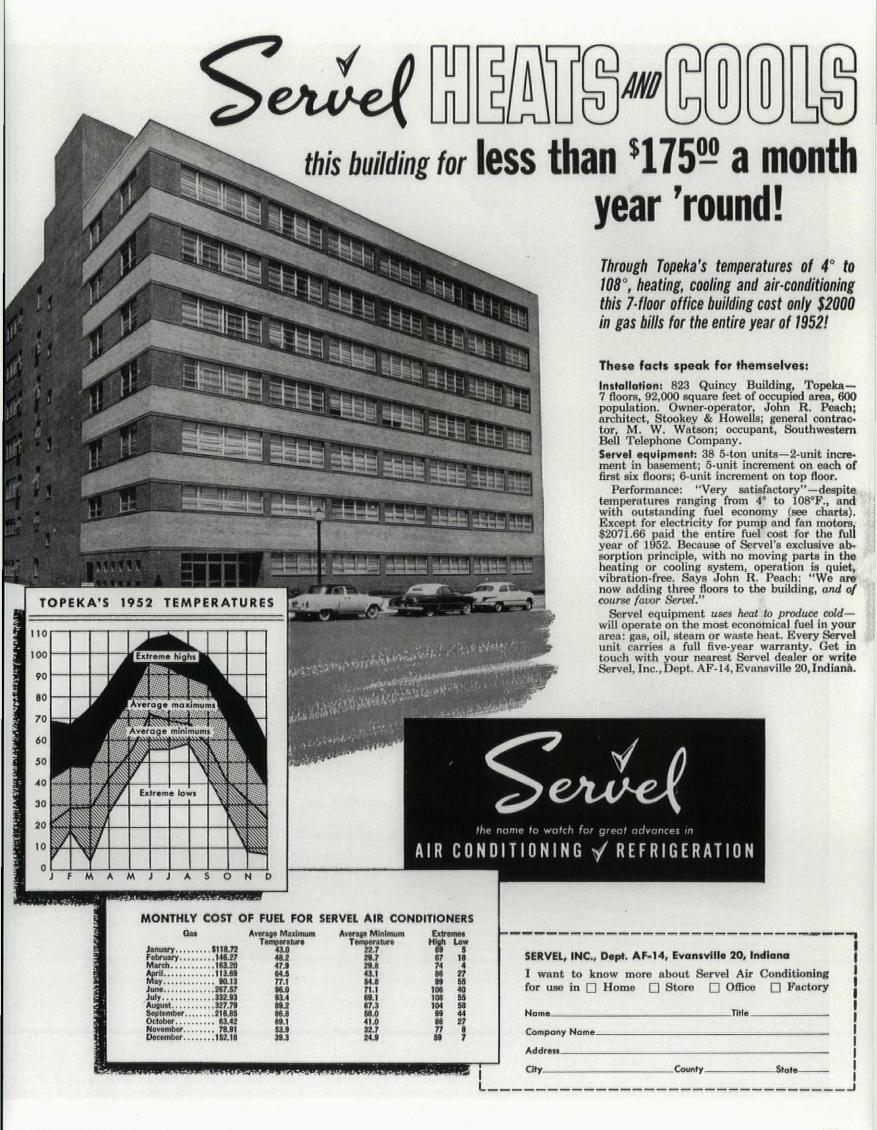
Insurance against the weather is what this underwriter wants. Whether it's hot and humid or cold and dry outside, the Prudential Insurance Company of America wants perfect indoor climate—all year round. And Prudential says the best insurance is Carrier Conduit Weathermaster* Air Conditioning. Prudential is building three new office buildings—in Jacksonville, in Minneapolis and in Chicago. For all three they chose the Carrier Weathermaster System. The Windy City headquarters (model shown here) will be an architectural triumph—a majestic tower rising 41 stories above



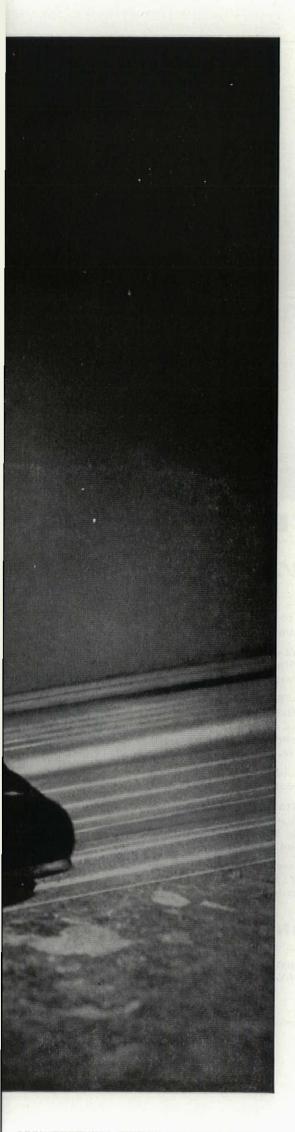


air conditioning refrigeration industrial heating

bustling Michigan Avenue. • The Weathermaster System is a Carrier development—perfected through 15 years of experience in over 300 installations—designed to meet the special problems of air conditioning office buildings, hotels, hospitals. It uses small-diameter air conduits that save valuable rentable space. And individual controls let the occupants of each office or room select the temperature they desire. • If you are planning a new building of any kind, or remodeling an old one, it will pay to learn the Carrier story. Please call your nearest Carrier office. Or write direct to Carrier Corporation. Syracuse, New York. *Reg. U. S. Pat. Off.







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The car glides to a feather soft stop. The door opens swiftly. You get off briskly at your floor after a level-perfect landing.

It's fascinating . . . it's a miracle . . . and you did it.

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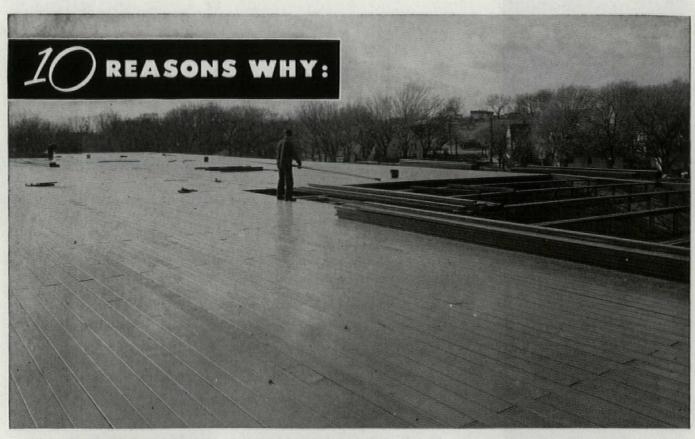
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offers Lasting Roof Economy

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- 10. ENGINEERING ASSISTANCE Available from Truscon branch offices to help you lay out Ferrobord Steeldeck, and to help select the proper insulation and built-up roofing.

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aluminum WINDOWS

by GENERAL BRONZE

 Whether the hospital building you plan is to be a part of a large medical center in a metropolitan city like the one shown here or a small, one story all-purpose hospital in a small town, there's one thing to keep in mind. Low annual maintenance costs are of paramount importance in enabling any hospital to meet its budget.

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As you plan new buildings - hospitals, schools, apartments or commercial buildings -take full advantage of the service and 40 years of practical experience General Bronze offers in solving your problems as they pertain to windows, spandrels, curtain walls and architectural metal work. We know from experience what kind of help architects appreciate most-what makes their jobs run easier and smoother. We can be of great help to you, too.

Because of our unequaled facilities and our vast experience, we are well qualified to serve you, especially when your requirements are complex or unusual. We will be glad to discuss your problems with you at any time. Our catalogs are filed in Sweet's.

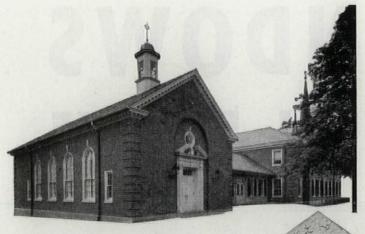
EAST BRONX HOSPITAL CENTER TUBERCULOSIS HOSPITAL, Bronx, N. Y. Dept. of Public Works, New York City Architects: Pomerance & Breines





GENERAL BRONZE CORPORATION GARDEN CITY, N.Y.

ALWINTITE DIVISION—Residential Aluminum Windows. PERMATITE DIVISION—Custom-built Windows, Architectural Metal Work and Revolving Doors. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in steel and iron. BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment



Gold Bond Travacoustic Tiles make beautiful

sound conditioning

PLEASANT RIDGE PRESBYTERIAN CHURCH Cincinnati, Ohio

Architects: Harry Hake & Harry Hake, Jr. Cincinnati, Ohio Associate Architect:

Joseph M. Lyle Cincinnati, Ohio General Contractor:

Wm. Guentter and Son, Inc. Cincinnati, Ohio Acoustical Contractor:

National Sound Control Cincinnati, Ohio



Judith Hathaway Kemper Memorial Parlor, Pleasant Ridge Presbyterian Church

CHURCH parlor like the Judith Hathaway Kemper Room requires an atmosphere of beauty and dignity... and the natural choice for the ceiling was Gold Bond Travacoustic. This mineral wool tile supplies excellent acoustical treatment plus the beauty of imported travertine stone.

Travacoustic tiles have noise reduction coefficients of .65 or .70, according to thickness and mounting, and are available in three sizes. They are factory finished, light-reflective without glare, and completely incombustible. Easy to maintain, they can be repainted with brush or spray for change in color scheme without loss of sound absorption.

Gold Bond Travacoustic is lightweight and easy to install -either with acoustical cement or mechanical suspension system. Contact your local Gold Bond Acoustical Contractor for further details. He's a qualified sound conditioning expert. Ask to see all six Gold Bond Acoustical Products-the complete line with a specific material for every job and every budget. For full technical information on Gold Bond Travacoustic, write Architects Service Dept., National Gypsum Company, for Technical Bulletin No. 348.

Pin the responsibility on National Gypsum inside and out















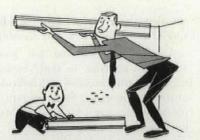
Gypsum Board

Insulation Plan

Acoustical

Asbestos-Cement **Products**

NATIONAL GYPSUM COMPANY **BUFFALO 2, NEW**



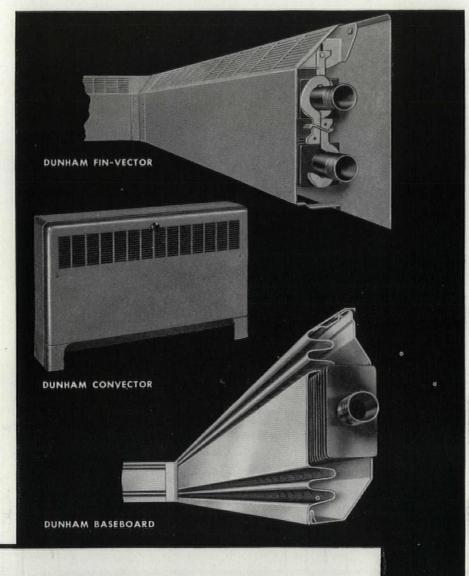
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"Easy-to-turn damper knob in reinforced, one-piece front"



"Fits flush with the floor—no 'cleaning under' problem"



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Here's As Complete A Line of radiation as you can get... anywhere. Good-looking Dunham Baseboard, along the wall Fin-Vector Radiation, and fast-heating Convectors have both new and improved features that can save you time and trouble now, and insure customer satisfaction years from now.

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put all responsibility for heating performance squarely up to one manufacturer. Let Dunham do it...and you'll have no regrets whether you specify, install or live with Dunham Radiation.

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SCHOOL DAYLIGHTING

Forum:

I read with great interest your excellent and comprehensive school issue of October 1953. Of particular interest to me was your emphasis on daylighting by means of toplights in the article "Thirty Foot-Candles with Economy."

However, your quotation on p. 184 of \$10 per sq. ft. for the plastic-bubble skylight is misleading. It is true that this is the ap-

proximate price of the round type of plasticbubble skylight. . . . But our records show that circular units have been used in only 1% of all our school installations. On the other hand, 50% of our school installations use rectangular plastic skylights 36" x 52" (cost: \$5.77 per sq. ft.) and 30% have used square units 36" x 36" (cost: \$5.43 per sq. ft.). Generally, three square or rectangular plastic skylights are used to daylight a classroom of 900 sq. ft. It should also be pointed

out that the circular unit includes its own special insulated curb and flashing.

Another consideration not mentioned in your cost analysis is that, because of the high light transmission and unbroken surface of the plastic dome, fewer square feet of the plastic domes are required to obtain a given lighting effect....

I make these comments only as a matter of record and not in any way to detract from your exceptionally well done and interesting

> MAX WASSERMAN, president Wasco Flashing Co. Cambridge, Mass.

Forum:

School issue: 81/2' ceiling in classrooms, 71/2' in corridors is sufficient when used with a 4' overhang and no bilateral lighting. This will produce 65 foot-candles on the outside row of desks and 25 foot-candles on the inside row; sunny-day readings on the shady side of the building.

