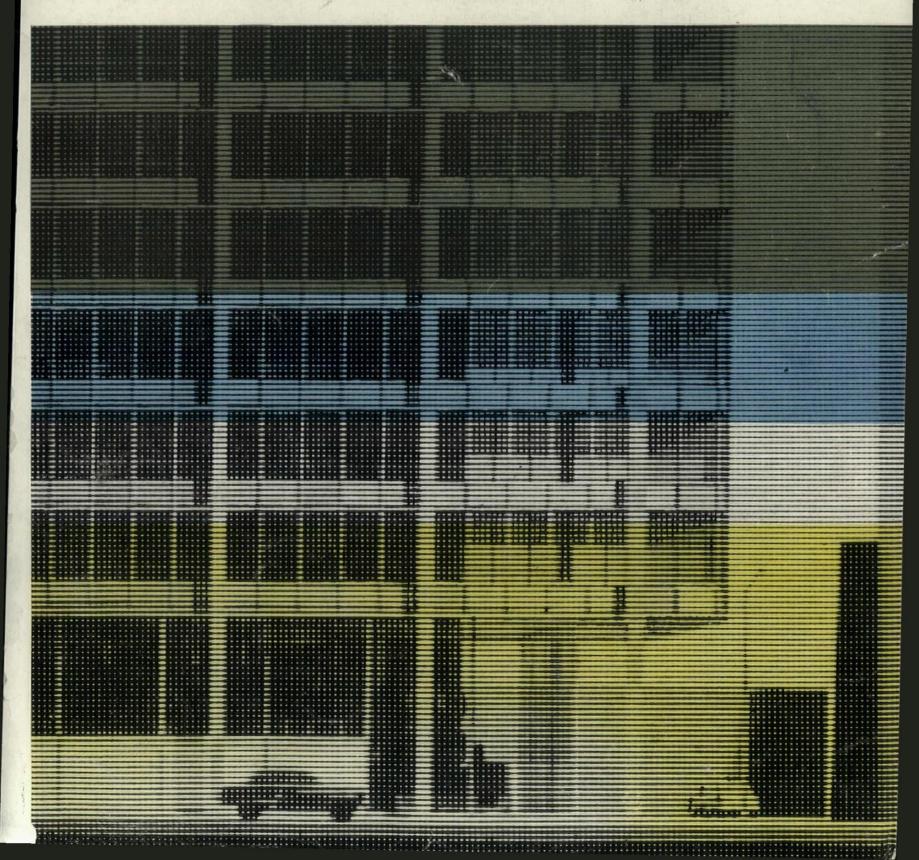
# architectural FORUM

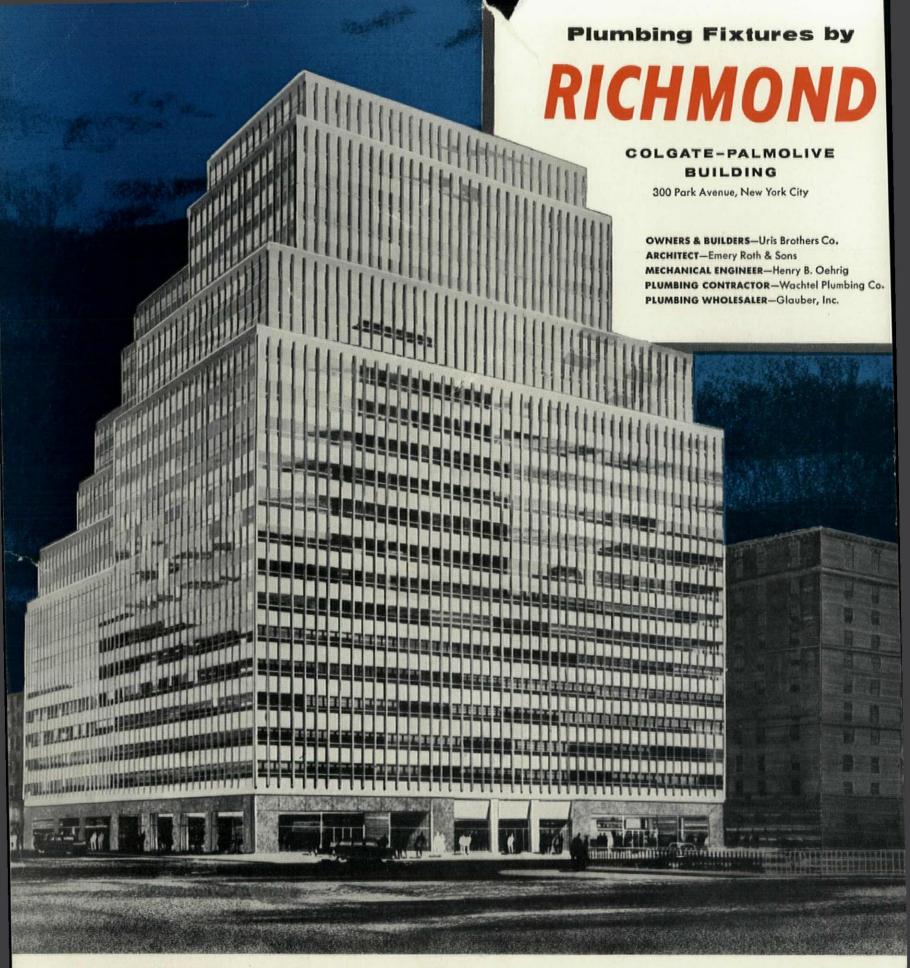
MINNEAPOLIS COLLEGE OF AR

the magazine of building

**MAY 1955** 

For community leaders, three community buildings (p. 130).... For modern architects, a challenge by Pietro Belluschi (p. 162).... For Inland Steel, 19 office floors without columns (below & p. 114)





RICHMOND FIXTURES FOR COLGATE - PALMOLIVE BUILDING









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# architectural FORUM

the magazine of building

**MAY 1955** 

MINNEAPOLIS COLLEGE OF ART

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Cover: Design by Ray Komai photo of Inland Steel building by Ezra Stoller

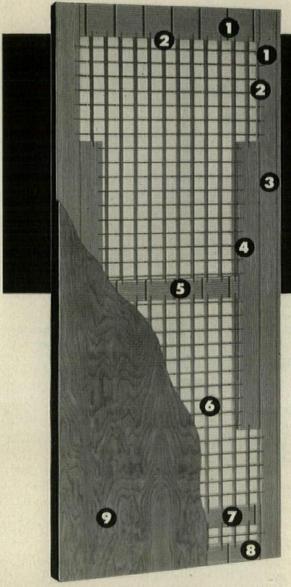
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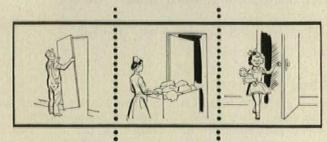
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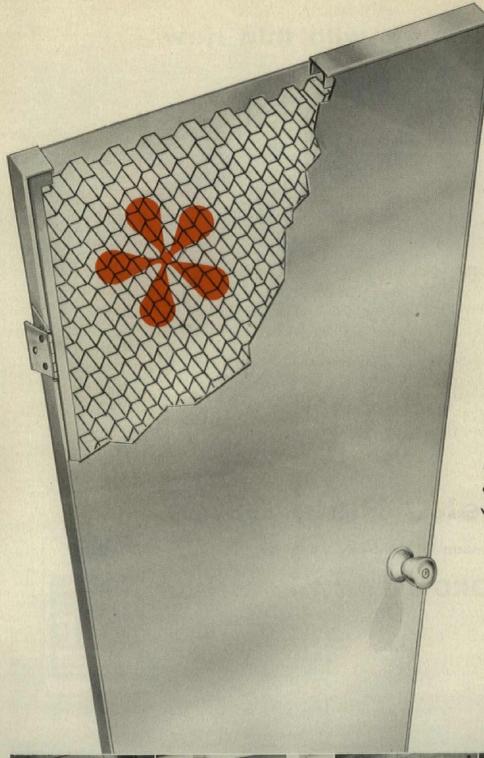
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Elementary School, North Miami, Fla. Architect: Wahl Snyder



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Architect: Polevitsky, Johnson
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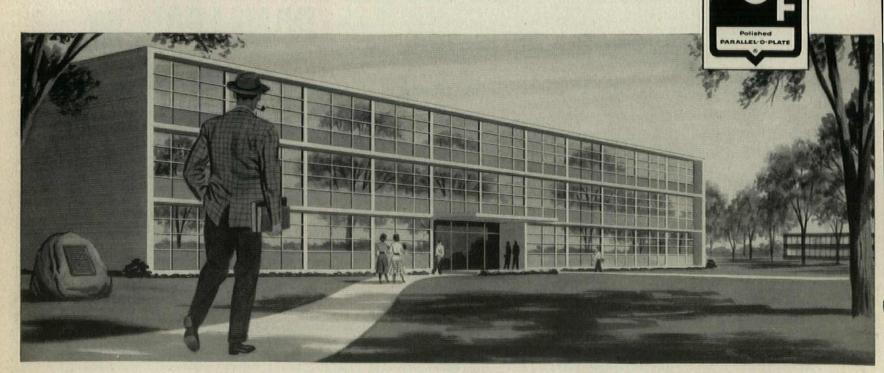
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Acoustical hung ceiling holds supply ducts and registers for distributing air cooled by G-E packaged units. Furred space itself acts as plenum for return air, entirely eliminating need for second set of ducts.

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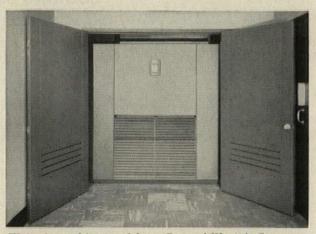
Fred Safran, well-known New York architect, was faced with the problem of remodelling three floors of a 33-year-old Brooklyn building into an attractive, air-conditioned sales and service center for a large business machine company.

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THE PRUDENTIAL INSURANCE COMPANY OF AMERICA the building are ultra-modern: automatic high speed elevators, high capacity escalators, complete air conditioning, acoustical ceilings, recessed fluorescent lighting. On the main floor is an auditorium and lounge, separated by folding partitions. Combined, the two can accommodate 1000 persons. Public facilities include banking, shopping, eating, and parking for about 1000 cars. As are thousands of other fine buildings, including the new Prudential Building in Chicago, this one is completely equipped with SLOAN Flush VALVES-additional evidence that explains why ...



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# NEWS

# Washington report: White House may be enlarged; "windfalls not illegal per se"

As government influence and regulation in building increases, inevitably the need for more building in government also mounts. Last month it broke out at the White House level. Robert Heller & Associates, Cleveland management consultants, were retained to study future office space requirements for the President's staff and the possibility of new construction to enlarge the Executive Mansion west wing without changing the basic appearance of the building. In charge of the Heller studies: Vice President Gilman B. Allen.

President Truman requested, but was refused a \$1.6 million appropriation for tripling the space in west wing in 1946. Whether Ike would fare better could not be guessed until the Heller studies were finished and translated into specific building proposals and cost estimates that Congress could consider.

On more immediate government-and-construction problems last month Washington witnessed these developments:

FHA scandals. A year after the administration launched its FHA probes on April 12, '54, a Justice Dept. official admitted 608 "windfalls" may not necessarily be violations of the law after all. Said Assistant Attorney General W. E. Burger in House appropriations committee testimony released last month: "There may be nothing per se illegal about the existence of a windfall profit. . . . All the theories and concepts of what our remedies may be, if we have any, involve a completely new set of legal ideas."

In view of such top-level opinion there was nothing startling in the box score after a full year of FHA's best efforts: windfall recoveries, none; corporations placed in control of FHA through election or appointment of directors named by FHA, none; rents reduced in 608 projects on order of FHA because of windfall situations, none.

But, stimulated by the vast publicity, if not the results of the Republican probes, the Democrats planned another investigation. Primed with a \$100,000 appropriation, Senator John Sparkman (Ala.), the new chairman of the housing subcommittee of the Senate banking committee, planned hearings on "all phases" of the government housing program, and particularly on: 1) whether the current housing boom is endangering the economy or fueling inflation; 2) the success or failure of the new urban renewal program; and 3) whether lowincome families are obtaining an adequate volume of decent housing from either private builders or public housing.

In Florida and Louisiana the FHA received bids on two large distressed 608 projects that would cause it losses of about \$924,000 and \$938,000. Added to losses of \$2.3 million on defaulted 608 projects disposed of by FHA up to Jan. 31, this put the government's debit on such projects over the \$4.1 million mark.

Peaceful atom. The congressional joint committee on atomic energy named an eight-man panel to make a comprehensive study of

peaceful atomic usages and to complete its report, including any legislative recommendations, by Jan. 31. Building and engineering were represented on the panel in the persons of George R. Brown, of Brown & Root, Houston construction firm, who also served on President Truman's materials policy commission; Dr. John R. Dunning, Columbia University dean of engineering and director of Oak Ridge Nuclear Studies Institute, and Dr. T. Keith Glennan, president of Case Institute of Technology.

Meanwhile, AEC was considering an application from Consolidated Edison Co. of New York to build an entirely unsubsidized 200,000-kw atomic energy power plant to cost about \$55 million. Four other utility groups sought O.K.s for 10% to 20% subsidies to build plants of 75,000 to 180,000-kw capacity near Chicago, Detroit, Columbus, Neb., and in western Massachusetts. These would cost about another \$150 million.

Belligerent atom. Spurred by AEC's disclosures of the menace of radioactive fallout, new efforts were launched to draft more definitive civil defense policies.

On recommendation of Defense Mobilizer Arthur Flemming, Senator Wallace Bennett (R, Utah) introduced a bill to create an 18-member body, similar to the Hoover Commission, to study dispersal and other aspects of civil defense. In addition, the President asked Congress to authorize a \$12 million emergency appropriation to develop plans

for evacuation, shelters and similar measures for more than 100 critical target cities.

Flemming was emphasizing the importance of seeing that new defense facilities are located at least 10 mi. beyond the perimeter of target areas and warned that rapid tax amortization may be denied new defense plants that do not meet this standard. One difficulty, however, was that where dispersal adds too much to production costs, plant management may prefer to skip the privilege of fast amortization.

Another suggestion for giving impetus to dispersal was that the armed services clamp down on some of their more strategic suppliers; tell them to disperse or else. This scheme has its own drawback: military officials are reluctant to jeopardize delivery schedules for materials and equipment with such crackdown threats.

# Two big insurance buildings order operatorless elevators

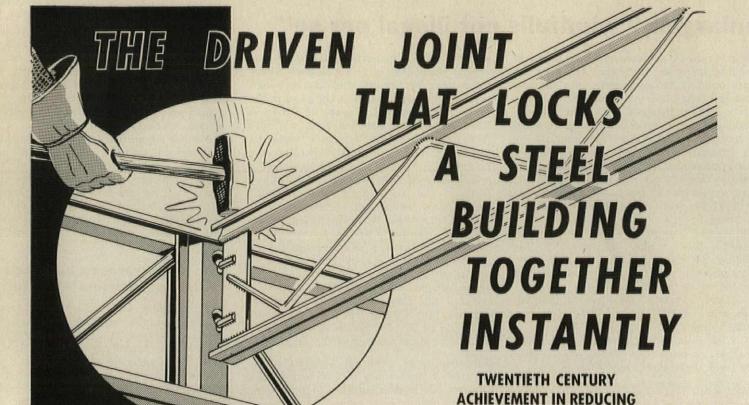
The anticipated elevator conversion revolution when major existing office buildings switch in volume to operatorless elevators seemed much closer last month after Otis Elevator Co. disclosed an order for \$1.9 million to convert 31 cars in the headquarters building of New York Life Insurance Co. to passenger control. The manufacturer said this was the largest elevator modernization contract on record. But close behind was another order for the company to convert 24 cabs in another first-class structure, the new post-World War II John Hancock Mutual Life Insurance tower in Boston. Operatingexpense savings up to \$7,000 per year per cab are claimed for such installations.