The core plan is a revival of an old practice that is unsatisfactory because of noise, control and circulation difficulties.

Our records show that the typical doubleloaded corridor building is the most economical on either one or two floors.

Our records show that a two-story building is more economical when it is big enough to justify the stair wells.

Multi-use corridors should make for difficult sound control, but the Eberle, Smith & Associates' Ferndale School (p. 161) looks good.

Too much effort is expended on complex sections to produce bilateral light. The continuous deep skylight or deep plastic bubbles at the inside of the room should flatten out the light curve with the least effort.

Activity centers used in common by more than one classroom are not so satisfactory as those contained in the classroom.

The cluster plan with exterior corridors should produce head colds in abundance.

There aren't any rules; each district's requirements vary from every other district's.

WILLIAM A. GANSTER

Ganster & Hennighausen, architects Waukegan, Ill.

Forum:

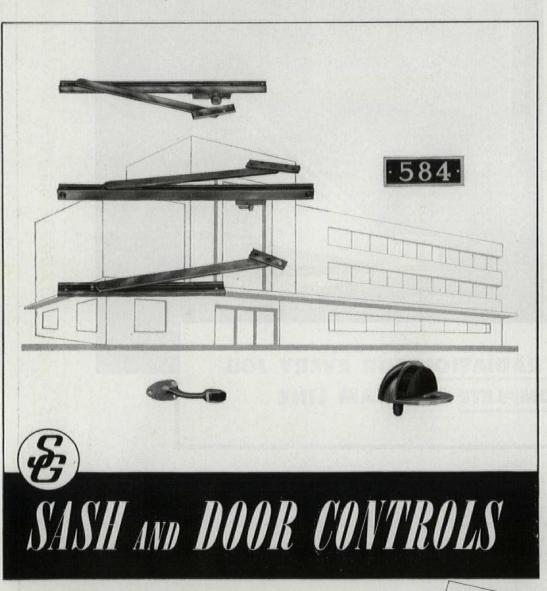
We rate your October school issue as "excellent."

E. K. MAHLUM, architect Office of John W. Maloney Seattle, Wash.

LANDSCAPING VS. FLOWER ARRANGEMENT

Forum:

I was, momentarily, gratified by a caption on p. 148 of your October school issue. The caption began by speaking of "rounded grass continued on p. 184



.. Better Because



It's second nature for Sargent & Greenleaf to insist all their products be fully proved before reaching consumers. The first 40 years of Sargent & Greenleaf's new line Sash and Door Controls have already passed into experience. Hardware consultants can recommend with pride—Architects can specify with confidence—No products bear a finer reputation than those made by S & G.



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KAWNEER
helps architects
to an R_X
for profit

Competition and the trend to self-service are requiring more and more drug store owners and operators to remodel. You, as an architect, can benefit from this trend to modernization by designing modern fronts for their places of business.

Kawneer, leading designer and producer of architectural metals, doors and entrances, permanently colored Zourite aluminum facing, and sun-control products provides you with modernization materials that are easy to specify, easy to include in design, and easy to install. When you specify Kawneer you know you are specifying the best for the job, your client and your reputation.

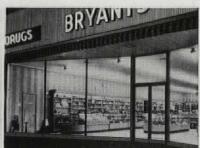
Kawneer is constantly expanding its product line to make your work more effective.

Example? The glazed porcelain-fired colors of Zourite facing now number seven. And special colors are available when quantity indicates. Colors are pleasantly eye-catching, modern, and in keeping with present-day concepts of design. Another example? Now, Kawneer, with the industry's most complete entrance line, enables you to specify either welded or bolted construction in doors. Kawneer versatility and availability help you design your best, since all Kawneer products are architect-designed for use by architects, while enabling you to specify a complete job from a single source.

There is a Kawneer Installing Dealer in your vicinity. He is specially factory-trained to serve you. Call him for capable assistance. He is listed under "Store Fronts" in the classified pages of your phone directory. Or write Kawneer, Niles, Michigan.

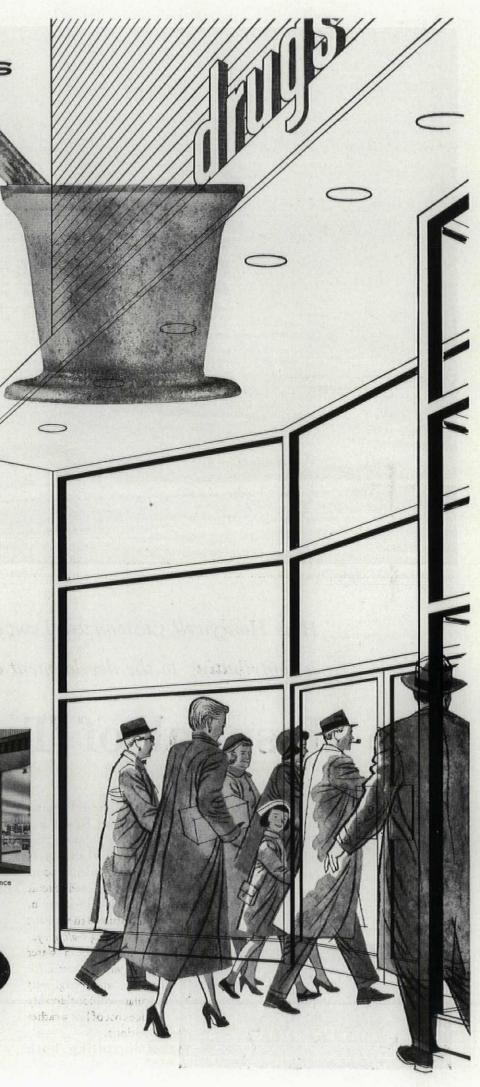


Kawneer drug store modernization



Kawneer helped this pharmacy's appearance







Architect: Louis Allen Abramson; Hospital Consultant: E. D. Rosenfeld, M. D.; Consulting Engineers: Slocum & Puller; Mechanical Contractors: Jarcho Bros., Inc. All are located in New York City

How Honeywell Customized Temperature Control is contributing to the development of

The Hospital of Tomorrow

The case in point is the Long Island Jewish Hospital now under construction in Glen Oaks, New York. "Features of Tomorrow" will include a double corridor arrangement (see floor plan below) that gives highly desirable separation between patient rooms and service areas, an auditorium, and closed circuit color TV for mass professional medical instruction.

But probably the most unusual feature is the radiant

panel heating-cooling system. Subterranean water at 55° will be used for cooling, which engineers calculate will considerably reduce cost of hot weather operations.

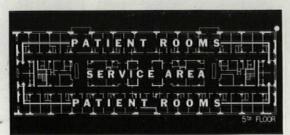
Controlling both

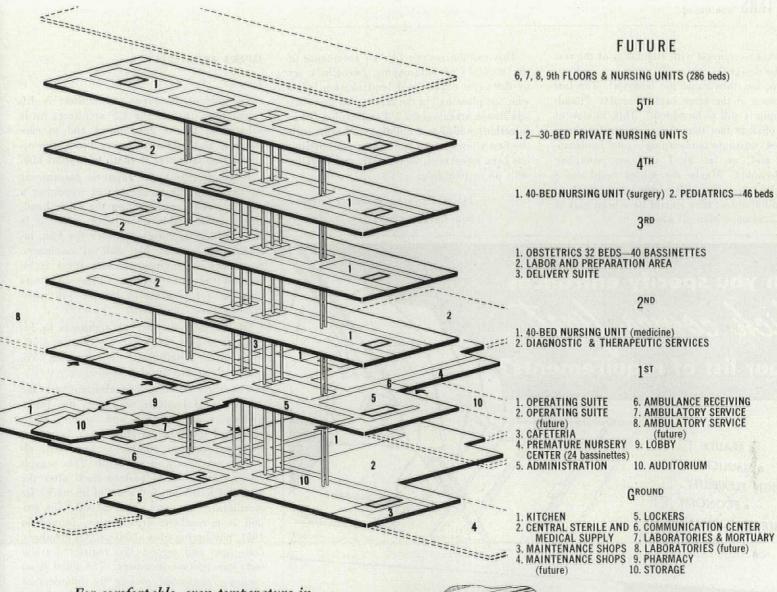
heating and cooling will be a Honeywell Customized Temperature Control installation.

Main feature of the installation will be Honeywell's specially designed summer-winter hospital thermostat. An individual thermostat will be located in every bedroom.

Problems of humidity during the summer, and ventilation requirements, will be met by an auxiliary air handling system. Temperature and humidity of this air will be controlled by a Honeywell Weatherstat located on the roof.

In the Long Island Jewish Hospital, the Honeywell Customized installation was designed to fit the needs of the building and its occupants. That's how it is with every Honeywell Customized installation no matter what kind of building you have.





For comfortable, even temperature in new or existing buildings-of any size-use Honeywell Customized Temperature Control

Whether it's a hospital, apartment, school, office, factory, store—or any size building—new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems.

Once equipped with Honeywell Customized Temperature Control, they'll have an ideal indoor "climate"-and save fuel besides.

And with a complete line of pneumatic, electric and electronic controls to choose from, Honeywell Customized Temperature Control offers you the greatest flexibility in design.

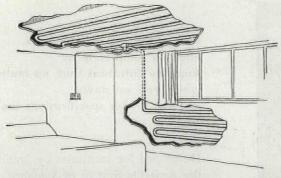
For full facts, call your local Honeywell office. Or mail the coupon direct to Minneapolis.

Honeywell



First in Controls

104 OFFICES ACROSS THE NATION



Honeywell individual room thermostats will control heating-cooling panels in bedrooms as above. Because rooms have this individual control, they can always be kept comfortable-regardless of a variety of exposures, shifting winds, direction of sunshine. And with an individual thermostat in every room doctors can "prescribe" the exact temperature needed to speed a patient's recovery.

MINNEAPOLIS-HONEYWELL REGULATOR CO.

Dept. MB-1-105, Minneapolis 8, Minnesota

Gentlemen: I'm interested in learning more about Honeywell Customized Temperature Control.

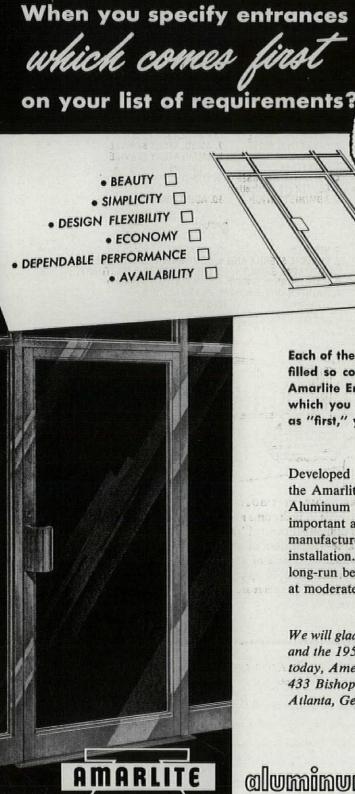
Firm Name ..

Address ... Zone State patches to contrast with angularity of the rest of the design."

Ah, but then came the letdown! The last sentence of the same caption reads: "Landscaping is still to be added." This, in view of the obvious fact that the grass circles themselves constitute landscaping—good landscaping and, as far as I can see, complete landscaping. Maybe the school could use a tree or two— if so, it's pretty late to think of "adding" them: they should have been part of the landscape plan all along.

This caption sounds like an acceptance of the standard of landscaping (so-called) set by the sweet drawn-by-Helen-Hokinson ladies who "do planting" in the same spirit that they "do flower arrangement." Landscaping is not something added to a building: it begins with the first sitework and ends when the building has been integrated, functionally and visually, with its surroundings.

> James Fanning, landscape architect New Canaan, Conn.



Each of these requirements is filled so completely by Amarlite Entrances that, no matter which you set down as "first," your specifications are met.

Developed for architects by architects, the Amarlite System of Standard Aluminum Entrances provides important advantages in precision of manufacture, distribution and installation. Your client will enjoy the long-run benefits of a quality product at moderate cost.

We will gladly send you full information and the 1954 Amarlite catalog. Write today, American Art Metals Company, 433 Bishop Street, N.W., Atlanta, Georgia

aluminum entrances

JAPAN'S ARCHITECTS

Forum:

The role of the Japanese architect is different from that of the US architect; he is subservient to the government and to contractors, and, while he is organized, the organizations lack real strength to support him.

When attached to the Japanese government on any work, he is considered somewhat a servant. The contractor, on the other hand, enjoys considerable importance; often it is he who hires architects to work for him, including them with his staff of engineers. Sometimes an engineering firm hires architects in the same manner. (The architects then become contractors for the job when drawings are completed.)

Of the total number of architects in Japan, 40 to 50% work for contractors; 25% work for the government; the remaining 25% belong to architectural firms.

The three leading organizations are the Architectural Institute of Japan, the Japan Federation of Architects and Building Engineers and the Japan Architectural Assn. The first is somewhat similar to our AIA, although not nearly so powerful. This organization started out to pattern itself after the AIA and RIBA but fell short of its mark. Its membership numbers about 20,000. The second is a newborn organization, formed in 1951, numbering also about 20,000 members. Only first- and second-class registered architects can become members. The third is an exclusive, powerful society for founders or principals of architectural firms only. It has only 70 to 80 members.

American architects in Tokyo in private practice and in the mil. ary and government service felt the need to get together to further the profession, to mix socially and to meet the Japanese architects in order to teach them American practices and especially to raise their status. For this reason the Far East Society of Architects (FESA) was formed in May '52. The meetings are quite successful at the cocktail stage, but nothing constructive has yet been done to change the Japanese architects' status.

This society has fine potentialities. Meetings are interesting in the cosmopolitan sense and often transcend into genuine friendships. The language barrier presents a problem, as sometimes a translation into Japanese is necessary during an important dinner speech. Activities thus far have included military speakers, Mr. S. Ito, president of the Architectural Institute of Japan, and competitions, with a third competition forthcoming.

The constitution and by-laws are patterned after those of the Los Angeles AIA chapter. Membership is continually growing, now totals 33 Americans and 25 Japanese, plus many supporting nonmembers.

RICHARD NEVARA, architect

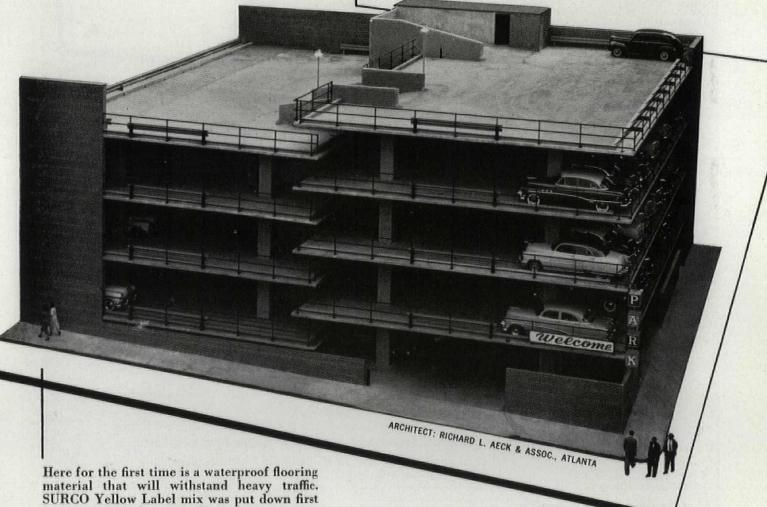
SURCO

Tops for
Award-Winning
Parking Deck

Williams Parking Deck in Atlanta was cited as a signal example of modern, functional

design in *Progressive Architecture's* 1953 Awards Judgment. Built at a cost of \$3.50 per square foot, the parking deck has a 210 car capacity.

SURCO'S versatility as a flooring material made it a natural choice for surfacing the top deck. As a waterproof, roofing material SURCO provided the additional qualities of exceptional durability, traction, and high resistance to oil, gasoline and grease.



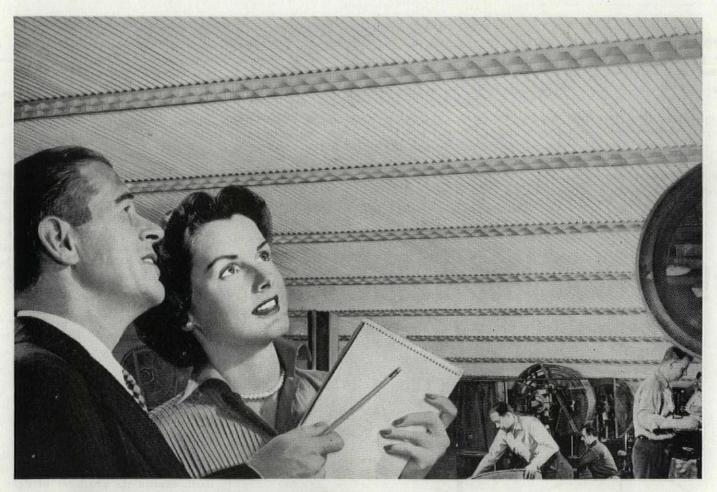
Here for the first time is a waterproof flooring material that will withstand heavy traffic. SURCO Yellow Label mix was put down first to waterproof the roof. Then the entire top deck was surfaced with SURCO Red Label mix for durability and resistance to petroleum products.

 Sweet's Architectural, Industrial Construction, and Plant Engineering Files contain complete information on SURCO products.



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ReynoCoustic

aluminum acoustical system for high noise reduction at low cost

ReynoCoustic, the only complete aluminum acoustical system, is unique in combining maximum sound absorption with minimum maintenance and ready accessibility to utilities above the ceiling.

The system is incombustible, having a fire spread rating equal to or lower than any other standard acoustical material. Each shipment carries
Underwriters' Laboratories label. Available in natural aluminum or soft-white baked enamel finish.

High in light reflection, Readily cleaned when necessary, using maintenance labor to remove and replace panels. Sound absorption comparable to or greater than standard acoustical materials. An important plus advantage is maximum thermal insulation value at no increase in cost. Write for literature.

A complete installation service is available. For name of nearest franchised acoustical applicator, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. Or write to Reynolds Metals Company, Building Products Division, 2020 S. Ninth St., Louisville 1, Ky.

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FOR ACCESS TO UTILITES
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MOTHOLIG

Typical installation showing method of support for ceiling members and lighting fixtures. This system provides a noise reduction up to .90—uniformly high at all frequencies.

SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.



PLANNING GUIDE FOR RADIOLOGIC INSTALLATIONS. Edited by Wendell G. Scott, M.D. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago. 336 pp. Illus. 7" x 10". \$8

This is a fine, solid reference manual in which generalizations are kept to a minimum and well-organized, specific material is packed in to the maximum. Under the aegis of the American College of Radiology, 49 contributors have set forth current practice

and best thinking on every facet of radiologic planning, from arrangement of dressing booths to handling of isotopes.

This is (wisely) not a book of readymade solutions; nowhere will the designer find a suggested layout for a hospital of such-and-such a size, for example. The approach is a good deal broader and more basic—to provide "comprehensive information on all phases of radiologic planning, from the small, efficient office or one-room department in a rural hospital . . . to the large, intricate department in a university hospital."

The conscientiously detailed explanations of function are supplemented by a judicious selection of planning details and by such useful diagrammatic material as work flow charts and protective barrier graphs.

This is the first radiologic reference work of anything like this scope. The decision to do it (because the American College of Radiology was being snowed under with inquiries) and the form it took were determined by an advisory board representing the AIA, U.S. Public Health, hospital groups and equipment manufacturing firms.

ILLUMINATION ENGINEERING. By Warren B. Boast, Ph.D. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N.Y. 340 pp. Illus. 61/2" x 91/2". \$7

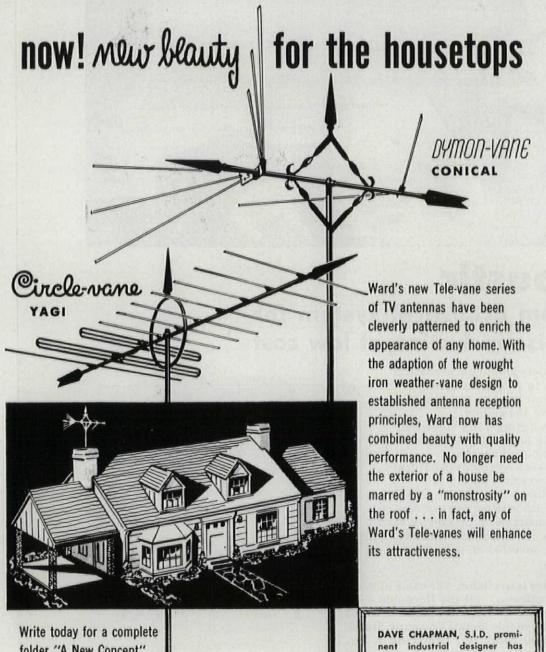
This second edition of Professor Boast's handbook on the fundamentals of lighting and seeing is revised to reflect the lighting progress of the past ten years.

Written primarily for the student lighting engineer, these 19 chapters describe the eye itself, explain the character of light, types of illumination sources, effects of surface absorption and reflection, standards, design, color effects, street lighting and floodlighting. The book closes with a short chapter on wiring systems. Photographs of actual lighting jobs are not included as they are believed to become obsolete too quickly. This omission, plus the lack of comparative analyses of efficiencies and costs of various methods of lighting, tends perhaps to weight this clearly written handbook toward the theory rather than the practice of lighting.

CLIMATE AND ARCHITECTURE. By Jeffrey Ellis Aronin. Reinhold Publishing Corp., 330 W. 42nd St., New York 36, N. Y. 304 pp. 9" x 12". Illus. \$14.50

The study of climate has, for several years, been pursued so zealously in so many directions that a summing up of all the diverse findings is in order. Here it is, in a book by a young architect who collates, quotes, reproduces and sometimes judges shrewdly what has been done, then goes on to add some findings of his own. It is a big book, a handsome one, a solid one. If at times it becomes a little loose in its choice of what to include and what to leave out, this is understandable because of timing; the time is early.

The chapter breakdown of the book, following introduction and background: the sun; temperature; wind; precipitation; other factors (such as lightning and humidity); conclusion; and an excellent bibliography.



Write today for a complete folder "A New Concept" which gives full particulars on the Ward Tele-vane series, complete with illustrations.

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DIVISION OF THE GABRIEL COMPANY
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Series an artistic touch and

architectural correctness that no

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Today, contractors... builders... architects are using brazed connections, in ever increasing numbers on their brass and copper pipe runs. However, they must be certain that the correct brazing alloy is used; that the joint has penetration of alloy up the shoulder of the fitting.

That's why more and more are turning to Walseal joints made only with Walseal valves, fittings and flanges which assure the proper amount of alloy with no waste. They know that the finished joint not only will withstand hydrostatic pressure, but it will also withstand terrific impact and vibration – in fact, no correctly made Walseal joint has ever been known to creep or pull apart under any pressure, shock, vibra-

tion or temperature which the pipe itself can withstand.

Furthermore, it is a relatively simple operation to make a joint – no heavy scaffolding need be erected... just cut the pipe, flux, assemble, then braze, following the technique recommended by the Walworth Company. A silver brazing alloy – FACTORY INSERTED – in each port flows out when heated with the oxyacetylene torch, making a joint that is stronger than the pipe itself... a one-hand operation, with the mechanic out of the path of the deflected heat – at all times.

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valves and fittings

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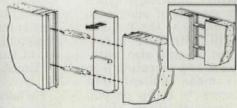
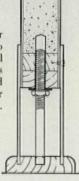


Illustration shows how metal keys slip into keyways to lock panels. Opening in key provides hidden space for B X cable. Spring clip on post cap snaps on, closing space between panels.

Weldwood Movable Partition with post cap and base removed, showing B X electric cable and outlet boxes in place.

Cutaway view of floor base assembly. Two leveling bolts per panel make adjustments easy. Bases may be had in matching wood or in satin black Micarta.



Weldwood movable partitions offer the matchless beauty of real wood

Easy to install and maintain. Simple interlocking feature makes rearrangement possible on a week end or overnight.

There is nothing that matches the warmth and beauty of *real* wood partition panels. When this natural beauty is combined with *low cost movability* it's a combination that is hard to beat. Virtually any wood face is available on order.

When the office is "on-the-move," unique metal keys which lock the panels together make it a simple matter to rearrange them as desired. There are no screws. Snap-on matching post cap between panels hides telephone and electric cables, easily removed for access. Special floor base unit cuts remodeling time and mess.

TYPES OF PANELS include cornice and ceiling height,

glazed and low railings. Wall sections include door, glazed and solid types. Door and wall panels may be interchanged without disturbing adjoining panels.

SIZES: Weldwood Partition Panel units come in 2', 2½', 3', 3½' and 4' widths. Standard movable partition heights are 7' 1", 8' 6", 5' 6" and 3' 8". Special heights to order.

CONSTRUCTION: The panels contain the same fire-resistant mineral core which is used in Weldwood Fire Doors. It provides a noise barrier twice as effective as a 2 x 4 partition with metal lath, plastered both sides. Panels are easy to keep clean.

Weldwood hardwood partitions are guaranteed for the life of the installation!

Further information is available at United States Plywood or U.S.-Mengel distributing units everywhere.

Weldwood Fire Doors and Stay-Strate Doors combine beauty with safety

They are guaranteed for the life of the building



Weldwood Fire Doors in Lever House, New York City. These wood-faced doors carry the U.L. label for Class B and C openings. Should a fire break out, the mineral core is an effective fire-check. Arch: Skidmore, Owings & Merrill.



The light cutouts will not weaken the rigidity of these birch Weldwood Stay-Strate Doors installed at the Lake Hiawatha School, Troy Hills, N. J. They combine visibility with beauty. Arch: Emil A. Schmidlin.