#### Labor, contractors, producers unite to boost masonry

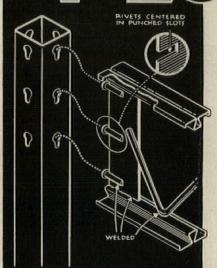
Mutual anxieties of contractor, labor and producer groups in the masonry industry over competition from metal and glass in building were translated into joint effort last month when a big promotion group, the Allied Masonry Council (AF, Oct. '54, News), was formally launched. Purposes: to exchange research findings and data on new work techniques, packaging and handling methods; to seek up-to-date—but not too flexible—building codes; to extend adoption of the 4" module in building construction and to publicize masonry construction.

Representatives of supporting groups at a first-course luncheon in New York (I to r in cut) were: President Harry C. Bates of the AFL Bricklayers, Masons & Plasterers International Union of America; President John Taheny, Mason Contractors Association of America; Board Chairman Douglas Whitlock, Structural Clay Products Institute; Managing Director Romer Shawhan, Marble Institute of America; Vice President Samuel Steinberg, Building Stone Institute and Charles Penn, representing the Indiana Limestone Institute.



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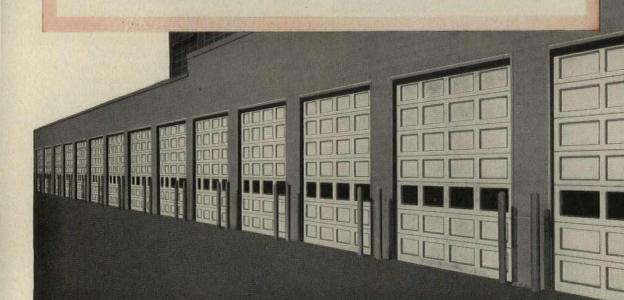
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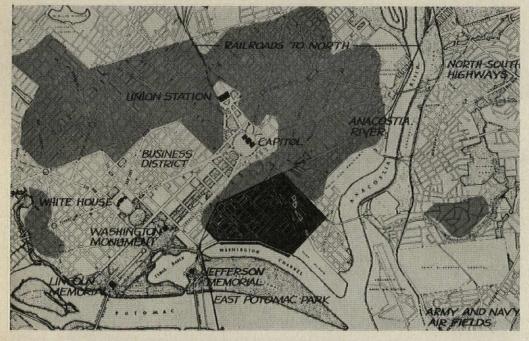
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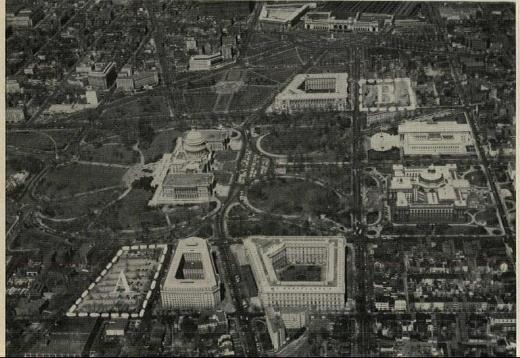
SUPER REDEVELOPMENT being nurtured by superenterprising William Zeckendorf in "Southwest area" would cost about \$500 million, include office buildings, cultural center (I).



DETERIORATING AREAS that need clearance or rehabilitation (shaded on map) surround entire Capitol-White House-business district. (Darker area: "Southwest" site.)

CAPITOL HILL aerial view shows site chosen for new House Office Building (A), and excavations started for new Senate offices (B). Just below B: the new Supreme Court building.





#### **RENEWING OUR CITIES:**

Two months ago President Eisenhower took a hand in trying to get Washington's biggest urban redevelopment project rolling.

Apparently finding no official "channels" through which to act, the President wrote to George A. Garrett, president of the year-old Federal City Council, an unofficial citizens' organization. He asked if Garrett, in that informal capacity, "would undertake to confer with the appropriate agencies in an effort to bring about a workable program" so the city's ambitious Southwest Area slum clearance and redevelopment scheme may "become a reality." Commented the President: "I understand it has been under consideration almost five years and has been the subject of active planning for some three years."

Probably no other city can look for the President of the US to use his personal influence to help it resolve the complications of its urban renewal and rejuvenation programs. But probably no other city has so much exasperating red tape, and so many public and quasi-public agencies with loose, uncertain overlapping functions that presidential prodding is the only means to unsnarl the confusion.

Lesson for others. When it comes to public works or city action, the peculiar complexities of Washington's district (municipal) government must be unique. Nevertheless, they contain lessons for planners, architects, developers and public officials in any city struggling to become a better and more efficient community during the current era of city modernization and rebuilding.

The tremendous expansion and new face that Washington has been acquiring over the past decade has come mainly from private building and renewal. But public projects also were a big growth booster, even if the fruits of the most serious public efforts—for large-scale conservation, urban renewal and redevelopment projects—may still take considerable time until the harvesting.

Few fetters on private work. The private growth might best be summarized first. That was able to proceed without any appreciably greater hurdles than private construction in any other large city. Typically, there were some speculative projects that were announced with flourishes, but never came to life and were quickly forgotten. But a great number did materialize. The Board of Trade cites construction of private buildings that added 2.5 million sq. ft. of office space to the city's stock since 1946. Nonresidential construction for the metropolitan area from 1946 through 1954 went past \$665 million.

Growth brings problems. There was also a tremendous population growth, which can seldom occur without bringing a city all sorts of civic problems. But Washington's

### Washington project gets a Presidential push

Capital's biggest redevelopment emerging from impasse, but has long road ahead;

10-year plan drawn to eradicate blight encircling heart of city

growth was phenomenal. It received a second wave of new citizens on top of the masses it attracted to staff the federal machine during the war. From 1940 to 1955 the metropolitan area population virtually doubled, rose from 967,000 to 1,827,000. From 1946 through 1954, new housing units in the area increased 201,040, or 27%, compared with an average increase of 17% for the 73 biggest metropolitan areas in the entire country.

In the face of such growth, zoning, traffic, transportation and other public service problems were inevitable. Blighting exploitation of older city areas was accentuated. The blueprint for a "workable program" for urban renewal submitted to the District Commissioners in January by rehabilitation specialists James W. Rouse and Nathaniel S. Keith tagged 11 large areas as deteriorating and in need of slum clearance, rehabilitation or conservation. Mostly these were concentrated in a wide band circling the heart of the cty (see map). Consultants Rouse and Keith outlined a ten-year program for rehabilitating or replacing 65,000 deficient dwelling units in these areas, classified 20,000 of them as presently substandard.

More agencies coming. The widely hailed Rouse-Keith report was approved in principle in March by the district commissioners, who then prepared to establish a district Office of Urban Renewal, an Urban Renewal Council and an Urban Renewal Operations Committee. But this was only a beginning, and dealt with only limited aspects of the Capital's multiple problems. Nor was the Rouse-Keith report a binding blueprint for any of the other seemingly endless agencies that complicate Washington municipal life.

These many agencies are not necessarily in competition or conflict with each other. But troubles develop when they fail to harmonize or coordinate their efforts.

Said a recent explanation from the Joint Committee on the Nation's Capital, composed of members from ten organizations concerned with Washington area planning problems: "As it is now, each public improvement is introduced individually and pushed by administrative officials with limited interests.... No one official or [agency] can define the overall objective and its elements . . . [in] the conflicting views and somewhat chaotic conditions under which the Capital is being developed."

Lagging Cinderella. Moving ahead so slowly that the President tried to help get it out of the ditch was the immense Southwest Area redevelopment. This promised urban rejuvenation to match the dreams of a municipal Ponce de Leon, would clear out 550 acres of depressing slums, replace them with an integrated magic city of the most modern

shopping, office and apartment buildings—and a \$50 million art and cultural center with a national opera and symphony hall.

Earlier Justament-Smith, Elbert Peets and others have drawn comprehensive plans for reclamation of this area (AF, Aug. '52). Now it was the charge of the District Redevelopment Land Agency, which hoped to stage its reincarnation in two major pieces—Area B and Area C—with generous Title I urban redevelopment grants from the US.

Backfire on area B. About a year ago, after taking bids from several developers, RLA decided to sell the smaller subsection, 76-acre Area B, to Norfolk Builder Ralph Bush for a \$10 million diversified housing project. But last month, after Bush learned that FHA would allow him only 5% (rather than 10%) builder-developer fees in calculating FHA mortgage limits for 90% Section 220 financing. Bush said he had "come to the parting of the ways" with RLA. But there was nothing RLA could do to hold him to the project. His land purchase contract (which had never been signed anyway) was conditioned on his ability to obtain satisfactory FHA financing. RLA officials hoped the Bush deal might still be salvaged somehow, but otherwise admitted a strikeout and the need to find another developer willing to invest a more substantial amount of his own funds-not so insistent on a deal so close to mortgaging-out.

Clearing skies for Area C. It would still be a long time, 1956 or 1957, before the President was likely to see any earth fly in Area C, but at month's end the outlook was better than when he asked Garrett to feed it oxygen.

In March, 1954, RLA signed a "memorandum of understanding" with William Zeckendorf. It agreed not to negotiate for disposal of this 300-odd-acre tract for one year (now extended to Sept. 15) while the imaginative New Yorker prepared definitive plans for a \$500 million redevelopment he claimed would be "the most ambitious city rebuilding project ever attempted in America" (AF, Mar. '54). A special reason he wanted to work in Washington and in Area C, said Zeckendorf, was that it would be a "wonderful bell cow" to demonstrate how cities everywhere could re-

continued on p. 17



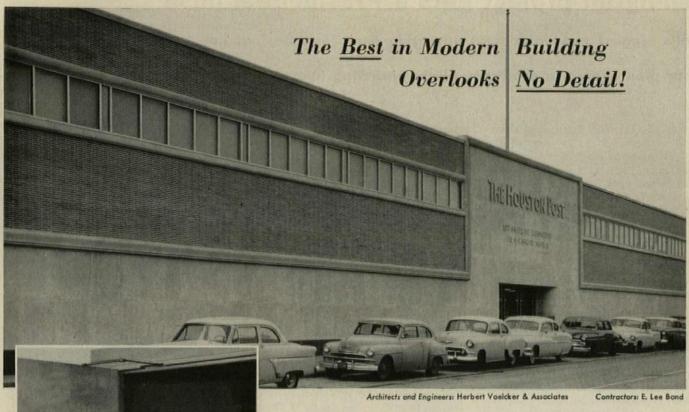
through Washington appraiser Oscar H. Beasley would cover two blocks, include two shopping and 7 office floors, bus terminal, heliport. Design by Bank Building Corp.



NATIONAL HEADQUARTERS for trade and professional groups keep Washington builders busy. Above: National Education Assn. headquarters going up from Joseph E. Saunders' designs.

WORLD'S LARGEST is the claim for 348-room motel-hotel (below) abuilding near Pentagon for Hot Shoppes, Inc., restaurant chain. Architects: Joseph G. Morgan, Edward Weihe.





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No effort was spared to achieve the fullest functional beauty...combined with heavy-duty utility required of a structure destined to be a focal-point of civic activity! The selection of Norton "Inador" closers for its interior

The selection of Norton "Inador" closers for its interior door control is an ideal example of how this twofold requirement is met. For—as a true liquid closer—the "Inador" will provide the *Post* Building with extra-long years of reliable, minimum-maintenance service...even under the "slam-bang" of constant traffic and hard use. At the same time, the concealed "Inador" construction makes possible the clean, streamlined beauty that today's architecture definitely demands!

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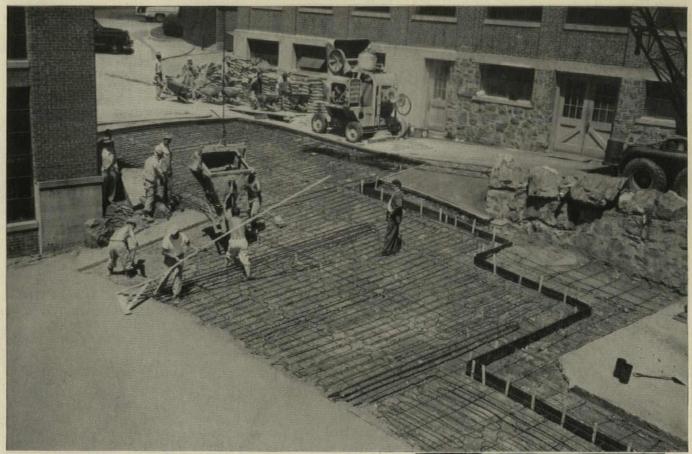
Special Spring of highest-quality steel!

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Arm models, so suitable for hospital use!

Famous Guarantee for 2 full years, providing proper recommended sizes are used!



Pouring concrete over Anaconda Pre-Formed Panel Grids, the basic units of this snow-melting system for the loading area of a New England manufacturing plant. Right, you see how effective the system is in operation. No snow, no ice, no trouble all winter. All done by simply turning a valve.

# Snow-melting systems of copper tube installed faster and easier with Anaconda Pre-Formed Panel Grids



PG's are tied in a figure 8 bundle and packed

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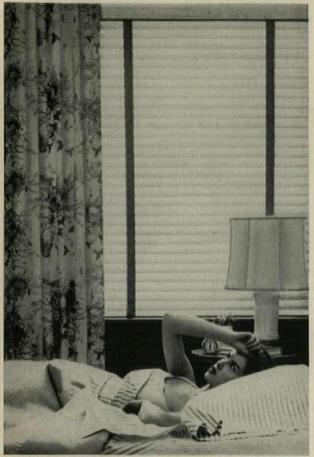
PG's were originally developed and are widely used for radiant panel heating systems. Easily and quickly installed in floors or ceilings, they contribute substantially to lower installation costs. For ceiling work, PG's are available in %" Type L copper tube formed on 6" c-c spacing. For complete information, write for a copy of Publication C-6, a new, 24-page illustrated booklet showing suggested layout and installation procedures. Address The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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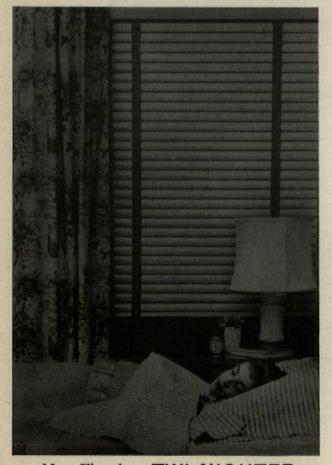
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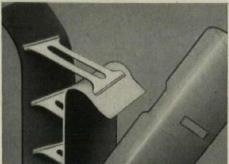
New Flexalum TWI-NIGHTER

# Flexalum TWI-NIGHTER assures complete light...ventilation control ...and privacy...at no extra cost!

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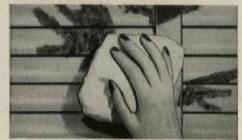
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This development opens up many new opportunities in light control. Apartment house owners can promote the fact that it assures complete privacy...lets residents sleep later in the morning, and helps along baby's afternoon nap. In hospital rooms, it is more conducive to day-time rest. In schools, it makes regular classrooms ready for audio-visual education in a few moments. Yet, amazingly enough, the Flexalum Twi-Nighter does not cost your client a penny more than any other custom blind.