American walnut Weldwood Fire Doors in the United Nations Building. The facing veneer on doors came from same flitch used for the paneling. Arch: W. K. Harrison, Director of Planning. Installed by: Murray Hill Woodworking Corp.

Weldwood

PARTITION PANELS AND DOORS

United States Plywood Corporation
WORLD'S LARGEST PLYWOOD ORGANIZATION
Weldwood Building, 55 West 44th Street,
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and U.S.-Mengel Plywoods, Inc. Louisville, Kentucky



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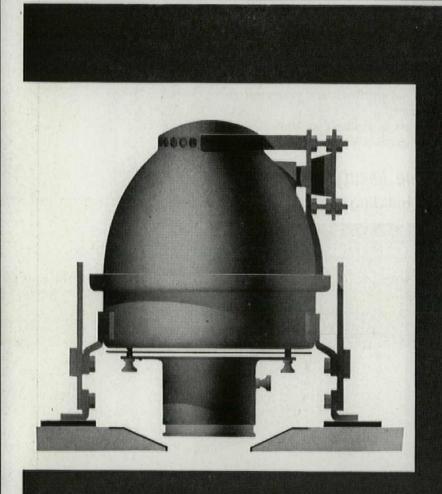
CITY.....STATE.....





Rolled out from a 100' strip, the transluscent plastic sheeting is easy to handle and apply.





project-O-lites: These instruments make use of objective lenses to produce a well defined beam, plus built-in framing shutters or diaphragms to limit the area and shape of the coverage. They are especially useful where selective coverage is needed from an extremely inconspicuous source, as in churches, art galleries, dining rooms, displays, etc. Sizes range from small "pinhole" units up to 2000-watt units for projecting a powerful beam from a very high place

Size shown: #1654; 400 watts; 31/2" aperture; Price, \$66.25

CENTURY LIGHTING, INC., 521 WEST 43RD STREET, NEW YORK 36 626 NORTH ROBERTSON BOULEVARD, LOS ANGELES 46

RUGGED REINFORCED PLASTIC: continuous panel comes in compact carton

Spun-Lite, a colorful glass-fiber reinforced plastic structural panel, is being manufactured in continuous sheets like yard goods. The machine that turns out the new structural material was engineered by Paul Hoffman, vice president of the firm. It takes a glass mat, feeds it through the rollers, impregnating it with polyester resin and pigment, and pressing out paneling that is flat or corrugated, shiny or dull, rippled or smooth, transluscent or opaque. Color selection is almost unlimited. Length of the roll is governed only by the maximum glass-mat length currently available-150'. Width of the material runs from 1' to 5' (drawings are now on the boards for a machine that will produce 12'-wide paneling).

Useful as roofing (minimum pitch 1" to 1'), siding, glazing, fencing, partitioning, the reinforced plastic is impact resistant and practically impervious to the vagaries of weather. It is easy to handle and install. Fewer joints mean less labor and less chance of air or rain leakage. Although the material has high impact strength, it is flexible enough to be curled up into compact eartons; one, 25" long x 3' wide can hold 200 sq. ft. of sheeting. The new dull finish is said to help provide good light diffusion through the translucent paneling without the



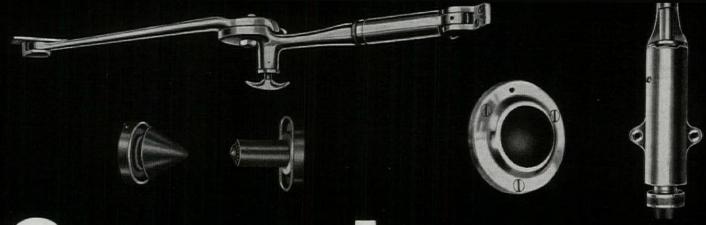
annoyance of surface glare. Cost of Spun-Lite will run around \$1.25 per sq. ft. not installed. For application to wood, the manufacturer recommends the use of aluminum nails with neoprene washers. For fastening to metal framing, brass or galvanized nuts



and bolts are suggested. The plastic can be cut with a handsaw or power saw.

Manufacturer: Spun-Lite Corp., Miami, Fla.

continued on p. 196



GLYNN-JOHNSON





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Chicago 40, Illinois

Refer to G-J Catalog for complete line of door holders, bumpers, and specialties...for all types of doors in public and commercial buildings.

ACOUSTICAL MATERIALS AT WORK



Architects: Lawrence, Tucker & Wallmann

General Contractor: Ross B. Hammond Co.

Acoustical Contractor: Artcraft Linoleum & Shade Co.

ERB MEMORIAL STUDENT UNION, Eugene, Oregon

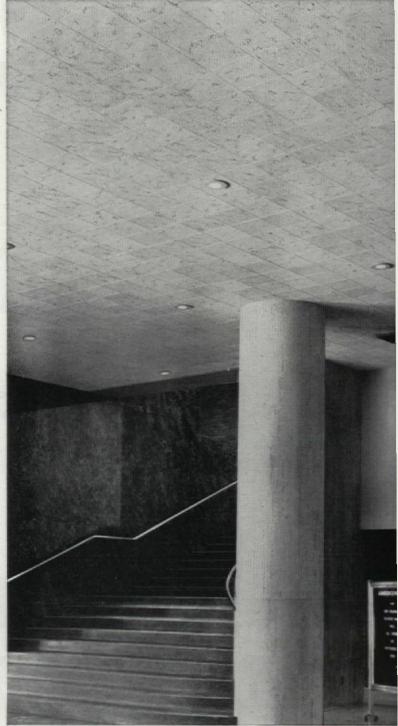
The dream of a generation of students at the University of Oregon came true recently with the opening of the new two-million-dollar Erb Memorial Student Union Building.

A convenient center for all campus activities, the Union has been especially designed with the students' comfort and welfare in mind. Even the ceilings help promote a pleasant, relaxing atmosphere, for they are noise-absorbing ceilings of Armstrong's Travertone and Cushiontone.

Throughout the lobby, corridors, and lounges, Travertone acoustical ceilings soak up distracting noise, allow students to read, study, or chat with friends in undisturbed quiet. A distinctively fissured mineral wool tile, Travertone blends well with the decorative scheme.

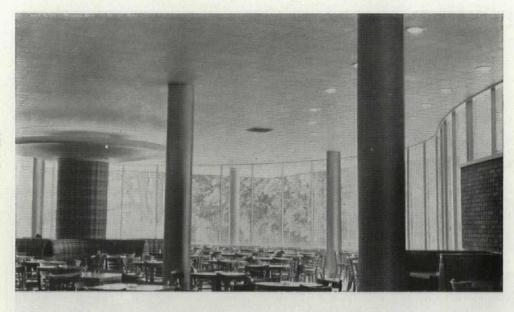
Armstrong's Cushiontone was used to sound condition the offices, auditorium, cafeteria, and library. Cushiontone is a white painted, cleanly perforated wood fiber material. Its low cost and easy upkeep often make it the choice when large areas must be sound conditioned economically.

Your local Armstrong Acoustical Contractor will be glad to give you complete information on Travertone, Cushiontone, and Armstrong's other acoustical materials. For the free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 4201 Rooney Street, Lancaster, Pennsylvania.



The wide use of marble, brick, and other hard-surfaced materials in the lobby made efficient accoustical treatment a real necessity. The handsome Travertone ceiling absorbs up to 75% of the noise that strikes its surface, preventing any build-up of high noise levels.

Prices geared to fit the student's budget make the good food served in the cafeteria especially attractive. The noise-absorbing Cushiontone ceiling also contributes to an enjoyable mealtime atmosphere.

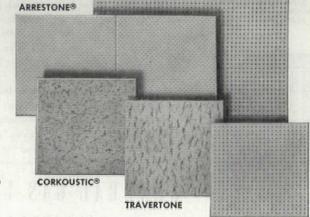


The clean, modern lines of the lobby are accentuated by the striking appearance of the Travertone acoustical ceiling. Not only is Travertone an integral part of the décor, its incombustible composition is an aid to fire-safety.





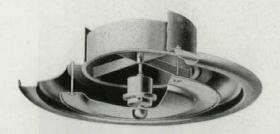
Although spacious in itself, the ballroom may be enlarged by the removal of the electrically operated walls on two sides. Whether in use as a dance floor or an auditorium, proper acoustics are assured by the Cushiontone ceiling.



PERFORATED ASBESTOS BOARD

ARMSTRONG'S ACOUSTICAL MATERIALS

CUSHIONTONE®



CEILING DIFFUSER: air supply regulated by motor-operated dampers

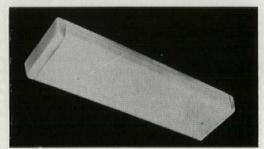
A pneumatic motor, remotely controlled by a thermostat, controls the damper and thus the volume of air flowing through this new Kno-Draft ceiling diffuser, engineered for air-conditioning systems which have to serve zones with changeable heat loads (i.e., window areas affected by varying solar heat, rooms with fluctuating occupancy, office or store space that is

frequently revamped). Because of the unique construction of the Kno-Draft diffuser-its sleeve damper moves up and down without enlarging or restricting the neck area-the unit is particularly adapted to this kind of automatic volume control at the point of discharge. Regardless of the damper position, the air pattern serving a particular area remains largely unchanged. Only the air quantity is varied.

Manufacturer: Connor Engineering Corp., Danbury, Conn.

LIGHTING FIXTURES boast simple shapes, glareless illumination from plastic diffusers

Lightolier has added two new fixtures to its cleanly architectural Sightron line. Shedding even light through its finely ribbed polystyrene diffuser, the four-40-w. lamp ceiling model is suitable for office, store, school and hospital applications. Its parabolic reflector



snaps out for quick access to wiring. The wall bracket, a 48", 40-w. unit, is designed for use over washroom mirrors, display boards and in corridors and lobbies. Either fixture may be



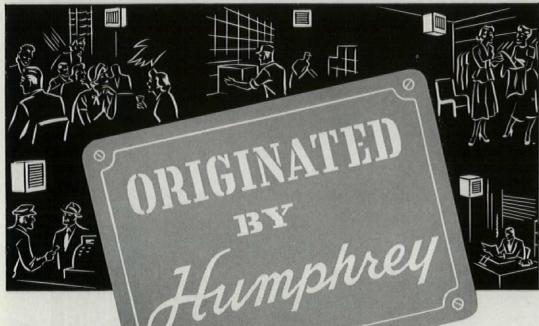
used singly or in continuous runs. Besides the new models, several new features have been incorporated in the Sightron group: rapidstart ballasts, diffusers which hinge from either side for easy cleaning, and slip-on adjustable cross bars to simplify installation. The ceiling unit No. 7194 lists at \$49.55; and the bracket No. 7214 at \$24.90.

Manufacturer: Lightolier, Architectural Div., 346 Claremont St., Jersey City 5, N.J.

NONSLIP SURFACING MATERIAL easy to apply on floors, steps and ramps

Safety-Walk, applied to treacherous foot-traffic areas, can prevent many falling and slipping accidents. This long-wearing, sandpaper-like surfacing material is made of tough, waterproof fabric coated with hard, synthetic mineral grains. It should find use in both new construction and remodeling jobs wherever slippery floors, steps or ramps present a safety problem-factories, schools, hospitals, offices

continued on p. 200



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Gas Unit Heater!



nphrey Series A Automatic Gas Heater. Choice of Rotor or Pro or fan, 65,000 to 200,000 b.t.u



Humphrey Model 40-G, compact Gas Unit Heater in 17" x 22%" x 13¼" cabinet. 40,000 b.t.u.

Twenty-five years ago, Humphrey, already a leader in producing gas heating equipment for the home, originated and marketed the first Gas Unit Heater for business and industrial use.

In the years since, Humphrey engineers have led the way in developing improvements in design and construction required to meet ever higher standards of dependability and efficiency.

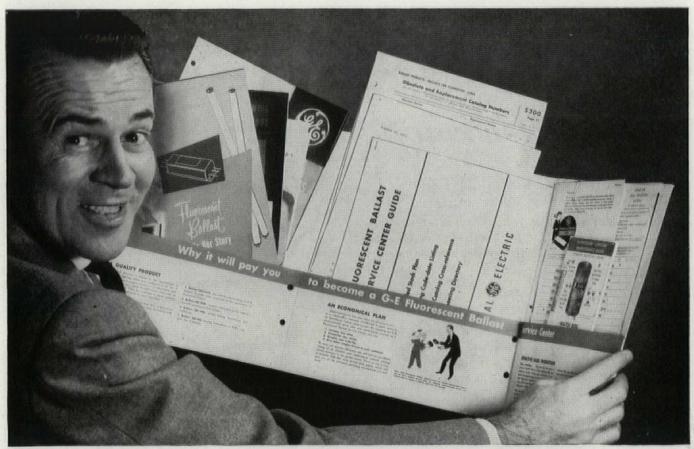
Heat exchangers with unrestricted, non-baffled interiors, for service-free operation without cleaning-stainless steel burner heads that increase service life and eliminate up to 100 lb. of dead weight-non-clogging pilots that operate dependably even under unfavorable conditions-all these and many other features have been Humphrey developed, on the basis of Humphrey experience.