Here is the secret of the Twi-Nighter: a double ladder tape that "sand-wiches" each slat more firmly in place, and a special notch in every slat, for tighter closure. Only the Flexalum Twi-Nighter has them.

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A damp cloth is all that's needed to wipe them clean. Even sticky jam vanished right off with a stroke. Flexalum tapes won't fade, fray, shrink or stretch.



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For complete information on the Twi-Nighter, contact your local Flexalum manufacturer or write: Hunter Douglas Corp., Dept. 44, 150 Broadway, New York 38, N.Y. (In Canada: Hunter Douglas Ltd., Dept. 44C, 9500 St. Lawrence Blvd., Montreal, Quebec.)

verse decay and decentralization trends.

Progress was slow in the year that lapsed. An impasse was reached when the National Capital Planning Commission held back in approving a broad 10th Street South Mall that would tie the entire redevelopment to the rest of the city in a right-angle connection from the Capitol-Lincoln Memorial Mall. When NCPC gave tentative approval for a 9th Street Mall in February, and a plan to use 10th Street as a main traffic connection with an expressway and proposed Potomac River bridges, Zeckendorf threatened to drop all interest in the project. But last month harmony was restored. NCPC rescinded its February action and voted to give serious consideration to the Zeckendorf location.

Long road ahead. Before any actual redevelopment can start in Area C, however, there are still miles of additional hurdles ahead. After Zeckendorf submits definitive proposals for the entire area they will still need review and approval from both RLA and NCPC. Their price will have to be negotiated and some means found to demonstrate that RLA could not make a better deal with any other developer. Next the District Commissioners would have to approve any contract, and somewhere about this time RLA would have to obtain title to the property by purchase or condemnation of each separate parcel, so it would be able to turn the tract over to the purchaser. Eventually construction could begin, if the developer had found satisfactory financing and at that stage also felt confident of making sufficient sales or leases so the venture still promised him a worthwhile profit.

# HHFA bows to New York in Coliseum site dispute

Wrote the highest court in New York State in reviewing a property owner's suit to block the taking of his land for the city's huge Coliseum project: "There is no dispute as to the physical facts. In rounded figures, 20% of the [project site] is occupied by dwellings...7% is covered by hotels and rooming houses, 34% is in parking lots, and 39% is ... nonresidential."

Said an HHFA press release, April 15, 1952: "A third of the buildings on the site were demolished in 1938-39."

In January, 1953 HHFA signed a contract to give New York a \$6 million capital grant for a "predominantly residential" project on this site. Under the law, US grants could be made for "predominantly residential" reuse of deteriorating areas regardless of their previous main use, but "predominantly non-residential" redevelopments could only receive grants if they replaced "predominantly residential" slums.

Last month, more than two years after signing the contract covering this project, HHFA classified its site as having been "predominantly residential" prior to redevelopment. Behind this belated classification, based on New York's contention that the large parking areas were "residential," because they were formerly occupied by boarded-up decrepit houses (torn down 10 years before enactment of the Housing Act of 1949 that authorized the capital grant) were unusual ramifications.

Last January HHFAdministrator Albert Cole had informed the US Comptroller General that the city's unauthorized addition of a 20-story office building to the Coliseum "raised serious questions as to the continued legal eligibility of this project for aid under the federal law." He found it hard to still regard as "predominantly residential" a \$30 million Coliseum and office building that occupies more than half of the site and would have only a \$6 million housing project behind. He was so concerned, in fact, that "to protect the interests of the United States" in \$3 million already advanced on this project he held up all capital grant payments on New York's entire Title I program. In March federal Title I boss James W. Follin told a Congressional committee that HHFA had

"rejected" a settlement plan proposed by the

city. He said HHFA had a "fundamentally

better" plan: eliminate from the project the

land under the office building.

**NEWS** 

But despite their four aces, the federal men apparently misjudged the number of jokers New York controlled. At the end of their ride, the smile was on the tiger's face. Instead of the city accepting HHFA's "better" plan, they found themselves agreeing to the clever, neat solution of belatedly classifying the site as having been "predominantly residential" before redevelopment began. If that was so, the law allowed any type of redevelopment, and all Cole's previous concern and precautions could be merrily dismissed and forgotten, except for the time and effort wasted. In the ironic aftermath, however, under the project's new prior-use classification, now the city could even change its plans again. If it wanted to show complete contempt for HHFA, it might eliminate altogether the (unbuilt) housing in the back that was used to get HHFA to sign the original contract. Substitute use? Offer it to the engineering societies.

# Lagging Title I redevelopments wait for low-risk FHA financing

Bent on stimulating construction of new housing in central city "urban renewal" areas, FHA last month tossed a series of bones to sponsors of eight big Title I slum clearance projects in New York City. If the incentives got New York's sluggish program moving, HHFA reasoned, they might work elsewhere in the country.

Don request of the New York district FHA director, Commissioner Norman Mason designated the five boroughs of New York a "high cost" area for Section 220 (urban renewal) mortgages under the 1954 Housing Act. This would add up to \$1,000 a room to the \$2,700-a-room insurable loan limit for fireproof, elevator buildings. FHA said New York's high-cost designation was absolute—rather than relative to building costs in other cities—and that high land costs and high construction costs made normal FHA mortgage limits inoperative.

Mason said there might be more "high cost" designations in addition to New York's

FHA liberalized limitations on the amount of commercial development that could be included in 220 construction. Under the new approach up to 10% of the total floor area of a project could be used for commercial purposes—shopping centers and the like.

But it would still be a test whether these inducements would revive the faltering Title I projects in New York and elsewhere, for last month HHFAdministrator Albert Cole said the profit and overhead allowance for developers who were their own builders would, in some cases, be held to 5%. This was a shock to some of the New York builder-redevelopers who had hoped for a 10% rate to get within mortgaging-out range.

Subsidy windfalls taboo. Another discouraging restriction: FHA disclosed it would not grant Title I site builders any land valuations higher than the prices they paid. FHA took the position that it should not help any builder obtain what would amount to a windfall on the federal and city subsidies in each Title I plot.

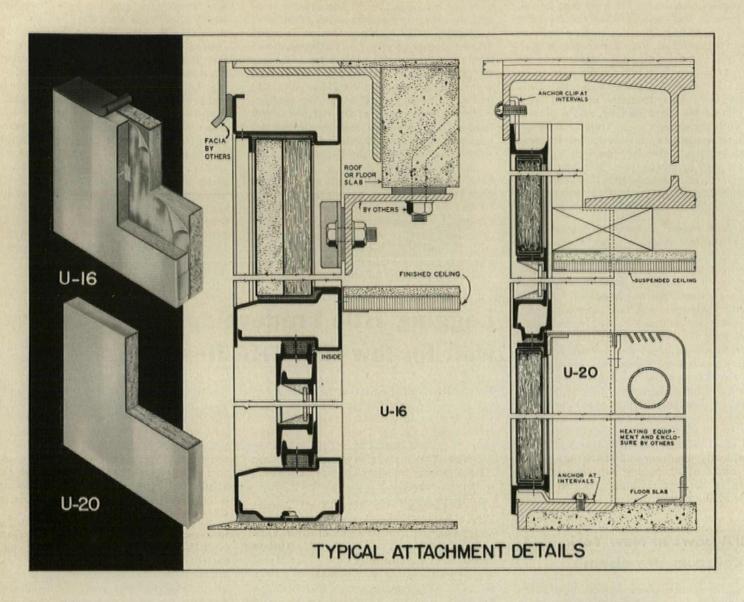
One redeveloper, applying for FHA mortgage insurance under Section 207 in the bygone days before Capehart, upvalued his land from about \$3 a sq. ft. (his purchase price), to more than \$15 a sq. ft. (roughly the city's acquisition cost). The application was rejected on other grounds—which probably saved some FHA officials from acute embarrassment in the housing probes, and some probers from acute apoplexy.

No money, no action. One thing was clear in New York: no slums were going to be cleared without money. Of four big Title I schemes launched on August 29, 1952, and given an elastic four-year completion deadline, only one was under construction. That was Corlears Hook, a 1,700-family, limiteddividend cooperative, financed by the International Ladies Garment Workers Union. This project's four buildings were rising slab on slab over some of the country's worst slums, on the crowded Lower East Side of Manhattan. Abraham Kazan, who tackled Corlears Hook with 30 years' union co-op building experience, tried to get FHA Section 207 financing in 1952. Appalled when FHA insisted his cost estimates were too low, he dropped FHA-and \$43,000 in fees and charges-and got ILGWU to provide temporary building mortgage funds. On completion, the project probably will seek a conventional mortgage.

The three other projects launched at the same time as Corlears Hook are still only in various stages of relocation and demolition. Their impatient, profit-motivated operative-builder sponsors have wrestled vainly on earlier occasions with efforts to get financing under Sections 207 and 213, and more recently with Section 220. Unable to find conventional financing—and unwilling to invest the 35% equity required in New York State even if they could borrow conventionally—they were hoping for still more Section 220 new dealing.

Since November FHA has been devising pilot rules and procedures around the 220

continued on p. 21



# Two Perfected Panels for

# PORCELAIN ENAMEL PANEL WALLS

U-16 Panel—a double faced concrete filled and fibre glass insulated panel with vapor barrier, featuring exceptional flatness and all mechanical fastening—no adhesives. This gives you a 2" wall thickness, U-factor of .16, 9 pound psf weight and size range up to 4' x 8'.

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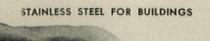
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mortgage insurance applications for the \$37 million Manhattantown project, biggest of them all (2,560 apartments on six blocks).

Until the new rules became effective, original project plans with which New York's powerful Committee on Slum Clearance Plans manipulated Title I approvals through city and HHFA channels seemed to mean little or nothing. The speculative sponsors, a year or more behind the elaborate paper schedules given to them by the committee, were still jiggling capitalization rates, costs, rents, debt service charges and room sizes to see how they could make them fit mortgage patterns as yet unknown.

The changed deal. Behind their jiggling they always bumped into the insistent question: how much money would they have to risk? Originally dreams of mortgaging out under 213 (90% of replacement cost on co-ops, even 95% if enough veterans bought apartments) undoubtedly danced in the heads of some of them. Incentive must have once looked good under 207 (80% of value on rental units, 90% if apartments averaged two bedrooms or more), because several pre-220 applications were filed under 207. Now, with 220 (and 213) allowing mortgages only up to 90% of value-and with cost certification required-sponsors feared that FHA appraisals would result in mortgages for only about 70% of cost, or less.

Conforming to orthodox FHA appraisal requirements presented other difficulties, too. Per-room mortgage limits, even with high-cost allowances, were governed by fixed multiples of the percentage of income required for operating expenses. And underneath it all, FHA still insisted that projects show at least 6% return after allowance for 7% vacancy—or, stated another way, for valuation based on yield the capitaliza-

# Philadelphians end row over mall building design

Philadelphia's Independence Mall controversy was settled last month when redrawn plans for the Shelby Construction Company's \$6 million office structure were approved unanimously by the city's Art Commission. The commission, along with the Philadelphia AIA chapter, had objected to the original design for a 12-story sheerwalled glass and aluminum structure as not in keeping with its historic surroundings (AF, March '55, News). The revised plans of New Orleans Architect Charles R. Colbert adhere to a recent city ordinance requiring a 25' setback after the first 45'; another major change substitutes granite for certain areas where steel or aluminum were originally specified.

Shortly after the tempest had subsided, the Philadelphia Art Alliance awarded its 1955 Achievement Medal to Architect Roy F. Larson, president of the city art commission, for his role in developing Independence Mall. Larson, a leader in opposing the original Shelby-Colbert designs, was hailed at the medal presentation ceremonies for his "vision and ceaseless efforts" to make sure "visitors from all over the world who come to pay their homage to Independence Hall will approach it with beauty all around them."

tion rate could not be less than 6%. All this intensified pressures for cheapened construction, or for higher rents—probably higher than the market for the slum areas in which the projects were planned, or higher than were anticipated when the projects were originally put forth as middle-income housing.

Somewhat disquieting, however, were reports that if FHA failed to come through with highly liberal mortgage allowances, some of New York's original Title I rede-

velopers would pick up their marbles. "Without FHA, we're cleaned," one of them summed it up. Most of them had paid about one third in cash on account for their land, but if they reneged there were contract provisions for returning this to them after the city had resold the land and deducted any profit the builders had made. But none had walked away from a job, yet.

In Washington, however, disappointed over FHA rules, Redeveloper Ralph Bush was giving up a Title I project. (See p. 13.)

# AIP meeting optimistic for city renewal with federal aids; big thinking catches on

Some 240 members of the American Institute of Planners gathered in Kansas City last month to talk shop. Most of them were young and optimistic.

They were optimistic mostly about the possibilities of fighting urban decay through the Housing Act of 1954. Richard L. Steiner, director of the Baltimore Redevelopment Commission for eight years before going to Washington last year as deputy commissioner of the Urban Renewal Administration, saw many ways to use the legislation. "The problem is not any longer that we're in a strait jacket, but that there are so many possibilities: clearance and redevelopment, rehabilitation or conservation of existing districts."

Too many cooks? Federal legal experts, Steiner said, feel there is sufficient locallevel authority to make best use of the law, but it is scattered among too great a variety of agencies. Result: too many unsatisfactory, multiparty contracts.

Some of the planners were cautious. C. David Loeks, young planning director of St. Paul, Minn., said: "I'm afraid we may be suckered into rebuilding a lot of areas that ought not to be cleared. We'll end up with the same reputation as the old PHA: they didn't intend to build slums, but they did." William L. C. Wheaton, professor of city planning at University of Pennsylvania, predicted application of the new section 220 will be haunted by the ghost of the 608 windfall investigations.

Thinking big. There was plenty of evidence that the planners were breaking out of conventional political boundaries and piecemeal attitudes:

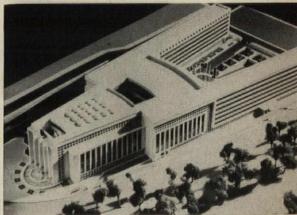
Two Kansas City officials talked about their area's successes. L. P. Cookingham, city manager, told the planners how cooperation of federal, state, city and county agencies in Kansas City's metropolitan area (involving two states, two major cities and five counties) had resulted in execution of a \$245 million regional works plan since 1947. Philip E. Geissal, the city's chief planning engineer, said state legislation was needed to crystallize area cooperation, so far voluntary, into a five-county agency, supported by a mill levy.

▶ C. McKim Norton, executive vice president of New York City's Regional Plan Assn., speaking at a traffic forum at the University of Kansas City, was gloomy about finding a way out of the city's traffic mess until the question of transportation is approached as a whole. "What is needed is a coordinating agency to end competition among advocates of various transportation methods."

But the biggest thinking yet was done by planners at Yale University. Christopher Tunnard, director of Yale's graduate program in city planning, announced a few days before the Kansas City sessions began that his group had discovered a city stretching 600 mi. from Norfolk, Va., to Portland, Me., with a population of 34 million persons. "Planners must again revise their thinking," Tunnard said. "Once we thought in terms of a single city, like New York or Philadelphia. Then we began planning for metropolitan areas. We are now forced to think in terms of the regional city . . an over-all city which contains many cities within one whole."

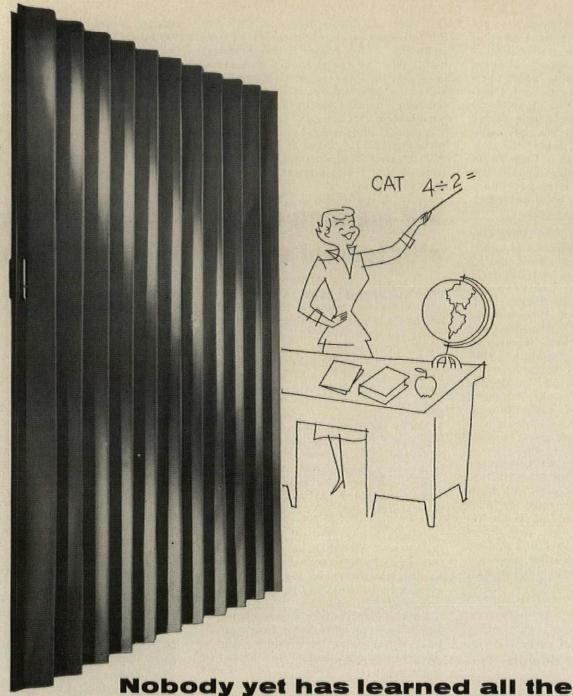
Federal opinion on planning was being continued on p. 25

United Press



# NATO headquarters will mix classical, modern styles

If Paris officials approve, construction will start this summer on a \$5.7 million NATO headquarters building designed by Jacques Carlu, France's inspector general of civic monuments. A "New York Times" cable characterized it as "in a style that may be described as restrained modern influenced by classical tradition." Limited by law to seven stories, the V-shaped structure will occupy a 160,000 sq. ft. site on the city's western outskirts, will have 900 offices, underground parking for 400 cars, restaurants, conference rooms and auditoriums.



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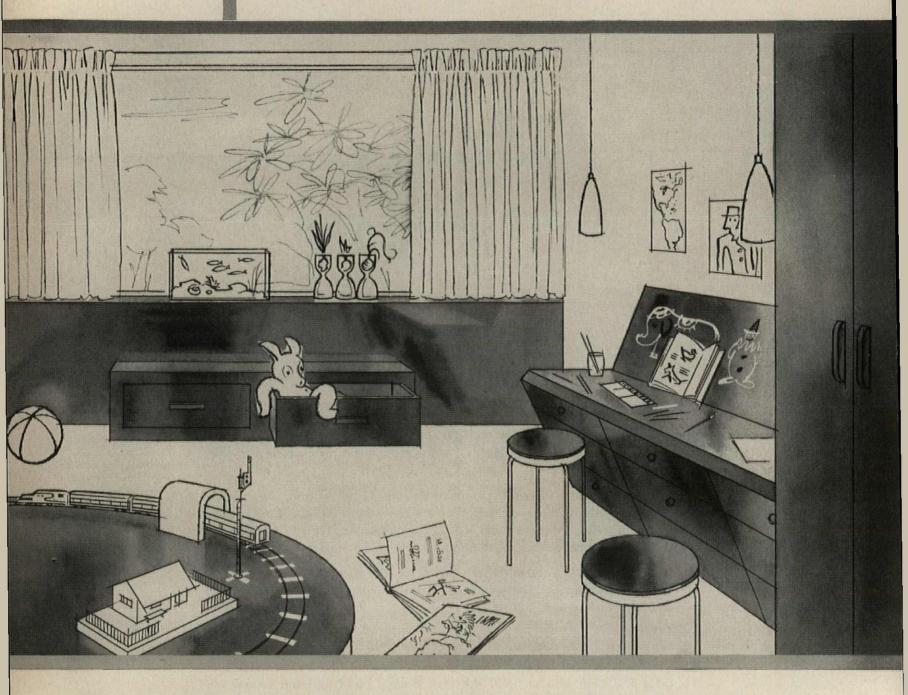
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Preview by Monsanto

# How melamine\* laminated plastics can play-proof a playroom



The most versatile and decorative of plastics is coming out of the kitchen where it has been very much at home for years. Colorful laminates made with melamine resins are now contributing beauty and utility throughout the house.

This sketch of a children's playroom suggests just a few of the practical new applications for this smooth, durable surfacing material.

The "hobby window" has a melamine laminated sill. It won't be harmed by water splashing from the aquarium or plants.

The dado, closet doors and drawing table are covered with melamine that can take hard wear and is easy to clean. The built-in drawing board provides a richly-hued surface from which chalk and crayon marks erase with a damp cloth.

The train table, toy chest and stools are also topped with melamine laminate. That means they're resistant to scratching and chipping.

Melamine laminates\* in scores of colors and patterns are carried at most building supply stores. The lightweight sheets, from 1/16" to 1/10" thick, cut neatly with a saw and are cemented permanently to any rigid surface. They are also available already glued to plywood or hard board. Melamine laminates do not swell or warp, are unaffected by ordinary acids and alkalies.

\*Monsanto supplies melamine and phenolic resins for decorative laminates sold under these trade names:

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made known elsewhere during the month. In Portland, Ore., HHFAdministrator Albert Cole told a chamber of commerce group of realtors, builders and roadmakers that problems of urban blight and traffic need coordinated treatment. In Washington, Commissioner James W. Follin of the Urban Renewal Administration told the American Industrial Development Council that URA would approve industrial reuse of blighted housing areas under the 1954 Housing Act. Good zoning can aid in such redevelopment, he said, and protect existing industrial areas from blighting residential encroachment.



STOCKHOLM EMBASSY, by Rapson and van der Meulen.

### **AIA jury picks 5 First Honor Award winners**

As its 87th annual convention in Minneapolis June 20 to 24 approached, the AIA announced the winners of five First Honor Awards and 22 Awards of Merit in its seventh annual competition for outstanding American architecture (works completed within the past five years).

The awards jury (see cut) studied almost 300 entries, the most in any competition to date, and reported that uniform quality of submissions made its task "extremely difficult." Its selections:

#### FIRST HONOR AWARDS (see cuts)

North Hillsborough school, architect, Ernest J. Kump. (To appear in FORUM later.)

Central restaurant building, G. M. Technical Center; architect, Eero Saarinen & Associates; architect-engineers, Smith, Hinchman & Grylls; landscape architect, Thomas D. Church; associate architect, Edward A. Eichstedt. (AF, Nov. '54.)

Women's dormitories and dining hall, Drake University; architect, Eero Saarinen & Associates; structural engineer, Severud, Elstad, Krueger.

General Telephone Co. building, San Angelo, Tex.; architect, PACE Associates; structural engineer, Frank J. Kornacker & Associates. (To appear in FORUM later.)

American Embassy, Stockholm, architects, Ralph Rapson and John van der Meulen; structural engineer, Sven Tyren. (AF, Jan. '55.)

#### AWARDS OF MERIT (except residential)

St. Matthews Church, Pacific Palisades, Calif., A. Quincy Jones & Frederick E. Emmons, Los Angeles.

Children's clinic, Raceland, La., Curtis & Davis, New Orleans. (To appear in FORUM later.)

Apartments, Fairfax County, Va., Keyes, Smith, Satterlee & Lethbridge, Washington. Manresa Jesuit retreat house, Azusa,

Calif., Wallace Neff, Los Angeles.

Apartments, Los Angeles, Carl Maston,
Los Angeles, architect-owner-builder.

Navy postgraduate school, Monterey, Calif., Skidmore, Owings & Merrill, San Francisco.

Mercantile library, Philadelphia, Martin, Stewart & Noble, Phila. (AF, Aug. '54).

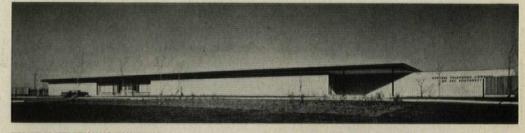
Taylor Memorial Library and John M.

continued on p. 29



AWARDS JURY architects (I to r): Ernest Born, San Francisco; Eugene F. Kennedy Jr., Boston; Chairman Thomas H. Locraft; Mies van der Rohe; Clevelander J. Byers Hays.

Hedrich-Blessing



GENERAL TELEPHONE BUILDING, San Angelo., Tex., by PACE Associates; Charles B. Genther in charge





TWO SAARINEN DESIGNS won top honors: Drake University (I) and G-M Technical restaurant

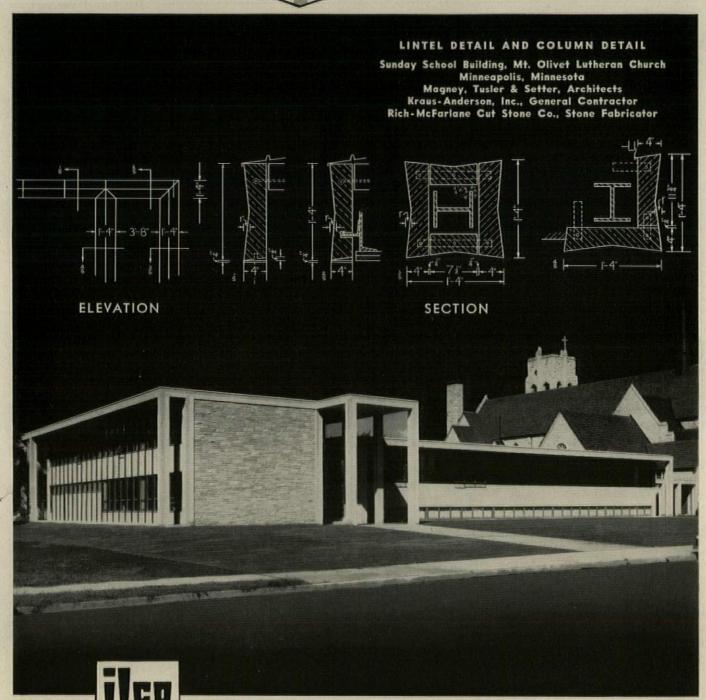


ELEMENTARY SCHOOL, Hillsborough, Calif., by Ernest J. Kump of Palo Alto



Number 4 of a series

# APPLICATIONS IN CONTEMPORARY ARCHITECTURE

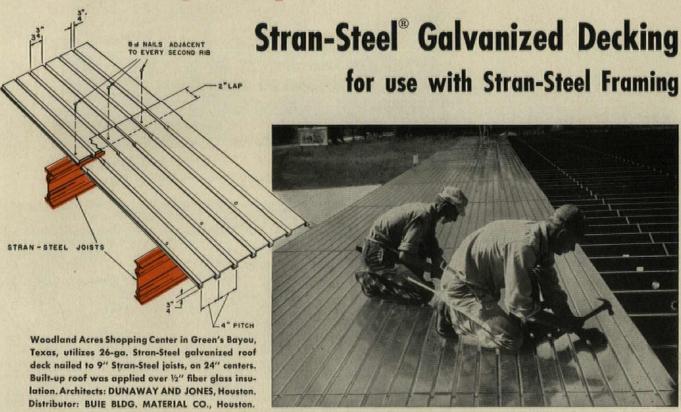


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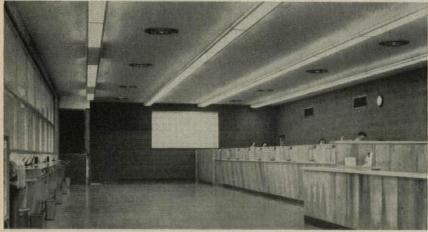
This photograph shows the high velocity ducts installed through the open web joists. Note how the Anemostat sound attenuation unit is also placed inside the open web joist area. As a result, the architects and engineers were able to save nearly two feet in a one-story building...also make comparable savings in construction costs.

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- Round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.



### **PEOPLE**

# George Howe, outstanding contemporary architect, dies; Raymond Saulnier named top mortgage adviser to Ike

Versatile Paul Schweikher, practicing architect and chairman of the Yale School of Architecture, stayed close to his academic desk for a period earlier this year, when the Yale Daily News printed a review of student gripes against grading methods and curriculum in his department. Late in March, after the paper's blasts, Schweikher revised a number of practices that had been subject to student protest. But he described the changes as "routine," and added: "It can't be said that the changes came out of the student criticism . . . [which] is often way behind the facts." The changes: return to an open-jury system of judging students' work; grading students' efforts-twice each term, instead of once-by a committee of three faculty members instead of by one instructor; an increase in the number of instructors, and revitalization of the school's visiting critics' program.

G. Holmes Perkins, dean of the University of Pennsylvania's fine arts school, Leon Loschetter, associate professor of architecture, and Wilhelm von Moltke, chief of land planning for the Philadelphia City Planning Commission, went to Turkey last month to help the Turkish government set up a school of architecture and community planning at Ankara. Von Moltke joined the group, a UN Technical Assistance Administration team, to replace the late George Howe.

#### AIA awards

continued from p. 25

Reeves, student building, Centenary Junior College, Hackettstown, N. J., Jan Hird Pokorny, New York. (AF, Mar. '55.)

O'Neill Sheffield shopping center, Sheffield, Ohio, Weinberg & Teare, Cleveland.
Danforth Chapel, Colorado A&M College,
James M. Hunter, Boulder, Col.

Bank of Apple Valley, Apple Valley, Calif., McFarland, Bonsall, Thomas, Los Angeles.

Men's residence hall, University of Washington, Seattle, Young, Richardson, Carleton & Detlie, Seattle,

Eagle Rock playground clubhouse, Los Angeles, Richard J. and Dion Neutra, Los Angeles.

Texas Children's Hospital, Houston, Milton Foy Martin, Houston. (AF, July '51.)

Home economics building, Davis campus, University of California, Harvey Parke Clark & John F. Beuttler, San Francisco.

Bandstand and park pavilion, St. Petersburg, Fla., William B. Harvard, St. Petersburg. (FORUM, Nov. '53.)

Navy service schools, Great Lakes, Ill., Skidmore, Owings & Merrill, Chicago. (To appear in FORUM later.)