Today Humphrey continues to lead in providing the refinements of construction that assure top efficiency and dependability.

Now as always, it is good business to make the Humphrey Gas Unit Heater your first choice. When you install a Humphrey you can be sure you are putting in the newest and the best.

GENERAL GAS LIGHT COMPANY

KALAMAZOO, MICHIGAN



Here's the complete kit furnished to your distributor to solve your ballast replacement problems.

New G-E Service Center Plan streamlines ballast replacement for fluorescent users



Mr. Wholesaler: The biggest promotion in the ballast business is ready to help you get your share of the growing replacement ballast market. Ask your G-E representative for the details about the ballast service plan.

Immediate In-warranty ballast replacement now possible at wholesaler's place of business.

There's good news for you in the new General Electric Ballast Service Plan for lighting equipment wholesalers. Now your fixture customers get immediate replacement on G-E ballasts which fail within warranty. There's no red tape on the ballast exchange. G-E Ballast Service Centers are authorized to make free replacements right-off-the-shelf of G-E ballast which fail within warranty. And the same ballast stocks are available for normal ballast replacements, too.

Under the new plan, your distributor gets the latest information on how ballasts work, how to install and test them, and other aids designed to help with lighting problems.

If your distributor hasn't yet heard about the new G-E Ballast Service Center Plan, show him this ad. And for more information on the new program, contact your nearby G-E Apparatus Sales Office. General Electric Co., Schenectady 5, N. Y.

Progress is our most important product

GENERAL ELECTRIC

About the Cost of



No matter how you put heat into a structure,
you lose more through single-glazed windows than
through Thermopane insulated windows.

That's money wasted, year after year, that Thermopane will save.

No matter how you design windows for air conditioning, the cooling load is greater with single-glazed windows than with Thermopane insulated windows.†

That's money wasted, year after year, that Thermopane will save.

These year-round operating costs for heating and cooling are readily calculated for any locality. So is the capacity and cost of the heating and air-conditioning plants the building requires.

In most instances, when these costs are compared for single and double glazing, the savings with *Thermopane* make its higher initial cost a sound economy—especially when you consider these—

Other extras you get with Thermopane

EXTRA QUIET because outdoor noise is subdued.

EXTRA COMFORT because drafts near windows are reduced.

EXTRA HEALTHFULNESS in winter, because higher humidity can be maintained with *Thermopane*. Condensation doesn't occur as readily as on single glass.

—all these are advantages that you get "for free" when you write off the cost of *Thermopane* in terms of heating and cooling economies.

† For maximum efficiency, use *Thermopane* made with L·O·F Heat Absorbing Plate Glass.

QUESTION:

How long since you've had bids on a job glazed with Thermopane? Get bids on your next job from your L.O.F Distributor of Dealer and see what Thermopane costs installed today.





LIBBEY . O WENS . FORD GLASS CO.

5114 Nicholas Building, Toledo 3, Ohio

Two Panes of Glass

Blanket of dry air insulates window

Bondermetic (metal-to-glass) Seal* keeps air dry and clean



New bus terminal faced with extra-long stainless panels

Continuous panels of Armco Stainless Steel, 24 feet long, sheathe this new bus terminal building in Chicago. Panels are made with 1½-inch ribs, spaced 6 inches apart—extend from the tops of the show windows to the top of the building. The stainless is 18 gage, Type 302 and the finish No. 2 Dull Cold-Rolled.

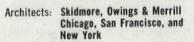
Panels are mounted 2 feet 6 inches outside the column lines to clear reinforced concrete parapets on the car-parking floors. There are no noticeable bolts or welds to mar the sweeping lines of the building.

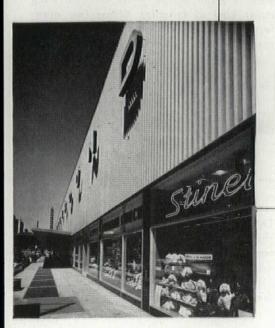
This structure is said to be the largest independently owned bus

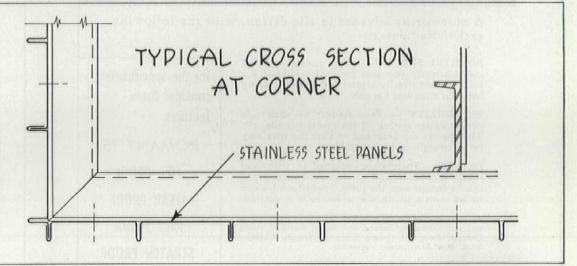
terminal in the United States. It is designed for the arrival and departure of more than 2,000,000 travelers a year. Stainless steel moving stairways lead to and from the sub-basement where all busses load and unload at 31 docks.

Stainless workability permits an infinite variety of exterior architectural treatments. To name a few applications, it is used in spandrels, pilasters, curtain walls, entrances and doorways. Stainless steel is permanently beautiful because it is so easy to clean and keep clean.

For complete information on Armco Stainless Steels and their architectural uses, write us at the address below.



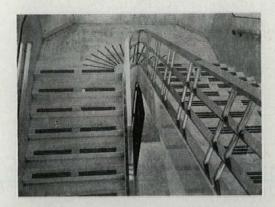




ARMCO STEEL CORPORATION

1074 CURTIS STREET, MIDDLETOWN, OHIO EXPORT: THE ARMCO INTERNATIONAL CORPORATION





and stores. (More than 4 million people walked over a ramp surfaced with the material in a Minneapolis department store without a single reported mishap. Before Safety-Walk was installed, slipping accidents occurred nearly every day.) The material is made in various shapes and sizes, in brick red, silver, green and black. Two types are available: Type B Safety-Walk has a pressure-sensitive adhesive that makes it as easy to apply as a

strip of tape. Type A, suggested for rough concrete surfaces, is applied with a liquid adhesive. A box of strips for a 12-step stairway costs about \$6.60. Cleats 6" x 24" for a floor area of 64 sq. ft. cost about \$38.

Manufacturer: Minnesota Mining & Manufacturing Co., 900 Fauquier Ave., St. Paul, Minn.

PLASTIC-COATED PLANK AND BLOCK tongued and grooved for moldingless installation

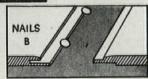
Raymond Loewy has styled a palatable color line for the Marlite Plank and Marlite Block prefinished hardboard paneling. Measuring 16" wide x 8' high x 3/16" thick, the T&G panels can be applied with special clips or with ordinary nails directly over an existing





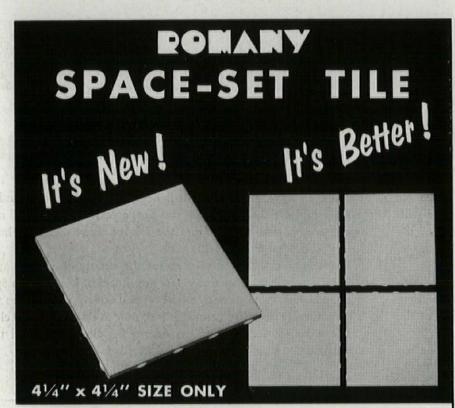
wall for a remodeling job or onto furring strips or studs in new construction. Allowance is made in the joints for concealing either kind of fastening device (see drawings below). The 16"-square Marlite Block are put up the same way. Besides the ten





Loewy colors, the paneling comes in four simulated wood patterns. Matching molding for corners, cove casing and base are also available. Cost: 51¢ per sq. ft. for solid colors and 55¢ for wood-grain patterns.

Manufacturer: Marlite, Inc., Dover, Ohio continued on p. 204



A noteworthy advance in tile design, with the following exclusive advantages:

POSITIVE SPACING — Each spacer working independently provides for full width of the joint. Automatically allows for proper spacing between trim and flat tile.

FLEXIBILITY — Four spacers on each side permit easier setting of fractional cut tile, etc. The spacers are arranged so that the tiles may be set straight or broken joint.

DESIGN — Spacers are designed to withstand rough treatment, and so that maximum grout can be forced into the joint. Space-Set tiles can be set with a string if a wider joint is desired.

All of Romany's outstanding features have been retained, including: Strong Buff Body, Size and Shade Control, Beautiful Colors, Enduring Glazes, Cushion Edge, Low Absorption, Versatility.

Correspondence Invited

UNITED STATES QUARRY TILE CO

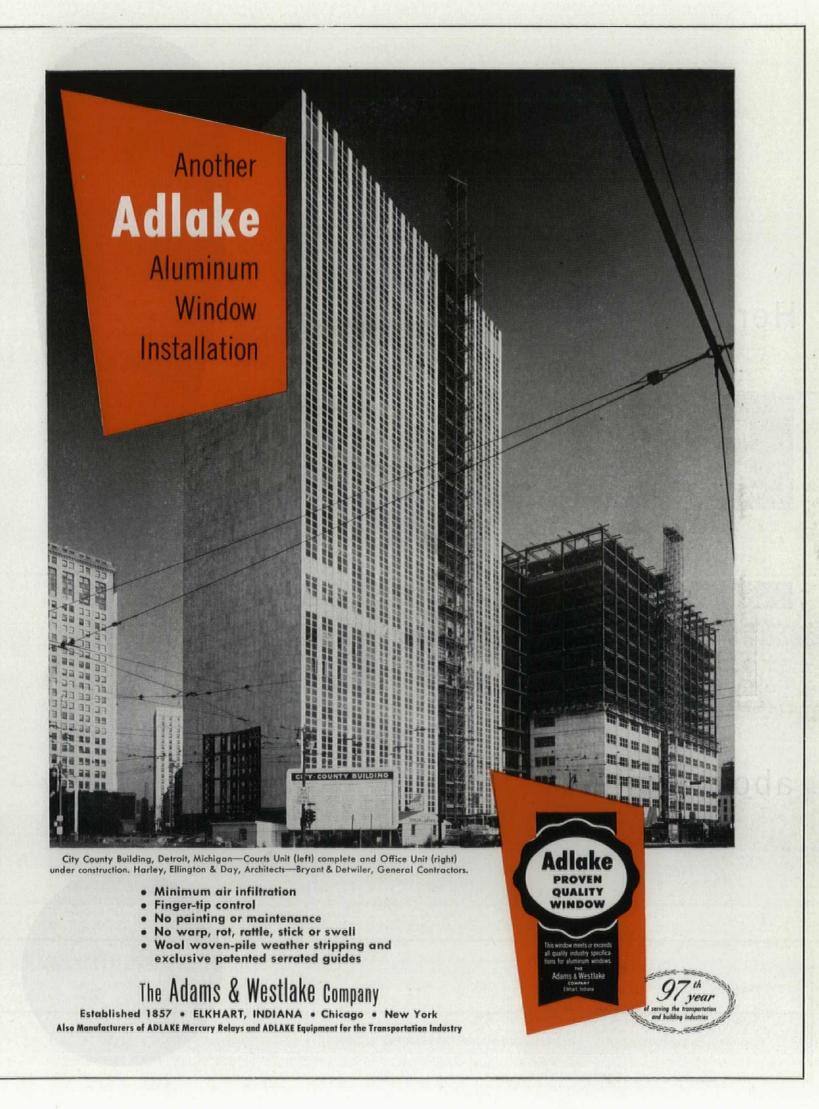
Member: Tile Council of America and Producers' Council, Inc.

217- J FOURTH ST., N.E., CANTON 2, OHIO

for the specification consider these features

FIRE PROOF
WEAR PROOF
FADE PROOF
SCRATCH PROOF
ACID PROOF

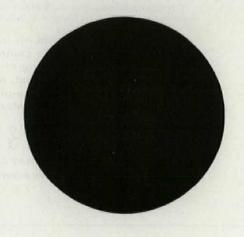
And is available in more than 30 attractive colors.



Here's the

BIG TRUTH

about boilers



*The only safe way to specify boilers is on nominal capacity to operate at "cruising speed"

REWARE reserve plus rating

guarantees dependability, higher efficiency, lower costs, longer life—because it means "cruising speed" operation.

■ There's a lot of confusion in sizing boilers today because rating methods have not been brought into the open with a clear-cut definition. That's all changed with Kewanee Reserve Plus Rating. Here for the first time these truths are stated: Only nominal-rated boilers with built-in reserve safely provide efficiency—low maintenance—dependability—longer life. Only nominal-rated boilers safely provide for fluctuating loads—emergencies—expansion.

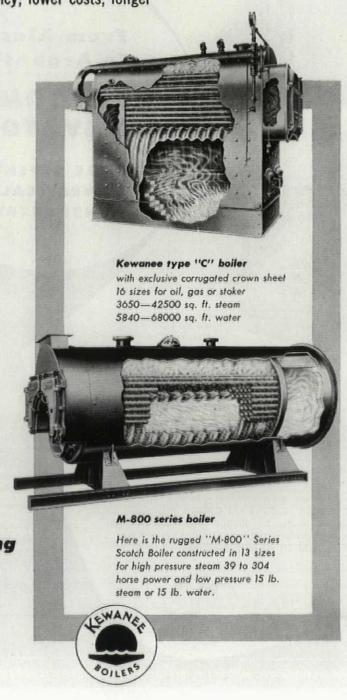
So when you consider "bidding data" be sure you compare like examples . . . know whether ratings are based on maximum capacity or nominal capacity.