St. Brigid Catholic Church, Los Angeles, Chaix & Johnson, Los Angeles. NAMED: Raymond J. Saulnier, professor of economics at Barnard College, Columbia University, mortgage expert of the Federal

Associated Press

SAULNIER

Reserve Board during Regulation X days and for two years consultant to President Eisenhower's Council of Economic Advisers, as a full member of the council; New York Designer Jay Doblin, former chairman of the Pratt Institute evening school of industrial de-

sign and conductor of a private experimental design school (Studio D) in New York, as director of the expanded Institute of Design at Illinois Institute of Technology; Curt C. Mack, former FHA assistant commissioner in charge of mortgage underwriting, as top man in New York for the Frederick W. Berens mortgage organizations of Washington; Brig. Gen. John J. O'Brien, former president of Gunnison Homes, Inc., and of the Prefabricated Home Manufacturer's Institute, as an associate of Leo G. MacLaughlin Co., Pasadena, Calif., real estate developer.

George Howe, elder statesman of contemporary architecture and former chairman of Yale University's department of architec-

Yale News Bureau



HOWE

ture, died April 16 in Philadelphia. He was a member of the Philadelphia firm of George Howe and Robert Montgomery Brown. Howe was schooled in Switzerland and in the US (at Groton and Harvard). His education in architecture was traditional; he studied in Rome

and at the Ecole des Beaux Arts in Paris. In 1916 he joined the outstanding conservative Philadelphia architectural firm of Mellor & Meigs, and became a partner in 1919. His World War I service started in the Army Medical Corps, ended with diplomatic posts that included political observer at the Berne Embassy during the Communist revolution. He remained with Mellor, Meigs & Howe until 1928, chafing increasingly at traditional architectural concepts of the times. Howe resigned in 1928, sold the house he had designed in 1914 for his family. He shortly struck up a partnership with New York Architect William Lescaze. In 1930 the pair had their first big chance to strike a blow against conservatism: they were commissioned to design a 32-story office building for the Philadelphia Savings Fund Society. The building, one of the first airconditioned office structures, is still unsurpassed as a masterpiece of twentieth-century skyscraper design. During the early depression years the partnership was dissolved. From 1940 to 1941 Howe designed government housing projects with Oscar Stonorov and Louis I. Kahn. From 1942 through 1943 he worked at the Public Buildings Administration as supervising architect and then deputy commissioner for design and construction. Never comfortable in government circles, he left Washington in 1945 and lived in virtual retirement in Philadelphia. In 1949 he took his Yale post. In the past four years, with a younger partner, Architect Robert Montgomery Brown, he designed a number of important buildings. Howe was chairman of the advisory board of design for the Penn Center project, now under construction. (A fuller appreciation of Howe and his works will appear in a later issue of FORUM.)

Also died: Daniel W. Tracy, 68, president of the 625,000-member International Brotherhood of Electrical Workers 1933-1940 and 1946-1954, assistant secretary of labor 1940-1946, and eleventh vice president of the AFL, March 22 in Washington; Elmore I. MacPhie, 66, president of Atlas Plywood Co., March 22 in Newton, Mass.; Fred Clinton Walker, 70, builder of Los Angeles' Times, Mirror and General Petroleum buildings, March 24 in Los Angeles; Raymond A. Wetzler, 66, board chairman of Whitehall Cement Manufacturing Co., March 26 in New York.



# Chicago AIA, trade group hold first annual "civic pride" lunch

Chicago's AIA chapter and the Chicago Assn. of Commerce and Industry united last month to inaugurate an annual "civic pride" luncheon. Citations were awarded for 18 buildings and one monument, and certificates given to 64 area architects, contractors, building craftsmen, artists and building owners for superior design and construction during the past four years. Among those honored was Richard E. Schmidt (r), thought to be Chicago's oldest practicing architect, shown receiving his certificate from Bertram A. Weber (I), AIA chapter honor awards chairman, and Mortgage Banker George H. Dovenmuehle, chairman of the trade group's urban renewal committee.

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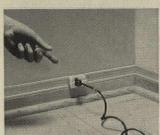
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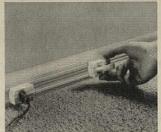
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# Record construction outlays point to \$41 billion year; survey shows \$27.7 billion state-and-local public works backlog

Swollen by an unprecedented burst of residential building, construction activity hit a new record of \$8.4 billion in the first quarter (see chart and table below). As a result industry observers began preparing upward revisions in their earlier forecasts that 1955 construction expenditures would hit an all-time high of \$39 billion. Allowing for seasonal factors, first quarter outlays equalled a record-breaking annual rate of \$41 billion.

Bolstering the optimism generated by the mounting volume of current work, the Commerce Dept. released results of a survey the Census Bureau made for the Council of Economic Advisers that showed a tremendous backlog of \$27.7 billion of public works projected by state and local governments, although many would not be ready for execution until next year or later. For the first quarter of this year, however, state and local construction expenditures already totaled \$1.4 billion (7% better than Jan. to March '54) and were running at twice the rate of federal outlays (see chart below).

Some 4,000 nonfederal governments sent the Census Bureau reports on their public works plans, making this the most comprehensive survey of its kind ever made. Reports were submitted as of last Oct. 1, but excluded current projects and all those scheduled to be under way by June 30.

Altogether 71,639 projects were tallied, and of their \$27.7 billion total cost, \$25.3 billion represented construction expenses, the other \$2.4 billion land costs. Highway and street projects accounted for the largest segment (36%) of contemplated expenditures. Also in dollar volume, libraries, schools and other educational buildings were

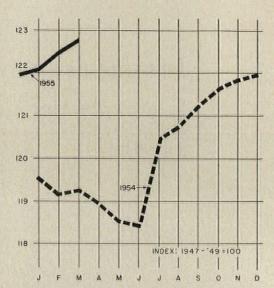
the second largest category, 14%; dormitories and public housing comprised 5%.

Of the total, 5,620 projects, costing \$1.8 billion for construction and \$169 million for land, were classified as "ready-to-go": plans and specifications are finished, land obtained, funds on hand or arranged for and work ready to start or bids advertised within a matter of weeks. "Planned" projects—those which could be brought to a "ready-to-go" status within six months—amounted to 17,-215, would cost \$5.8 billion for construction and \$431 million for land. "Programmed" projects—which could be "ready-to-go" within six to 18 months—totaled 48,804. Their estimated costs were \$17.8 billion for construction and \$1.8 billion for land.

Numerically, the projects in each classification were divided as follows:

	Ready-	Planned	Pro-	Totals
	to-go	,	d	
Residential	105	246	795	1,146
Educational	734	2,451	7,361	10,546
Highways	1,962	7,814	21,075	30,851
Hospitals	83	390	1,455	1,928
Sewerage	791	2,455	5,358	8,604
Water supply	668	956	3,201	4,825
Other utilities	390	961	1,957	3,308
Administrative	199	465	2,600	3,264
Other	688	1,477	5,002	7,167
Totals	5,620	17,215	48,804	71,639

Breaking the report down even further: 5,022 of the projects will cost \$1 million or more, totaling \$17.2 billion for construction and \$1.8 billion for land. There are 24,899 projects to cost between \$100,000 and \$1 million each; they total \$6.8 billion for construction and \$439 million for land.

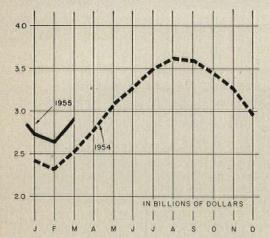


BUILDING MATERIALS PRICES, according to BLS' wholesale index, edged up 0.3 points to 122.8 in March, another new high and 2.9% above March '54. Higher prices for brass goods, paint and lumber caused the increase.

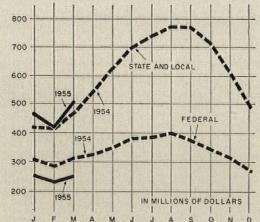
#### **Building costs remain steady**

Building costs have remained static over the past half year after rising about 2% from January to September last year, according to The Dow Service of New York. This is borne out by E. H. Boeckh & Associates' composite building cost index for apartments, hotels, office, factory and commercial structures, which edged up to 258.0 in March (based on 1926-1929=100), only 0.2% over February, 0.5% over last October.

#### Construction expenditures: first quarter record set despite 20% cut in federal outlays



TOTAL CONSTRUCTION set a March record of \$2.9 billion—14% above March '54—bringing the total for the first quarter to a new peak of \$8.4 billion—13% over a year ago. Private activity caused these records; public construction was off 3% for the month and 4% for the quarter. Residential building continued sharply upward: private housing starts hit a March high of 116,-100, 25% over March '54. The total of 295,000 starts also set a record for the quarter, topping substantially the 276,100 starts in the first quarter of 1950, homebuilding's peak year.



PUBLIC WORKS expenditures by state and local governments showed a marked increase during the first quarter of 1955, totaled \$1.4 billion or 7% over outlays in the same period a year ago. For March, state and local spending totaled \$512 million, 9% above March '54. But curtailed federal construction spending, down 20% for the first quarter, completely offset the state and local gains and made combined public construction expenditures show a 4% drop for the quarter. Federal outlays in March were \$256 million, off 19% from March '54.

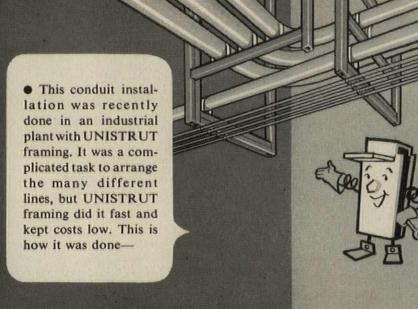
	First three n			onths	
(millions of dollars)	Mar. '55	1955	1954	% ±	
PRIVATE BUILDING					
Residential	1,145	3,290	2,437	+35	
Nonresidential*	559	1,648	1,429	+15	
Industrial	186	558	528	+6	
Commercial	208	594	475	+25	
Religious	53	161	123	+31	
Educational	41	122	115	+6	
Social and recreational	17	52	48	+8	
Hospital; institutional	28	84	79	+6	
Miscellaneous	26	77	61	+26	
Public utilities	328	924	917	+1	
*PRIVATE TOTAL	2,151	6,198	5,126	+21	
PUBLIC BUILDING					
Residential	21	65	105	-38	
Nonresidential	340	974	1,064	-8	
Industrial	79	235	423	-44	
Educational	185	530	458	+16	
Hospital; institutional	25	72	72	0	
Military	85	245	217	+13	
Highways	170	440	415	+6	
Sewer; water	82	229	212	+8	
*PUBLIC TOTAL	768	2,152	2,231	-4	

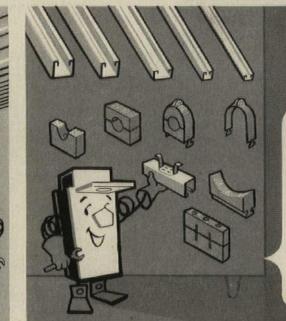
Minor components not shown, so total exceeds sum of parts.

GRAND TOTAL ... 2,919 8,350 7,357

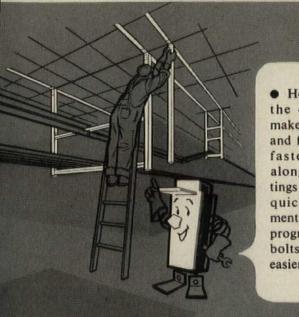
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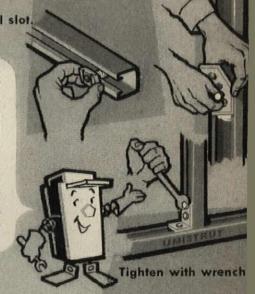


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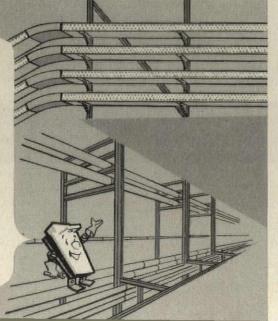
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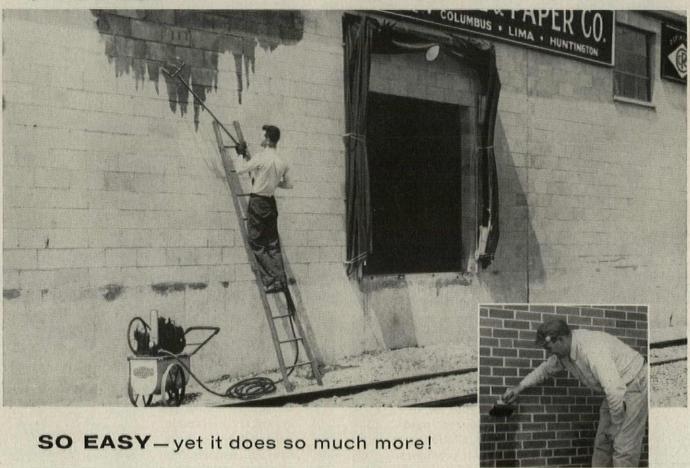
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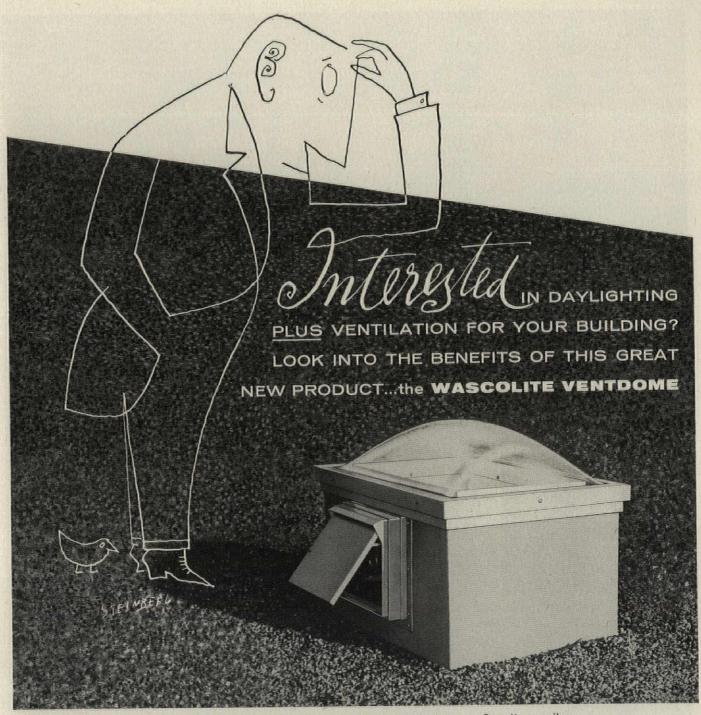
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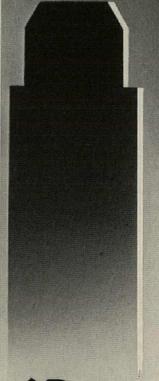
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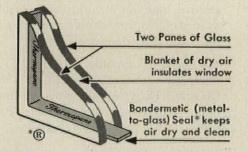
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All windows are large to provide sweeping views of the field and its approaches.

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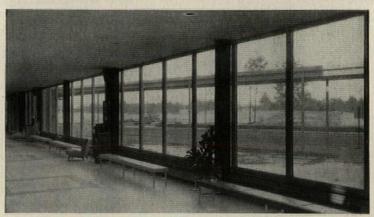
The outer pane in each *Thermopane* unit is L·O·F Heat Absorbing Plate Glass. This reduces solar energy input in summer, adding to comfort. And it provides greater eye-comfort by reducing sun and sky brightness as well as reflections from runways and aprons.