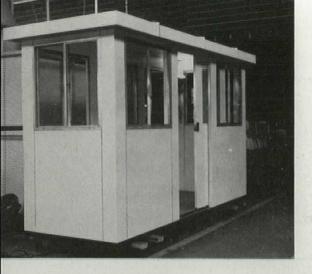
Follow the Kewanee Reserve Plus Rating Plan which is based on the commercial code of the Steel Boiler Institute. Kewanee Reserve Plus certifies 50% or more extra power for pick-up and additional capacity. Kewanee gives you complete data and dimensions, so you can realistically consider sizing requirements.

You can count on KEWANEE engineering

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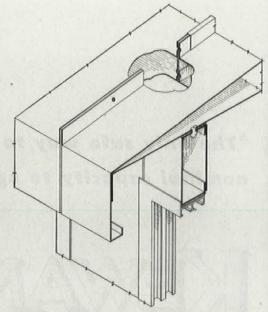




NEW PRODUCTS continued

PREFAB GATE HOUSE porcelain-enameled inside and out; stands up on its own four walls

Shipped with its modular panels knock-down or fully assembled, the *Erie Gate House* is an efficient, crisp guard building for factory yards, toll gates or drive-in theaters. No special foundation has to be laid for the structure; it can be set over any existing level surface. Its flanged panels, fabricated of 16-ga. steel with a 2"-thick blanket of glass-



fiber insulation as a core, are load-bearing, thanks to rigid sandwich construction and lapped-joint arrangement. The hip roof ceiling panels as well as side walls are insulated with glass fiber, and the building is furnished with two swivel lamps and two double electric outlets. Metal 2 x 3 angles frame the floor, which is made of marine-quality plywood covered with linoleum or asphalt tile. The complete 4'-wide x 11'-long x 7'-high structure (two-attendant size) costs \$2,425 assembled: \$2,150 in sections for erection by local labor. (Prices are fob plant.) Extras include a desk table (\$35), stool (\$10), built-in heater (\$75), portable heater (\$35) and outside light troughs (\$80). Maintenance, even in smazeplagued industrial areas, is no problem since acid-resistant porcelain enamel protects the exterior as well as inside of the gate house and weather-resistant aluminum is used for the sliding window sash.

Manufacturer: Erie Enameling Co., Erie, Pa.

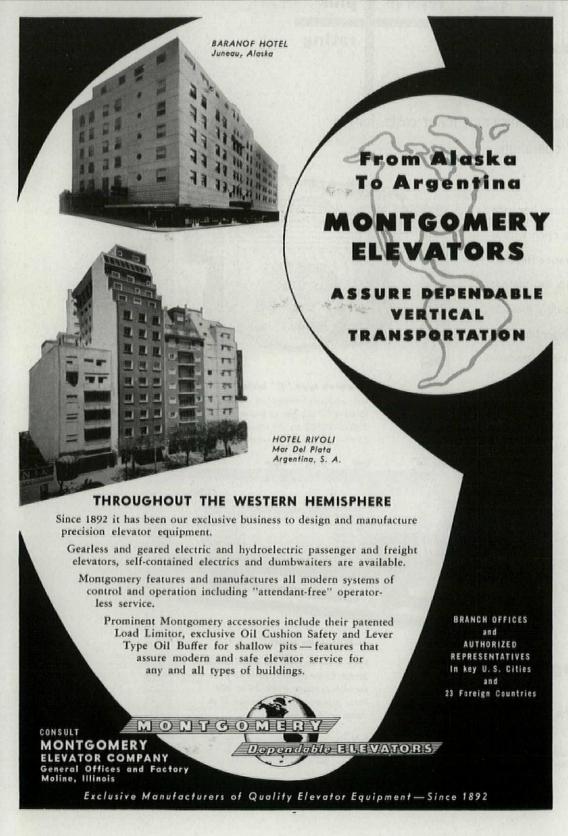
VINYL RIBBON wrapped on the bias to keep post-tensioning wires from binding to concrete

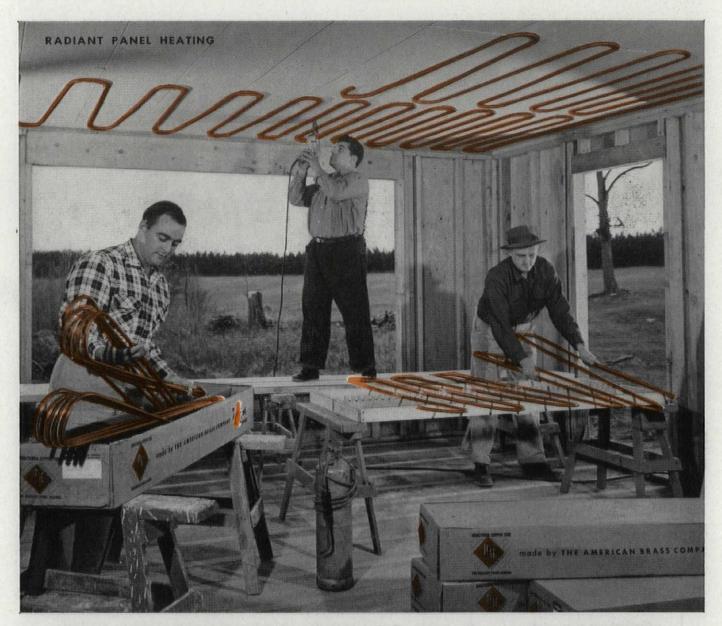
To prevent the wire groups used in post-tension construction from bonding to concrete, Prestressing, Inc. has devised a friction-minimizer that is as easy to handle as it is effective. The firm coats each wire group with heavy grease and wraps them with Aeroflex V plastic stripping. This thin, pliable vinyl comes in 4'-wide coils of 600 lin. ft. The price is 81¢ per ft. in the 0.003" thickness.

Manufacturer: Anchor Plastics Co., 36-36 36th St., Long Island City 6, N.Y.

continued on p. 208







New Anaconda pre-formed panel grids cut costs



1. PG's weigh only 10 lb. each – are packed 4 to a carton, ready to install.

2. Center-to-center spacing is readily adjusted to design requirements.

3. PG's are straight and true—no sags or dips — make plastering easier.

These men are putting in PG's (Panel Grids)—developed by The American Brass Company to make radiant panel heating systems more practical than ever . . . in rust-free copper.

These men will complete this job and be on the next one in much less time than it would have taken with coiled or straight length tubing. To the builder and heating contractor this means more jobs at lower costs.

They are installing a new Anaconda product—PG's**. These are pre-formed radiant panel heating grids, ready for installation. They do away with tiresome on-the-job bending and awkward "stringing up." For ceiling work, PG's contain 50 linear feet of %" Type L ANACONDA Copper Tube. PG's are pre-formed to common 6" c-c spacing. They are con-

tracted or extended easily by hand to meet all desired spacing requirements within a range of 4½" to 12" c-c.

Publication C-6 gives all the facts about this revolutionary new develop-

ment in panel piping. Write for your copy to The American Brass Company, Waterbury 20, Conn.

ANACONDA®

Copper Tube PRE-FORMED Panel Grids for Radiant Panel Heating

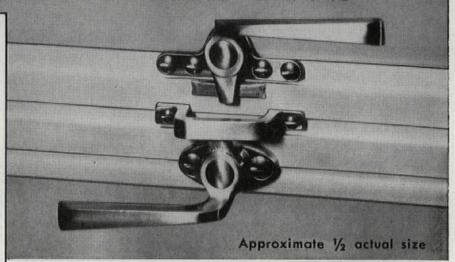
Visit The American Brass Company exhibit (spaces 145-146) at the NAHB Exposition—Conrad Hilton Hotel, Chicago, Illinois, See for yourself how PG's cut radiant heating installation costs.

Where the other services also count-it's always RAYLEY WINDOW:



Other Premium Features that put this window in a class by itself

- -Carries Quality Approved Seal of the Aluminum Window Mfgrs. Ass'n. for materials, construction, strength of sections and air infiltration.
- -Modern Appearance.
- -Economical-Painting unnecessary.
- -Permanent-Long carefree life.
- -Simplicity-No complicated mechanism.
- -Adaptable to all types of construction.
- -Glazing outside-flat surface
- -Extra deep sections—Accommodate "Thermopane" or "Twindow"
- -Easily washed from inside.
- -Prepared for screens.
- -Permits use of accessories, such as draperies, shades, curtains, venetian blinds or awnings.



Even To The Details - quality points like this hardware have earned a preference for Bayley Aluminum Projected Windows

A fine quality product is the first essential to a truly satisfactory relationship. Bayley has never lost sight of this fundamental, even though they earned, and have enjoyed for many years, an unexcelled reputation for better service through all the building stages. This is shown by the fine-point attention given to every detail of Bayley Window design and construction.

For example, note the mechanically simple, carefree design of these sturdy, positive operating white bronze handles. They fit neatly to the flat surface of the window and are securely attached with screws threaded in grommets embedded in the section. This is only one of the many premium features that is earning such widespread favor for Bayley Aluminum Projected Windows for all classes of buildings.

Regardless of your window requirements you will find extra values in Bayley's years of specialized window experience. So discuss your needs with us. Write or phone.

See Bayley in Sweet's. Complete catalogs on aluminum windows, 16a/Bay; steel windows, 16b/Ba; Saf-T-Gard Hospital Detention Window, 16b/Bay.





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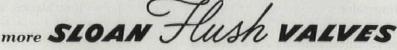
Washington 16



DENVER SALUTES "MILE HIGH CENTER"

• Genius has scored another win by giving Denver its new MILE HIGH CENTER—an outstanding architectural achievement of significant benefit to owners and occupants, and also a stimulant to citizenry pride. The sloping site of the "Center" is dominated by a 23-story office tower surrounded by a plaza which extends beneath it. Bordering the plaza on one side is a bank building. On the higher street level is a new airline downtown office and below it a restaurant facing the plaza. The all-glass curtain wall of the impressive office

tower is interrupted only by gray cast-aluminum covering the structural columns and beams, and the off-white porcelain enamel horizontals and verticals which encase the heating and cooling system. All windows are fixed and will be washed from a traveling platform which runs up and down the face of the structure. SLOAN Flush VALVES, famous for efficiency, durability and economy, were selected for installation throughout Mile High Center—more evidence of preference that explains why...

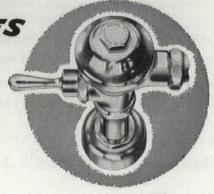


are sold than all other makes combined

SLOAN VALVE COMPANY · CHICAGO · ILLINOIS-

Another achievement in efficiency, endurance and economy is the SLOAN Act-O-Matic SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging, No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the Act-O-Matic—the better shower head for better bathing.

Write for completely descriptive folder



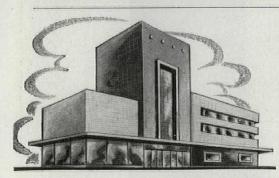
NEW PRODUCTS continued





Special densities and thicknesses of glass-fiber insulation have been engineered for different applications.





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porcelain
enamel



Let's suppose you are designing a spandrel area and are looking for a material to meet these requirements:

- · Light weight
- Colorful
- · Full weather resistance
- Economical

Architectural Porcelain is your answer... it measures up to all of these requirements and more, too! A truly versatile building material offering complete weather resistance and guaranteed non-fading color.

Specify Davidson Architectural Porcelain for your next building... a material to make your design sparkle! Our standard panels have been used with beautiful results on schools, hospitals, stores and public buildings... and if you require a filled panel—specify Davidson VITROCK—this panel has no equal!

Our brochure shows many applications, construction details, textures and colors, we hope you will write for it.



Davidson ENAMEL PRODUCTS, INC.

GLASS-FIBER INSULATION tailored to meet varied construction needs

Resilient or stiff, dense or airy, thick or skinny, plain or faced, the *Aerocor Fiber-glas* products now being produced by Owens-Corning can meet any conceivable insulation need. Five of these new firesafe materials are especially fabricated for the building field:

Aerowrap, a soft resilient padding, is simply wrapped around cold (sub-0°) or hot (up to 600° F.) pipes in any necessary thickness. Installed costs are said to be less than those for preformed insulations. Total cost of insulating a 4" pipe with 1"-thick Aerowrap—including attachment materials and corrugated aluminum jacket—would run about 50¢ per lin. ft.

Flexible Duct Insulation is a lightweight thermal and acoustical fibrous mat prepared for application to the outside of warm-air or air-conditioning ducts. Supplied plain or with glued-on facings (some are vapor barriers) the material costs 5¢ to 35¢ per sq. ft., depending on thickness, density and type of sheath.

Flexible Duct Liner is designed as an inside protective coating for air-conditioning ducts. It absorbs sound as well as acting as thermal insulation. Because it is applied on the inside of the duct, the metal duct walls serve as their own vapor barrier, preventing condensation from forming on ducts which carry cool air through humid rooms. It costs 16¢ to 26¢ per sq. ft., according to thickness.

Metal Building Insulation is a lightweight resilient blanket bonded with thermosetting resin. It has a facing adhered flush to the edges. Used in metal buildings between siding or roofing and structural members, it costs 5¢ to 15¢ per sq. ft., depending on type of material and installation conditions.

Sonocor is precut in pads to fit behind standard perforated acoustical ceiling pans. Weighing about 4 oz. each, the soft, porous pads have high sound absorption. Prices for acoustical ceilings utilizing Sonocor range from 40¢ to \$1.40 per sq. ft., depending on type of metal pans and suspension system. Sonocor is also available in rolls.

Manufacturer: Owens-Corning Fiberglas Corp., Toledo, Ohio. Technical Publications p. 212

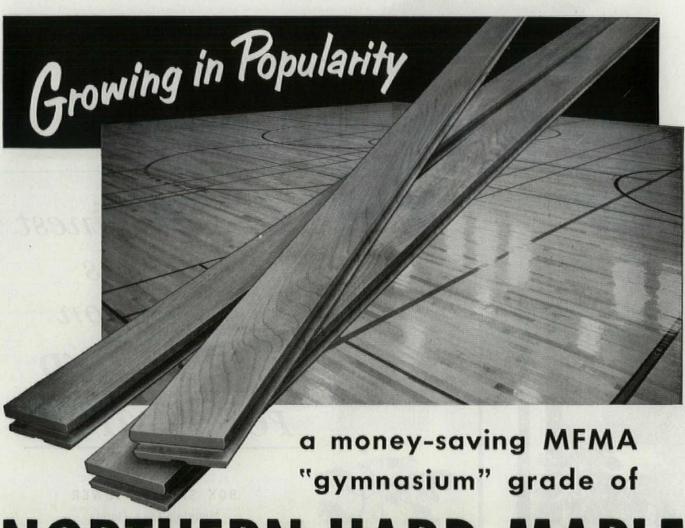


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• Approved by architects and school authorities in leading cities for gymnasium floors, this fine (and relatively new) "combination grade," officially known as Second and Better, is fast becoming a favorite school specification. IT DESERVES THIS NEW POPULARITY. It matches MFMA First Grade in every performance attribute, yet costs less.

Held to rigid MFMA standards of accuracy and of soundness of wood, it actually gives you 50% or better of First Grade, blended with the Second Grade areas in Nature's own colorful combinations of interesting grain patterns. Specify Second and Better, the ideal "gymnasium" grade, with fullest confidence. It makes a splendid floor of enduring beauty. YOU'LL SAVE MONEY WISELY.



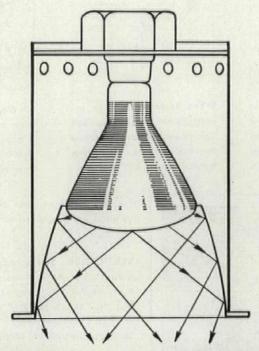
Suite 564, Pure Oil Bldg., 35 East Wacker Drive CHICAGO 1, ILLINOIS

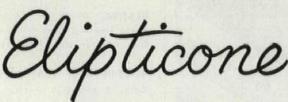


See Sweet's

(Arch. 12K-MA)
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MFMA-approved
list of floor finishes.



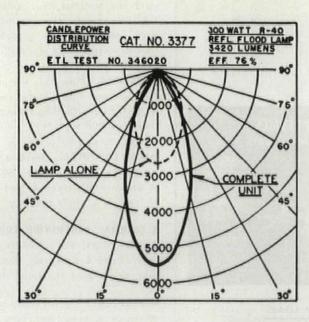






Patent Pending

DOUBLES LIGHT OUTPUT



Unsurpassed performance and comfort in incandescent lighting is achieved by this recessed Elipticone Light Multiplier.

95% of the light output is directed below 45°. Wasteful glare-zone light is converted into useful work-zone light. As a result, effective light intensities are doubled or operating costs are halved.

So complete is the shielding that, in normal viewing positions, a dramatic unawareness of the light source results.

The inverted reflecting surface is selfcleaning. Relamping is through bottom opening by hand or with lamp changer.

Full data on the unit is on page 25 of the ART METAL catalog. Write for a copy.

THE ART METAL COMPANY



Manufacturers of Engineered Incandescent Lighting

TECHNICAL PUBLICATIONS

STANDARDIZATION. Through History with Standards. American Standards Assn., 70 E. 45th St., New York 17, N.Y. 18 pp. $4\frac{1}{2}$ " x 8"

A complex and portentous matter for industry, standardization is treated to a lighthearted biography in this little book. Similar in style to the wonderful "Five Sided Post Hole" published by the ASA last year, the cartoon-illustrated history points up, even in its sotto voce, the inconveniences, useless con-



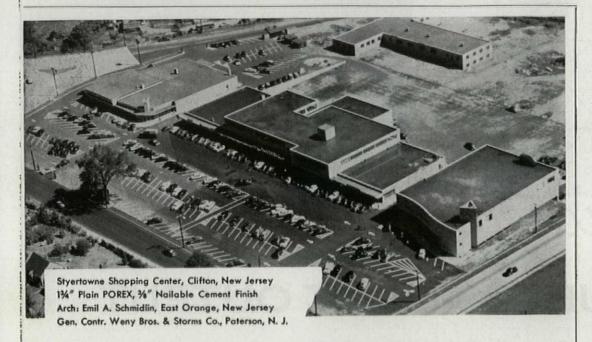
An affempt at standards was made in 1120 by Henry I of England, who prescribed that the ell, a cloth measurement, be gauged to his arm length.



When Boston had to be rebuilt quickly after the 1689 fire, it became a civic crime for brickmakers to violate dimensions: 9" x 4" x 4"



Eli Whitney became the first mass producer when he filled a government contract with 10,000 guns that had interchangeable parts.



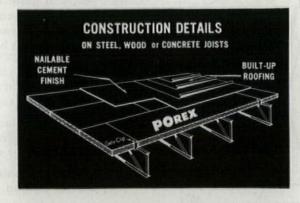
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Plain POREX for short spans and Composite POREX for long spans are also ideal for Auditoriums, Gymnasiums, Schools, Armories and many other uses. For floors, precast lightweight concrete channel slabs and plank are available.



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Type of POREX	Thickness Slab Finish		Weight lbs/ sq. ft.	Safe loads lbs/ sq. ft. Span 1'4" 2'0" 3'4" 6' 8'				
Plain	13/4"	1/4"	7	100	60	_	_	-
Plain	3"	1/4"	10		100	50	-	-
Composite	3"	14"	14	-	-	-	100	60

PERETE MANUFACTURING CO., North Arlington, N.J.

Precast lightweight concrete products since 1920

fusion and downright tragedies that can be avoided by standardized production of materials.

VENTILATION. The Standard Test Code for Centrifugal and Axial Fans, NAFM Bul. No. 110. 2 pp. 8½" x 11". Laboratory Standards, NAFM Bul. No. 113. 2 pp. 8½" x 11". National Assn. of Fan Manufacturers, Inc., 2159 Guardian Building, Detroit 26, Mich.

HEATING. Guide for Calculations of Electric Space Heating. Cavalier Corp., Electric Heater Div., Chattanooga 2, Tenn. 20 pp. 81/2" x 11"

BUILT-UP ROOF CONSTRUCTION. Permalume Data. 5 pp. 8½" x 11". Waterproofing and Moisture-Vapor Barriers. 8 pp. 8½" x 11". Grems Manufacturing Co., 5635 S. 6th St., Klamath Falls, Ore.

LAMINATED LUMBER. The Procedure, Equipment and Material Requirements for Laminating Lumber—A Symposium. Southern Pine Assn., National Bank of Commerce Building, New Orleans, La. 36 pp. 81/2" x 11"

INSULATION. Fiberglas Perimeter Insulations for Concrete Floor Slabs and Crawl Spaces, BL6.A4. Owens-Corning Fiberglas Corp., Toledo, Ohio. 8 pp. 8½" x 11"

WIRING COMPUTER. Hatfield Wire Data-Wire Weight Computer. Hatfield Wire & Cable, Div. of Continental Copper & Steel Industries, Inc., Hillside, N.J. Slide rule, 61/2" × 3"

ELECTRICAL GENERATING EQUIPMENT. Measurement Factors of a Company and Its Product. D. W. Onan & Sons, Inc., 2600 University Ave., S.E., Minneapolis 14, Minn. 36 pp. 11" x 8½"

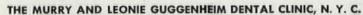
GENERATORS. Electric Generating Plants. D. W. Onan & Sons, Inc., 2600 University Ave., S.E., Minneapolis 14, Minn. 26 pp. 4" x 8"

ELECTRICAL CONTROLS. Federal Noark Control Centers. Federal Electric Products Co., 50 Paris St., Newark 5, N.J. 16 pp. 81/2" x 11"

INSTRUMENTS. Temperature Control Systems, Bul. F 6149. Barber-Colman Co., Rockford, III. 8 pp. 81/2" x 11"

continued on p. 216





Office of YORK & SAWYER · Architects · KIFF, COLEAN, VOSS & SOUDER. Gen. Cont.: CAULDWELL · WINDGATE, both of New York City. Sheet Metal Cont.: SOBEL & KRAUS, Bronx, N. Y. Dist.: SERVICE METAL & ROOFING SUPPLY CORP., Brooklyn, N. Y.



Another case of COPPER where it counts!



10,000 LBS. OF REVERE SHEET COPPER were used for the standing seam roof, valleys, gutters and base flashing. Note expansion joints in gutters 32 feet apart.



PREFABRICATED PANS of 16 oz. Revere Copper being fastened into place with cleats, using two nails per cleat, Pans are 17 ¼" wide by 8' long and attached top and bottom with loose lock cross seams

When the original roof was put on the Guggenheim Clinic a nonmetallic material was used but the stepped cap flashing was copper. Wear got to the roof and its replacement was necessary. It is interesting to note that in replacing the roof with non-rusting, enduring Revere Copper the Architects and Contractor examined the copper cap flashing and found it in such splendid condition that it was feasible to leave it in place to continue its efficient job of protection for many more years. Not only was money saved for the client but it is a tribute to the

Not only was money saved for the client but it is a tribute to the lasting qualities of copper and the flexibility of this metal in building construction that it could be thus utilized.

Copper is the metal to keep you out of trouble. You don't take chances with copper. Its enduring qualities have been proven for centuries.

There is not another metal or alloy that has all of the desirable construction characteristics of copper. Sheet metal contractors prefer to work with it for it is readily cut and formed into any shape. Copper solders beautifully and is as modern as the most modernly designed structure.

Be safe, be sure, write "Revere Copper" into your specs. A Revere Distributor near you stocks Revere Sheet, Strip or Roll Copper for flashing and roofing. Ask him about Revere Keystone Thru-Wall Flashing* and the new Revere-Keystone 2-Piece Cap Flashing.** And, if you have technical problems, he will put you in touch with Revere's Technical Advisory Service.