The Toledo Express Airport is another example of applying special functions of specific modern glass products to provide more efficient, more livable buildings. If you would like performance data on *Thermopane* and on Heat Absorbing Plate Glass, write to Libbey Owens Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.





Office of Commissioner of Aviation provides a clear view of loading ramps, field and approaches.



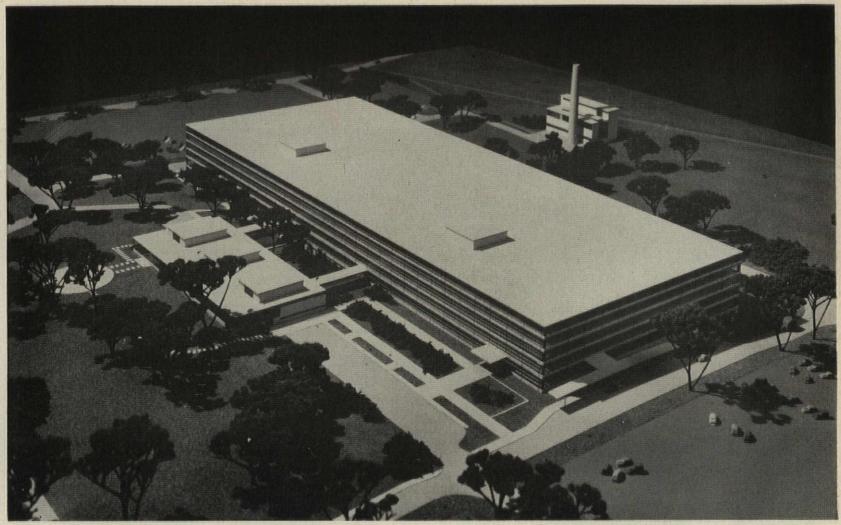
Main concourse is kept bright and cheerful through Daylight Walls of Thermopane. Waiting passengers and visitors enjoy a clear view of outdoors.



Thermopane GLASS

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a Great Name in Glass



UNITED STATES MILITARY PERSONNEL RECORDS CENTER Northwest St. Louis County, Mo.

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Mech. & Elec. Engineer: John D. Falvey Structural Engineer: William C. E. Becker

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HOLLOW METAL is the mark of a trade that has the ability to coordinate and fabricate many related sheet steel products.

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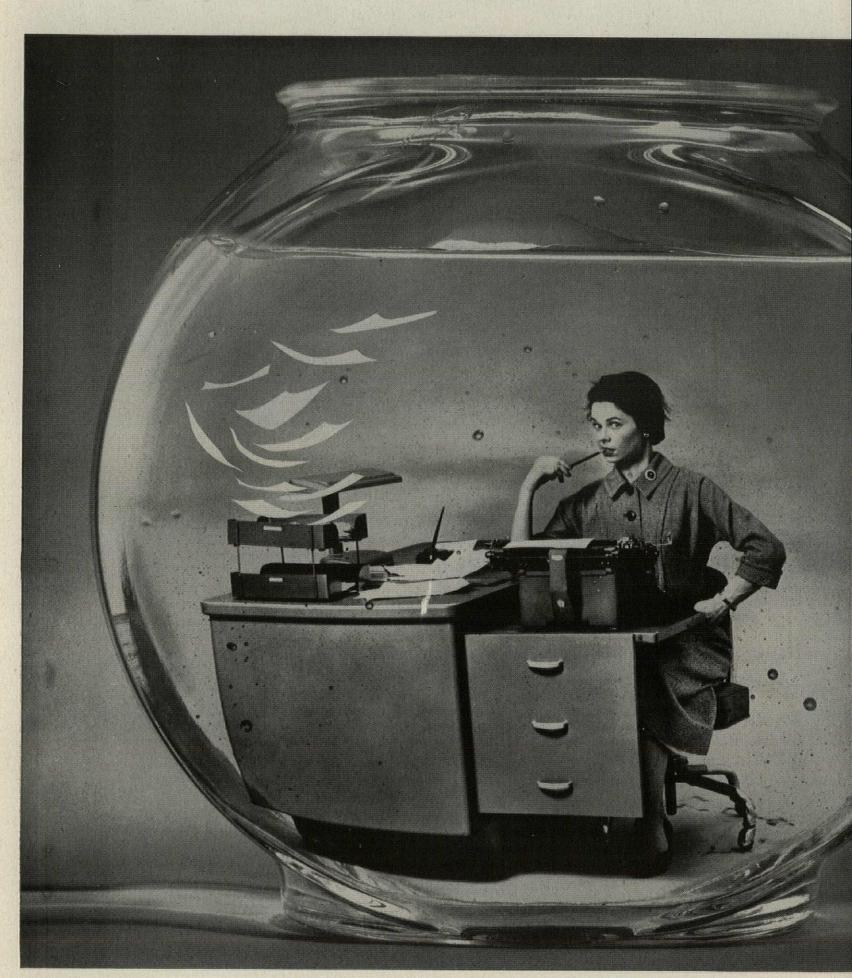
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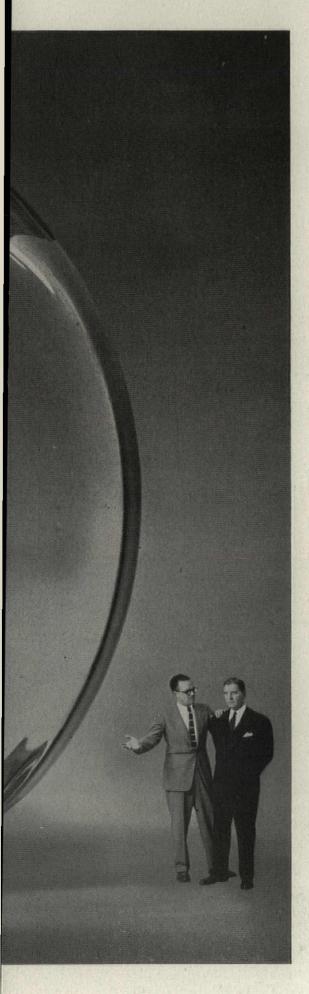
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# "fish bowl" distractions!



# Actual test shows work output increased 27% after installation of VMP MOBILWALLS

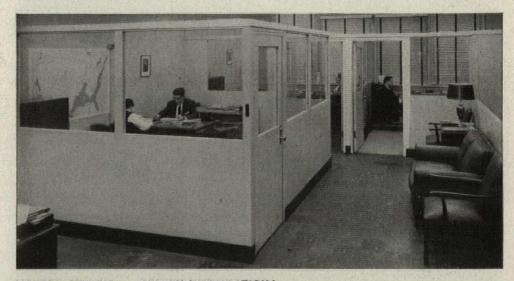
Plan your client's office with vmp's metal, movable partitioning, and he'll get permanent low-cost protection against old-fashioned "fish bowl" conditions. MOBILWALLS cut down noise, sharply reduce delays and errors. With the privacy they afford, routines run smoother, and work-stopping distractions are virtually eliminated. MOBILWALLS are ideal for every office—large or small. If you're designing a new office for your client—or revamping an old one—be sure to find out the many benefits that MOBILWALLS add to your plans.

We can show you the efficiency gains that this partitioning makes possible—how much it cuts down on costly delays. We'll demonstrate with Ratio-Delay Studies—accurate reports that rate office efficiency; they measure work output, delays, corrections, and lost motion. They show what has been done, let you picture what can be done in your client's plans.

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- Time spent paying attention to distractions, and correcting errors, was reduced 38%
- The VMP MOBILWALL installation helped in adding as much to work output as could have been added by a 27% increase in employees and payroll expense.

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\*DFPA — Douglas Fir Plywood Association, Tacoma, Washington, is a non-profit industry organization devoted to product research, promotion and quality maintenance.



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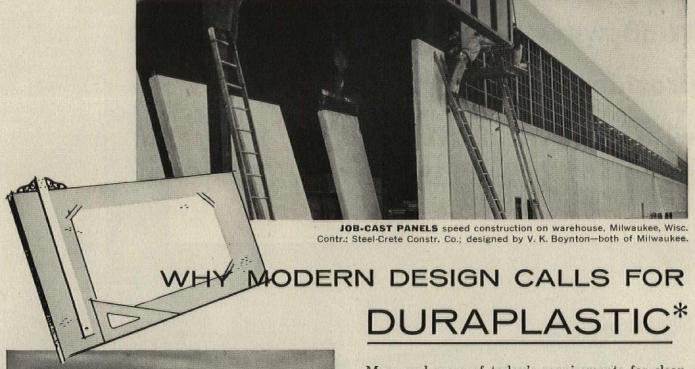


**EXT-DFPA®** for outdoor uses





... other grades for other uses.



ARCHITECTURAL CONCRETE serves as both structural material and facing at high school, Williamsport, Pa. Contractor: Lundy Construction Co.; Architect: D. H. Grootenboer—both of Williamsport. Engineers: A. W. Lookup Co., Philadelphia, Pa.



**DESPITE BELOW-ZERO WEATHER,** concrete made with Atlas Duraplastic Cement stays plastic and workable at apartment building, Duluth, Minn. Contractor-Owner: W. C. Smith, Inc.; Architect: A. Reinhold Melander—both of Duluth.

More and more of today's requirements for clean, functional design are being met by concrete construction. And where *better* concrete is important, you'll often find it's made with Atlas Duraplastic air-entraining portland cement.

There's a reason. Duraplastic-made mixes are more workable, more cohesive... place better in forms and around reinforcement. Duraplastic Cement makes concrete with greater plasticity. Result: a more uniform concrete to place.

Atlas Duraplastic Cement requires less mixing water for a given slump . . . reduces water gain and segregation and, therefore, minimizes sand streaking and rock pockets. Result: a more uniform concrete in place.

Duraplastic-made concrete adds to concrete durability by fortifying it against the effects of freezing-thawing weather. It is superior for both structural and exposed surfaces.

Yet Duraplastic costs no more than regular cement, requires no unusual changes in procedure. Complies with ASTM and Federal Specifications. For descriptive booklet, write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

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

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



UNITED STATES STEEL HOUR—Televised alternate weeks—See your newspaper for time and station

# Windows with eyebrows provide glareless daylighting with eye-resting views



Architects create a laboratory as rugged as the Rockies — choose Ceco-Meyer Concrete Joist Construction for rigidity . . . for resistance to wind loads and seismic forces . . . for economy

Architects Pereira & Luckman achieved a unique design when they made forth-right use of standard products in creating the Radio Propagation Laboratory, U. S. Bureau of Standards, Boulder, Colorado. With the majestic Rocky Mountains as a backdrop, it was fitting that aesthetics be combined with ruggedness, in a functional, fire-safe struc-

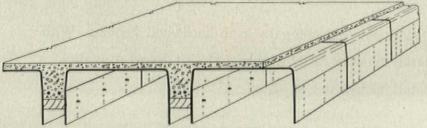
ture. Imagination accomplishes the unusual in window treatment. Ceco Steel Architectural Projected Windows are positioned in the openings to obtain best diffusion of daylight. Concrete canopies eliminate glare. Clear glass allows occupants to rest their eyes by focusing on distant views. Window types provide optimum ventilation.

Concrete joist construction was chosen as the best framing method for the building. Less concrete and steel were used than in other monolithic concrete constructions. Reduced deadweight permitted lighter columns and footings. The contractor selected Ceco-Meyer Adjustable-Type Steelforms for the job. The Boulder Radio Propagation Laboratory is another example of Ceco's performance on the architect-engineer-contractor-supplier team. Ceco offers you similar structural engineering and window product services, including erection . . . for your next building project. Consult nearest Ceco office or Sweet's files.

#### CECO STEEL PRODUCTS CORPORATION

Offices, warehouses and fabricating plants in principal cities. General Offices: 5601 West 26th Street, Chicago 50, Illinois





CECO STEEL Typical arrangement of Ceco-Meyer Adjustable-Type Steelforms, showing simplicity of erection. Proper joist depth is obtained by nailing through selected holes into the soffit form.



Concrete Joist Construction was also used in the roof of the open walkway.

Abundant daylight is provided by window arrangement in clerestory and at work level. Clerestory windows are mechanically operated. Concrete joist ceiling was formed with Ceco-Meyer Steelforms.

DESIGNED AND CONSTRUCTED UNDER THE SUPERVISION OF GENERAL SERVICES ADMINISTRATION, PUBLIC BUILDING SERVICE SURCO terrazzo-type floors



Surco's latex base gives this terrazzo-type floor a resilience comparable to hardwood flooring. With wide range of colors Surco terrazzo-type material matches easily with any interior decor. A quality flooring in every respect, it is easy to maintain and inexpensive to install.

The unusual adhesive properties of Surco are found in no other terrazzo. Applied ¼ to ¾ inch thick after the slab is completely cured, a perfect bond is obtained. This relatively thin application together with the elimination of the normal cushion between slab and terrazzo reduces weight and thickness, cuts costs.

In office buildings, apartment houses and hospitals, as well as in the home, Surco terrazzo-type flooring provides quality, durability, and beauty.

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See Sweets Architectural File for more information about Surco products for home and industry.





WELDTEX. Here in painted fir; also in gum and Philippine mahagany. Prices from \$25\*\*.

PLANKTEX. In natural or pre-finished Philippine mahogany. Pre-finished costs \$41\*\*.

V-PLANK. In oak, walnut, Korina®, Honduras mahogany, Samara\*. Starts at \$44\*\*.

SEA SWIRL. Clear, weathered-look paneling without knots-\$30\*\*; knotty Surfwood-\$22\*\*.



SAMARA V-PLANK in this basement recreation room costs only \$44 for an 8' x 12' wall (for built-ins use regular Samara).

In Canada: Weldwood Plywood, Ltd., Montreal.

# **TEXTURED WOODS**

Give homes new beauty, a new kind of appeal with Weldwood textured woods...at a cost as low as \$23 for an  $8' \times 12'$  wall!

Weldtex®—patented by Weldwood, Only from Weldwood can you get the original striated paneling that started the textured wood trend; fine for natural or painted finish. Comes also in exterior grade for siding; striations assure no grain raising or checking. Thicknesses: interior 5/16", ¾" in fir only; exterior ¾".

Planktex\* combines the striations of Weldtex with alternate bands of smooth wood. Comes unfinished or completely pre-finished ready to apply. Thickness—5/16". Sea Swirl® and Surfwood® look like weathered driftwood; fine for dens, playrooms, cabins; texture hides nail holes. Thickness—5/16".

V-Plank\* features vertical grooves that give the effect of random planking. Comes already pre-finished by skilled woodcraftsmen. Thickness—1/4".

Texture 111° siding is exterior grade fir with knots and unsanded faces; gives rough-textured, dramatic look; can be installed without sheathing. Also perfect for gable ends, soffits, carports, breezeways and fences. Thickness—5%".

All panels available in standard  $4' \times 8'$  sheets, as well as other sizes.

Send coupon for more details or visit your Weldwood lumber dealer or any of the 82 United States Plywood showrooms in principal cities.

\*\*For an 8' x 12' wall.