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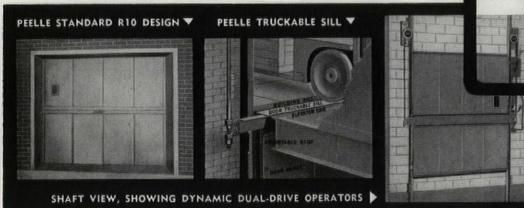
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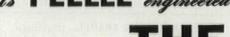


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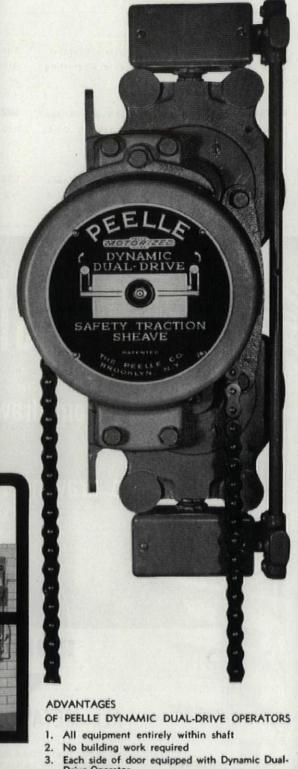
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- Each side of door equipped with Dynamic Dual-Drive Operator

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PORGELAIN ENAMEL. Erie Custom-Prefabricated Porcelain Enamel. The Erie Enameling Co., Erie, Pa. 8 pp. 8½" x 11"

METAL TRIM. Architectural Metal Trim. Knapp Bros. Manufacturing Co., Cincinnati 16, Ohio. 12 pp. 8½" x 11"

GLASS-FIBER INSULATION. A Manual of Ideas, Applications and Facts for Users of L-O-F Super-Fine Fiber-Glass. Libbey-Owens-Ford Glass Co., Fiber-Glass Div., Toledo 3, Ohio. 14 pp. 81/2" x 11"

GREENHOUSE PLAN. Reinforced Plastic Greenhouse. Monsanto Chemical Co., Texas City, Tex. 8 pp. 81/2" x 11"

LOAD-BEARING FACING TILE. Natco Uniwall Facing Tile for Single Unit Wall Construction. Technical Bul. UW 100. Natco Corp., 411 Seventh Ave., Pittsburgh 19, Pa. 4 pp. 81/2" x 11"

HEATING. Guide to the Selection and Use of Portable Space Heaters. American Air Filter Co., Inc., Moline, III. 36 pp. 5" x 81/2"

HEATING. Dravo Paraflo Space Heater, Bul. 550. Dravo Corp., 1203 Dravo Building, Pittsburgh 22, Pa. 4 pp. 81/2" x 11"

HEATING. Eclipse Fan-type Combination Gas-Oil Burners, Bul. R-100. Eclipse Fuel Engineering Co., Rockford, III. 4 pp. 8/2" x 11"

UNIT HEATERS. Series G, Humphrey Automatic Gas Unit Heaters. General Gas Light Co., Kalamazoo, Mich. 4 pp. 81/2" x 11"

LIGHTING. Handbook of Cold Cathode Fluorescent Lighting. Fluorescent Lighting Assn. 100 W. 42nd St., New York 36, N.Y. 51 pp. 81/2" x 11"

LIGHTING. Cutler Cold Cathode Mirac-O-Lite. Cutler Light Manufacturing Co., 2026-28 N. 22nd St., Philadelphia 21, Pa. 18 pp. 81/2" x 11"

INSULATION. Kaylo Heat Insulation. Owens-Corning Fiberglas Corp., Toledo 1, Ohio. 8 pp. 81/5" x 11"

GENERATORS AND PROCESS EQUIPMENT. Union Steam Generators and Allied Equipment, Bul. GB-153. Union Iron Works, Erie, Pa. 20 pp. 81/2" x 11"

MATERIALS HANDLING. Rapistan Material Flow Conveyors, Catalogue GC-52. The Rapids-Standard Co., Inc., Grand Rapids 2, Mich. 28 pp. $81/2'' \times 11''$

RELIEF VALVES. Selection and Sizing Pressure Relief Valves to Comply with ASME Boiler Code Requirements. McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18, III. 23 pp. 81/2" x 11"

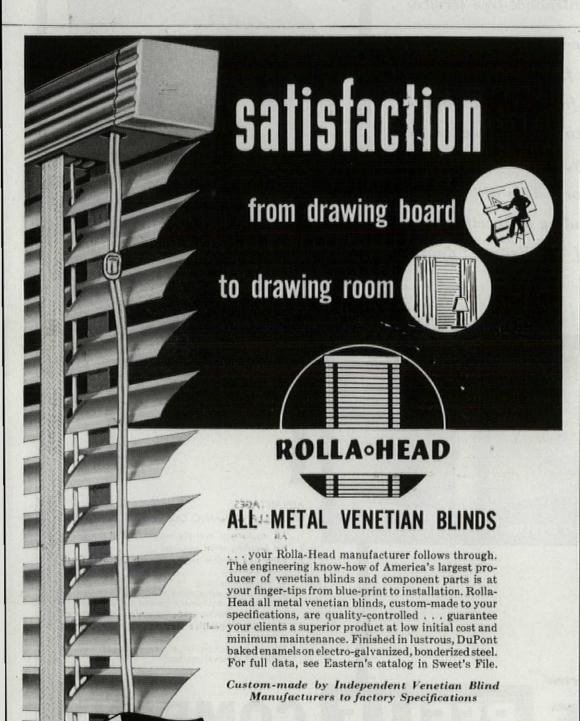
WATERPROOFING MEMBRANE. Let's Look at Membranes. Twinsburg-Mîller Corp., Box 207, Twinsburg, Ohio. 13 pp. 81/2" x 11"

MODERNIZING PLANT FAGILITIES. Basic Planning—Plant Modernization and Expansion. Walter Kidde Constructors, Inc., 140 Cedar St., New York 12, N.Y. 12 pp. 81/2" x 11"

PORCELAIN ENAMEL. Davidson Architectural Porcelain Enamel. Davidson Enamel Products, Inc., Architectural Div., Dept. J-53, Lima, Ohio. 12 pp. 81/2" x 11"

TRACTOR CONTROLS. Caterpillar Hydraulic Controls, Form 30794. Caterpillar Tractor Co., Peoria 8, III. 8 pp. 81/2" x 11"

continued on p. 220



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GENERAL OFFICES & PLANT: 1601 Wicomico Street, Baltimore 30, Maryland ATLANTA: 1486 Lakewood Ave., S.E. NEW YORK: 771 3rd Ave.,

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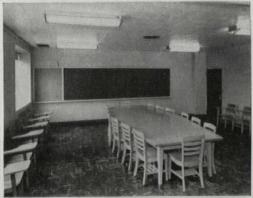
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Below: Reading Room and Interconnecting Lounge



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(b41

3 examples of the architectural adaptability of glass in present-day construction

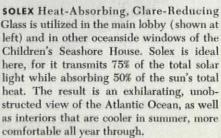


THE CHILDREN'S SEASHORE HOUSE at Atlantic City, N. J., is an excellent example of the architectural adaptability of glass in the modern hospital. Among the Pittsburgh Products used are clear Polished Plate Glass, Solex Heat-Absorbing Glass, Pennvernon Window Glass, Nucite Chalkboards, Copper-Back Mirrors, X-Ray Lead Glass, and Herculite sliding showcase doors. These products contribute importantly to the creation of a healthy "non-hospital" atmosphere, so necessary in an institution devoted exclusively to the care and rehabilitation of invalid children. Architect: Sydney E. Martin; Associate Architects: Harry G. Stewart and Robert W. Noble, Philadelphia, Pa.



IN COMMERCIAL BUILDINGS, like this hardware store with its emphasis on open-vision, Pittsburgh Glass is playing an ever-expanding role as an architectural medium of great flexibility. This store front is glazed with %" Polished Plate Glass, 216" high. Herculite Doors further emphasize its openness. The metal used is the finest obtainable—Pittco De Luxe Store Front Metal. Architects: Benjamin Shapiro and Robert Tisdale, St. Louis, Missouri.





Design it better with Pittsburgh Glass



Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company products...Sections 7a, 13e, 15b, 16b, 21.

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PITTSBURGH PLATE GLASS COMPANY

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PNEUMATIC TUBE AND CONVEYOR SYSTEMS. Lamson Systems, Catalogue A-102-53-5M. Lamson Corp., Syracuse 1, N.Y. 4 pp. 8½" x 11"

PORTABLE GRANDSTANDS. Wayne Type "C" Grandstands, Catalogue 4-C. Wayne Iron Works, Wayne, Pa. 4 pp. 81/2" x 11"

CONCRETE CONSTRUCTION. Design and Construction of Lintels for Concrete Masonry Build-

ings. National Concrete Masonry Assn., 38 S. Dearborn St., Chicago 3, III. 36 pp. 81/2" x 11"

INSULATION. Insulite Industrial Insulation. Minnesota & Ontario Paper Co., 500 Baker Arcade Building, Minneapolis 2, Minn. 8 pp. 9½" x 11½"

METAL LATH. Metal Lath Centering, a Rigid Form and Reinforcing for Short Span Concrete Slabs over Concrete and Steel Joists. Technical Bul. No. 6. Metal Lath Manufacturers Assn., Engineers Building, Cleveland 14, Ohio. 4 pp. 81/2" x 11"

METAL GARAGE DOORS. Cookson Rolling Doors, Power or Manually Operated. Bul. No. 301. The Cookson Co., 1525 Cortland Ave., San Francisco 10, Calif. 12 pp. 81/2" x 11"

RUST-INHIBITING COATING. Got Rust Problems? Whip 'em . . . with Rustmaster. Technical Bul. 5309. General Paint Corp., 2627 Army St., San Francisco 19, Calif. 4 pp. 81/2" x 11"

ASPHALTIC SURFAGING. Laykold Tennis Courts. American Bitumuls & Asphalt Co., 200 Bush St., San Francisco 4, Calif. 12 pp. 81/2" x 11"

ADHESIVES. 3M Company Adhesives—Coatings
—Sealers. Minnesota Mining & Manufacturing
Co., Adhesives & Coatings Div., 411 Piquette
Ave., Detroit 2, Mich. 8 pp. 8½" x 11"

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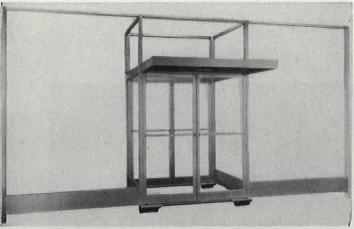


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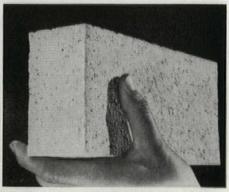
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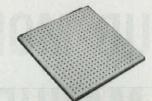
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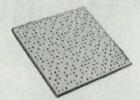
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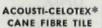
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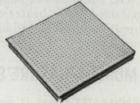
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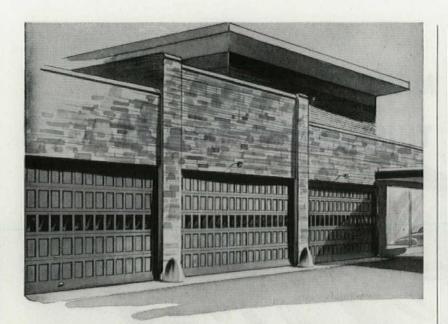
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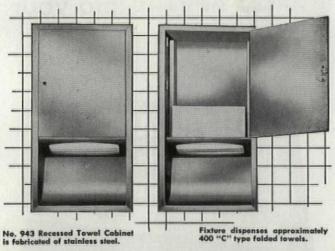
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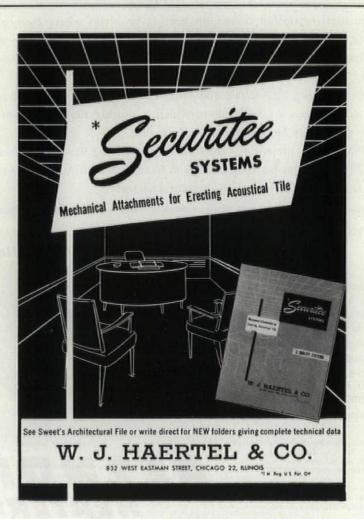
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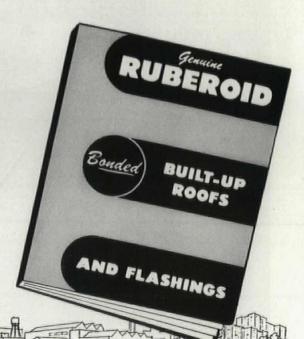


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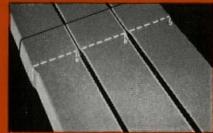


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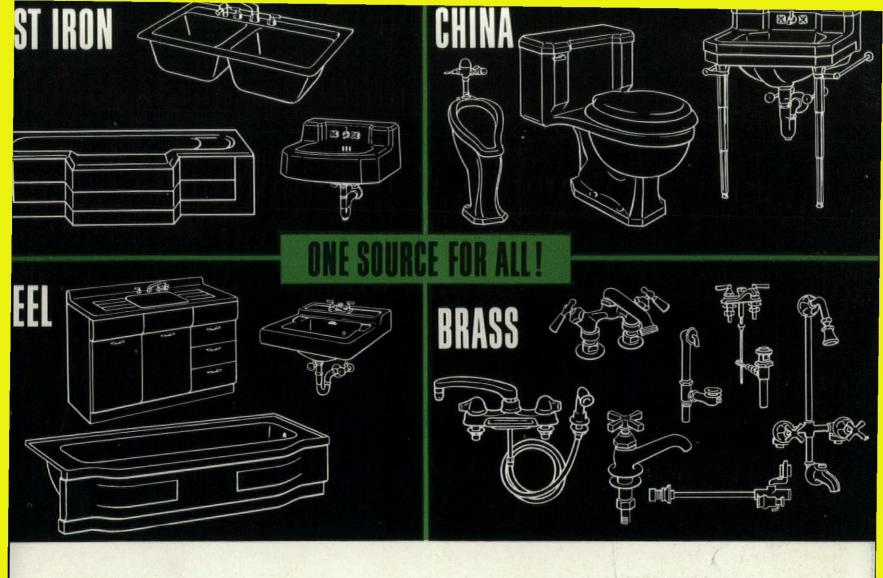
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Yes, when next you specify tile flooring, consider the many advantages offered by MATICO Parquetry. Parquetry comes in four distinctive shades — walnut, mahogany, oak and maple — in 9 x 9, 1/8" sizes. Write Department 6-1 for details and specification data today!



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