\*Trade Mark

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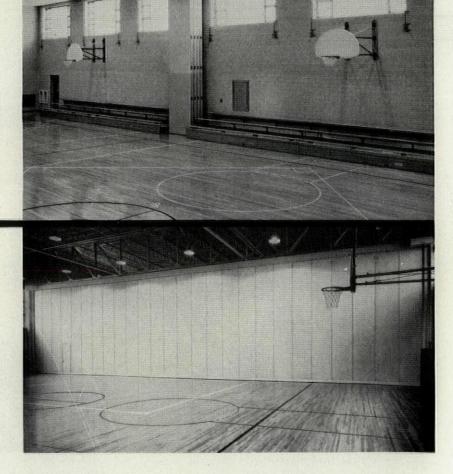
	Plywood Corporation York 46, New York	Weldwood)
I'd like to k Weldtex □	now more about Weldwood to Planktex  Sea Swirl and S Texture 111 .	
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Address		
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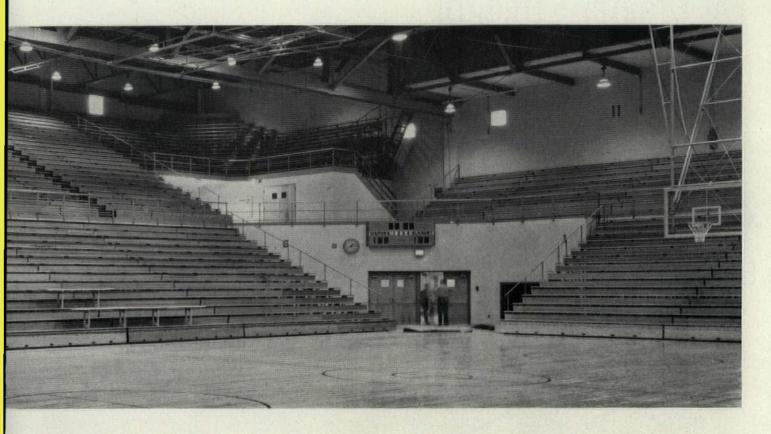


# Early planning with BRUNSWICK-HORN

BRUNSWICK-HORN Folding Gymnasium Seating automatically locks in place when opened or closed . . . needs no "live loads" to hold. Cross-braced understructure prevents sway or shake. Foot boards tilt when closing . . . spill litter to floor for quick, easy removal. Suits any gym, large or small!

BRUNSWICK-HORN Folding Partitions give you the convenience and flexibility of two gyms ... unfold or fold ... quick, easy and quiet. They lock securely in place without bolts . . . automatically seal with floor. Key-actuated switch prevents tampering.





# gives your new gym a flexible future!

■ There once was a time when a gym was a gym . . . nothing more.

It's different today, and the difference comes from planning with Brunswick-Horn. Today's gym is multipurpose and designed for beauty as well as utility. Besides accommodating school activities, it also serves the athletic, civic and cultural needs of the community. That puts the modern gym on a sound business basis.

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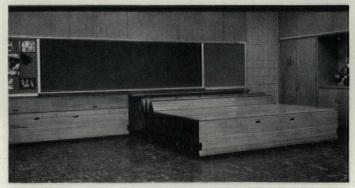
Brunswick-Horn has become a part of the planning that makes this possible. In fact, you'll find Brunswick-Horn gym equipment (Folding Partitions and Folding Gymnasium Seating) used everywhere...giving new gyms the flexibility they need to achieve maximum return through maximum use.

Why not make Brunswick-Horn part of *your* new gym plans? Start by writing today for complete information . . . have it handy when you need it.



THE BRUNSWICK-BALKE-COLLENDER COMPANY
Horn Division, Marion, Virginia





BRUNSWICK-HORN Folding Stages make any classroom a little theater... in minutes. Fold compactly for storage, roll easily on large casters, yet lock securely in place when set up. Full range of sizes, all with fine furniture finish.



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FILON is produced by a fully automatic, electronically controlled process, in the world's largest and most modern plant in its field. This method makes possible continuous lengths as well as all standard sizes of panels. Lengths are limited only by convenience in handling.



## FILON is Uniform in Thickness and Color

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## DATES

Application of Automation to Building Design and Construction, symposium conducted by the Michigan State College School of Engineering, May 12-13, East Lansing, Mich.

National Materials Handling Exposition, May 16-20, Chicago.

Air Pollution Control Assn., annual meeting, May 22-25, Sheraton-Cadillac Hotel, Detroit.

Hospital Planning Institute and Workshop, a seminar sponsored by the American Hospital Association, the AIA and others, May 30-June 3, Shamrock Hotel, Houston.

Design Engineering Show and Basic Materials Conference, May 31-June 3, Convention Hall, Philadelphia.

National Housing Conference, annual meeting, June 7-9, Statler Hotel, Washington, D.C.

Association of State Planning and Development Agencies, annual meeting, June 7-10, Shirley-Savoy Hotel, Denver.

International Design Conference, June 13-18, Aspen, Col. Speakers will include Walter Gropius, Pier Luigi Nervi, Philip Johnson. For further details address R. Hunter Middleton, 220 S. Michigan Ave., Chicago.

Plastics in the Design of Building Products, twoweek special summer program conducted by the Massachusetts Institute of Technology, June 14-24, at Cambridge. For details address summer session office, room 7-103, MIT, Cambridge, Mass.

National Association of Building Owners and Managers, annual convention, June 19-23, Netherlands-Plaza Hotel, Cincinnati.

Forest Products Research Society, national meeting, June 20-23, Olympic Hotel, Seattle.

American Institute of Architects, annual convention, June 21-23, Radisson Hotel, Minneapolis.

First International Building and Public Works Equipment and Materials Fair, June 25-July 10, Saint-Cloud National Park, Paris. For details address M. Charles Chereau, 29 Rue Cambon, Paris 1.

American Society of Landscape Architects, annual meeting, June 26-29, Sheraton-Cadillac Hotel, Detroit.

American Society for Testing Materials, annual meeting, June 26-July 1, Chalfonte-Haddon Hall Hotel, Atlantic City, N.J.

Congress of the International Union of Architects, fourth annual assembly, July 9-16, The Hague. Further details available from AIA headquarters in Washington.

the news is

ALUMINUM INTEGRAL

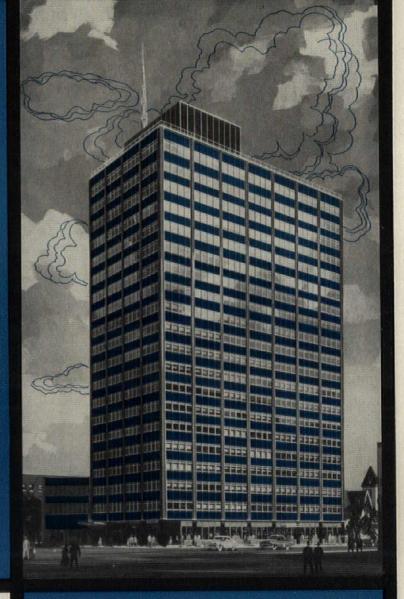
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Cupples, foremost in curtain wall design, fabrication and erection, now adds the beauty of color to sound, economical "skin" construction. Spandrel panels for this magnificent skyscraper are Architectural Blue. This new color finish is not a paint or enamel, but is created as an integral part of the aluminum surface by Alcoa's electrochemical process. Many other colors are available.

Look to Cupples for the latest and best in curtain walls as well as for commercial aluminum windows, doors, architectural aluminum extrusions and special ornamental products. High standards of design and manufacture, plus tight control of costs, have established Cupples' leadership. Our catalogs are filed in Sweet's.

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# the new and modern clay tile adhesive by 3M cuts installation costs up to 20%!

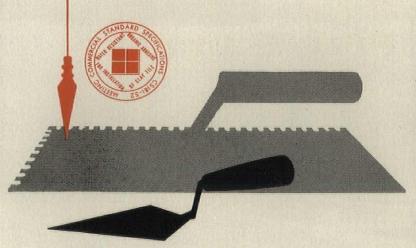


Now <u>architects</u> can have their way in specifying durable, practical, beautiful clay tile for even low-budget installations . . . because CTA-11 is here! Now <u>builders</u> can use "dry wall," and get a clay tile job that will last a lifetime . . . because CTA-11 is here! Now <u>tile contractors</u> can set tile faster at up to 20% savings in cost, remodel without rebuilding walls . . . because CTA-11 is here!

CTA-11 is the new, the <u>modern</u> clay tile adhesive that holds clay tile fast to almost any plumb surface. It's tough, resilient, durable . . . resists cracks, moisture and settling . . . spreads neatly like butter right out of the can!

Say CTA-11 on your specification sheets. Say CTA-11 to your supply dealer. It's on his shelves right now...ready to start cutting costs for you.

To profit from the same dollar-saving advantages in setting floor tile, specify CTA-12. For the complete details on CTA-11 and -12, write today to 3M, Department 185-417 Piquette Avenue, Detroit 2, Michigan.







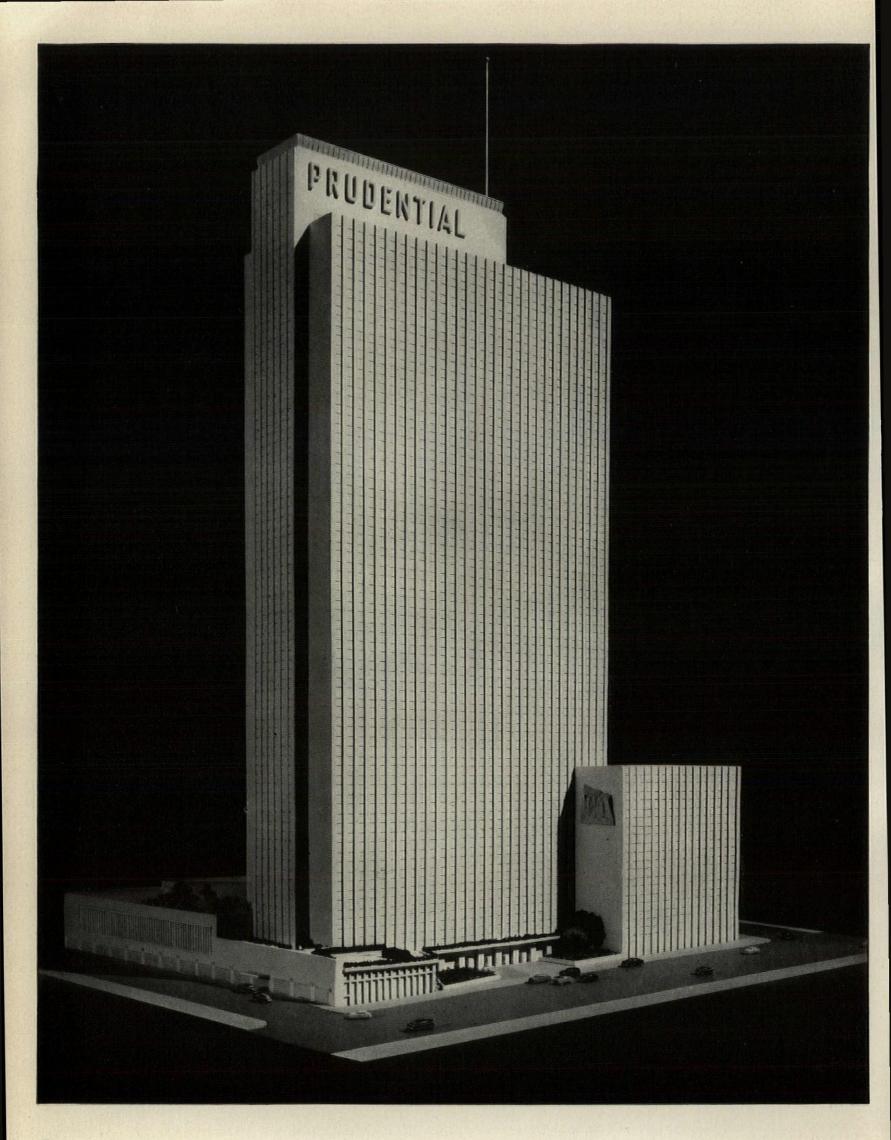
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PRUDENTIAL BUILDING, Chicago, III. (Now under construction)
ROOFER: M. W. Powell Co.
ARCHITECT: Naess & Murphy
GENERAL CONTRACTOR: Geo A Fuller Co.

# New "Gibraltar" over Lake Michigan

The Prudential Insurance Company has long used the Rock of Gibraltar as a symbol of its strength. Now Prudential can point with pride to a manmade "Gibraltar" of its own—the magnificent new Prudential Building on Chicago's lake front. It is the tallest building in Chicago, the fifth largest office building in America—architecturally and commercially one of the most outstanding construction projects in recent years.

Two other notable new "Gibraltars" are the Prudential Buildings in Jacksonville and Minneapolis—both far and away the most modern and capacious office buildings in their respective regions.

Newsworthy and significant is the fact that all three of these important buildings will enjoy the superior protection of Barrett Roofs!

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BARRETT DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.; 205 W. Wacker Drive, Chicago 6, Ill.; 36th St. & Grays Ferry Ave., Philadelphia 46, Pa.; 1327 Erie St., Birmingham 8, Ala.; Melrose Building, Houston 2, Texas.



PRUDENTIAL BUILDING, Jacksonville, Fla., (Now under construction)
ROOFER: Ferber Sheet Metal Works, ARCHITECT: Kemp, Bunch & Jackson,
GENERAL CONTRACTOR: Daniel Construction Co.



PRUDENTIAL BUILDING, Minneapolis, Minn., ROOFER: John A. Dalsin & Son, ARCHITECT: Magney Tusler & Setter, GENERAL CONTRACTOR: C. F. Haglin & Sons



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## **PARENTHESES**

#### (BOUNDARIES)

Yale University's planners, directed by Professor Christopher Tunnard, have defined a new US "city" along the Atlantic Coast from Virginia to Maine. The population of this city is about 34 million people, and it includes Washington, Baltimore, Philadelphia, Newark, New York, New Haven, Hartford, Springfield, Boston, Providence and Portsmouth.

City Planner Tunnard explains: "Once we thought in terms of a single city, like New York or Philadelphia. Then we began planning for metropolitan areas. We are now forced to think in terms of the regional city, that is, a new concept of an over-all city which contains many cities within one whole."

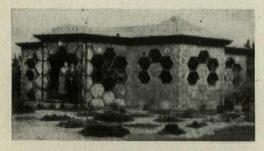
This seems to be one of those rare, illuminating phrasings which may refocus an entire science. Yale's planners had better stay away from Fort Worth and Dallas for the present, of course, but the time may come when even those rivals share a development plan (and airport).

#### (CENTER HALL)

By the way of the Christian Science Monitor comes an organic architectural note from New Zealand: a man who has kept bees for 34 years has finally built a hive for himself.

"From his long experience as a beekeeper, George Brewster has discovered that bees knew what they were doing when they chose the hexagon as a basis for hive construction.

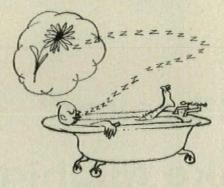
"And since it was good enough for the bees, it was good enough for Mr. Brewster, 'something superior,' he said, 'to man-made right angles.' So he built a house of no



right angles using the hexagon as the basis of measurements and design.

"... 'The benefits are manifold,' he said. 'For the hexagon,' he added, 'provides greater floor space for relative wall space, greater storage capacity, and far greater strength for the construction unit.'

"Mr. Brewster's own house consists of seven equal-sized rooms or units, all opening from a central hall and joined by quaintly shaped archways which can be curtained or fitted with sliding doors. "The only discordant note to Mr. Brewster is the rectangular bath, but the plumber just could not bring himself to follow the suggestion to 'knock the corners off.'"



(MEANING)

The new Toronto clubhouse of the Ontario Association of Architects shown in last month's issue (AF, April '55) has stirred considerable envy among US architects. One feature of the building also has stirred specific questions: what is the symbolism of the handsome sculpture by Jean Horne which rests on the OAA porch?

A wire forwarding the question to the OAA brought a quick answer, also by telegram:

JEAN HORNE UNABLE TO DECIDE ON WHICH OF THE ETERNAL TRIANGLES THAT SEEM TO OCCUR IN ARCHITECTURAL THOUGHT, NAMELY



QUOTE FIRMNESS COMMODITY AND DELIGHT UNQUOTE QUOTE SPACE TIME AND ARCHITECTURE UNQUOTE QUOTE ART SCIENCE AND BUSINESS UNQUOTE QUOTE THE ARCHITECT PLANT AND CONTRACTOR UNQUOTE HAS CALLED THE SCULPTURE QUOTE THE TRIO UNQUOTE STOP IT IS ALSO KNOWN TO MORE THAN ONE FACETIOUS MEMBER AS QUOTE ONE FOR THE ROAD UNQUOTE STOP DESIGN SYMBOLIZES THE RECURRING CYCLE OF IDEAS AND THE INTEGRATION OF THE ELEMENTS OF ARCHITECTURE.

ONTARIO ASSOCIATION OF ARCHITECTS

No, Virginia, it does not, repeat, does not,
represent an architect dancing with the
client's wife.

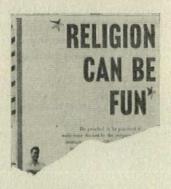
#### (PASSION)

Last month a revival of Ibsen's The Master Builder finished a successful run at the Phoenix theater in New York. This is the play about old Halvard Solness, written in 1892, which may have set the pattern for one of the two stock characterizations of architects by dramatists—an architect, the egomaniacal genius who has paid in personal sacrifice for his artistic expression. The other popular dramatic interpretation of architect, of course, is the suave, well-tailored extra man in the background of the plot structure, Claudia's husband David, etc.

Time may be drawing near for exploiting the profession in the movies again, in a big way; it has been years since the Fountainhead and Mr. Blandings Builds His Dream House, and the movie-makers are fast running through the other professions.

To quote two recent movie advertisements:

1. "A Man Called Peter" in Cinemascope.



"He preached it, he practiced it . . . and some were shocked by the irrepressible Scottish immigrant who wouldn't wear a clerical collar and would play baseball . . . but millions of others, including US senators, stood outside in the rain to hear young Peter Marshall speak.

"God was Peter Marshall's friend . . .
"NOTE TO PARENTS! If you can't take the children to Washington, D.C., in cherry-blossom time, take them to see A Man Called Peter. Our beautiful, historic capital city comes to life in Cinemascope and Color by De Luxe."

2. "ROBERT ROSSEN'S Mambo



"The exalting story of a slum girl who attains integrity through her experiences with men and her love of the dance."

To improvise a third advertisement:

3. DRAFTO— in True Perspective!

Architecture can be living!



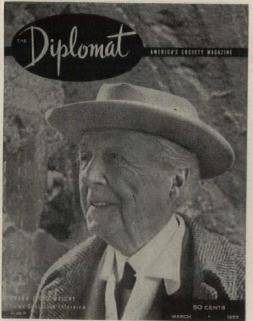
He designed it. He got it through the building department. US senators cheered this inspiring story of a draftsman who attains integrity through his experiences with contractors and his love of the dance.

Coming all too soon to your neighborhood playhouse.

#### (THE EYES)

Few dictionary definitions of "diplomat" cover the word's use on the cover of the magazine below. *Diplomat* just happens to be the name of a magazine.

Helen Levitt



But dictionary definitions can be very enclosing, like a box. For example, a few weeks ago the man on the *Diplomat* cover participated in a symposium meeting of Artists' Equity Association in New York. Frank Lloyd Wright strode in, was received warmly, and began, roughly, "I assume that since this is Artists' Equity, everyone here continued on p. 62



# Let's talk "DARK ACCENTS"

For mullions, spandrels, and trim.

With Alberene Stone — in tones that range from silvery gray to dark gray; greenish blue to black; and jet black.

Alberene Stone — the natural silicate stone — offers durable "dark accent" beauty. Its low absorbency, fine grain and absence of stratification prevent chipping and cracking in freezing weather. Its all-silicate mineral components resist chemical attack and loss of surface polish.

Alberene Stone can be cut into sections as thin as 7/8" and 11/4". It offers designers economy, and increased flexibility in design—such as greater depth of reveal in spandrels.

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

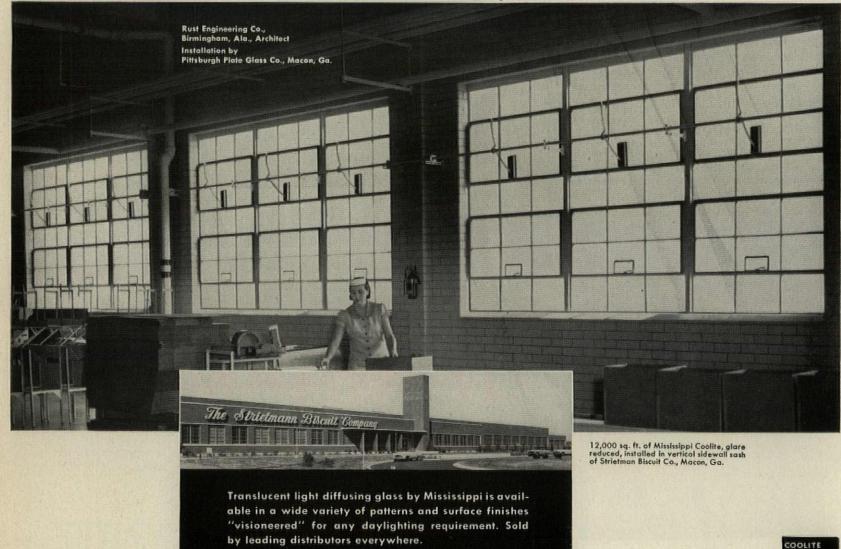
# ALBERENE STONE

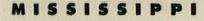
provides LOW ABSORBENCY protection

# A Srighter PRODUCTION PICTURE Coolite Helps Keep Costs Down, Worker Efficiency Up With Better, Cooler Daylighting

Extensive use of Coolite, the Heat Absorbing Glare Reducing Glass, enables the Strietman Biscuit Company to brighten this modern plant with copious quantities of natural illumination at low cost, yet keep interiors cooler, more comfortable. For Coolite's amazing ability to absorb up to 50 per cent of solar rays keeps this unnecessary and unwanted heat from work areas, lessens need for mechanical cooling. And Coolite light is comfort-conditioned as well. The glare reduced glass makes seeing easier, cuts harsh glare that causes eye fatigue and visual errors. Employees see better, feel better, work better under Coolite's cooler, better light.

Coolite can help brighten your production picture. If you are planning to expand or modernize facilities, it will pay you to find out how Coolite, Heat Absorbing and Glare Reducing Glass can increase efficiency and economy. Coolite's filtered light boosts employee morale, reduces rejects. Specify Coolite, famous Mississippi Glass.





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Lass COMPANY

SAINT LOUIS 7, MO.



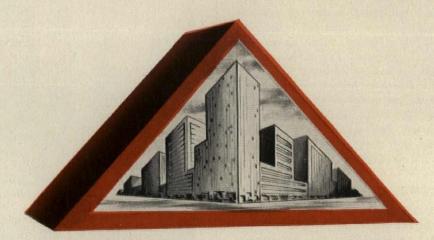
Send for free catalog. Address Dept. 6



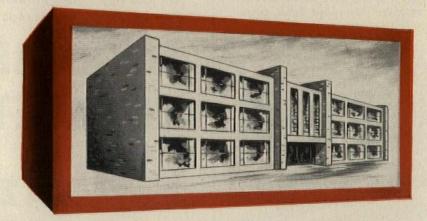
WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

## ENGINEERED TO FIT THE EXACT NEEDS OF THE INDIVIDUAL BUILDING

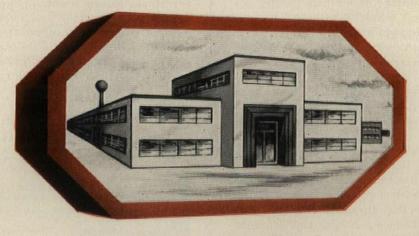
## **JOHNSON** Automatic Temperature CONTROL



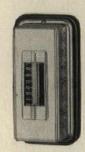
OFFICES, STORES, PUBLIC BUILDINGS



SCHOOLS, HOSPITALS, INSTITUTIONS



INDUSTRIAL BUILDINGS



Every building presents a different temperature control problem. So does its heating, cooling, ventilating or air conditioning system. That is why architects and engineers, seeking to insure the *finest* in control for their buildings, turn their temperature regulation problems over to Johnson.

The nationwide Johnson organization originated the idea that temperature control systems must be specially designed according to the requirements of the particular building and its heating, ventilating or air conditioning installation. For over 70 years, Johnson has manufactured automatic temperature control apparatus and, beyond that, has planned and installed every one of its systems to fit the exact needs of the individual building.

This undivided interest in and responsibility for the entire sequence of operations results in temperature control systems that are unsurpassed for efficiency, economy, comfort and convenience.

Any building—small or large, new or existing—can enjoy the benefits of Johnson Control. Why don't you take advantage of Johnson's unmatched experience on your next job and be sure of getting the finest in control? The recommendations of an engineer from a nearby Johnson branch are yours without obligation. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

# JOHNSON, CONTROL

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**SINCE 1885** 

# MAXIMUM FORM RE-USE Estimate assumes panelized sections, standard tie-hole placement, reasonable care on job. RE-USES 75 Avg. for appearance concrete; up to 200 reuses have been reported. 50 Lumber Interior Exterior PLY-Forms PlyForm PlyForm GLAZE

On job after job, concrete form re-use records show...

# BETTER "MILEAGE" with

# PLYGLAZE

TAKE it from a firm that makes all three kinds of form materials:

Lumber forms are satisfactory (when neither re-use nor appearance count).

Plywood is much better. (Gives fair re-use, decent-looking concrete.)

PlyGlaze is best by far. (Gives most re-uses, very smoothest concrete.) Use coupon below for information.

ST. PAUL & TACOMA LUMBER CO.



#### **PARENTHESES**

continued from p. 59

is an artist. Well I am here as a representative of the Mother of Arts, Architecture, and I must tell you that for the past 50 years Architecture has been out in the gutters, prostituting herself, which makes you, all of you, illegitimate." The audience loved it and kept him talking an hour.

FLLW has perhaps broken out of the box and built a new wing on the meaning of diplomacy. "It's all in the eyes," he said recently. "When they watch my eyes while I'm talking, they don't get angry." The eyes sparkled and he laughed.

#### (MR. CHAIRMAN!)

On April 22, more than 400 of the 1,500 members of the American Institute of Decorators had arranged their lives to convene in New York and begin a 40-day business meeting. The meeting was to be held on a Greek passenger ship called T.S.S. Olym-

LIFE-Peter Stackpole



pia, and during the business meeting the Olympia was scheduled to meander across the Atlantic and through the Mediterranean. Our deadline forbade reporting the farewell party, but there is little doubt that the AID is seaborne as we publish.

All this started with a simple letter from the AID which came last November:

"The Conference Travel Committee, William Pahlman, chairman, has submitted the following plans for the AID 1955 Conference in Europe. . . .

"... it was suggested we sail from New York... with stopovers at Lisbon, Algiers and Athens, then disembark at Naples, with visits to Pompeii, Amalfi and Sorrento. Then would follow visits to Rome, Florence, Venice, the hill towns of Italy, Milan, Genoa and other cultural centers of particular interest to our members. From Nice, with a side trip to Monte Carlo, we would proceed along the Italian-French Riviera and through the Chateau Country by rail to Paris....

"Our business meetings would be held on board ship. The cost of the cruise-tour would therefore be a deductible business ex-

continued on p. 66



On jobs like famed Parklabrea housing project, users report...

# SMOOTHER CONCRETE

with

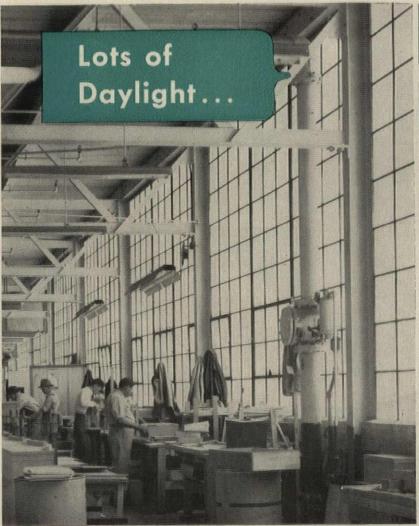
# PLYGLAZE

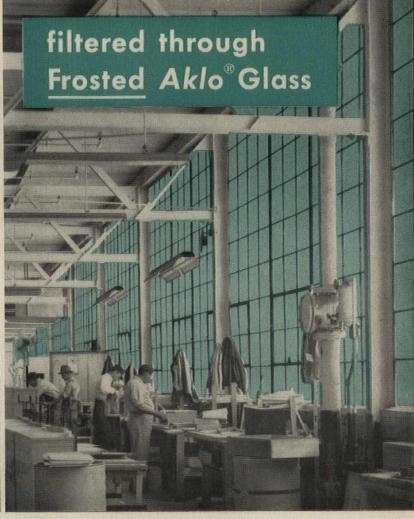
SMOOTH, densified fused resin-fiber surfaces assure finest architectural concrete—flawless and even textured, with no trace of grain pattern, knots or repair plugs. PlyGlaze cuts finishing time and costs. Eliminates expensive plastering. Ceilings and walls can be painted direct after a minimum of finishing. For details see Sweet's Architectural File or write:

ST. PAUL & TACOMA LUMBER CO.



# Formula for good seeing:





Take two things out of daylighting-glare and sun heat-and you have the finest light for good workmanship.

That's just what Frosted Aklo Glass does for you. It softens and diffuses direct sunlight, sky brightness and dazzling reflections. Rooms not only seem cooler behind this glass . . . they are cooler. Aklo Glass in 1/4" thickness shuts out as much as 44% of the sun's radiant energy.

These are good reasons why you see blue-green Aklo Glass in the window walls of so many of today's new buildings.

The pay-off? Greater comfort for occupants, better workmanship, better employe relations, reduced airconditioning costs.

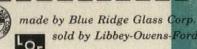
#### PHONE FOR THIS TEST



A call will bring a radiometer demonstration kit to your desk. It shows you how Aklo Glass reduces glare and sun heat. Call your L·O·F Glass Distributor or Dealer listed

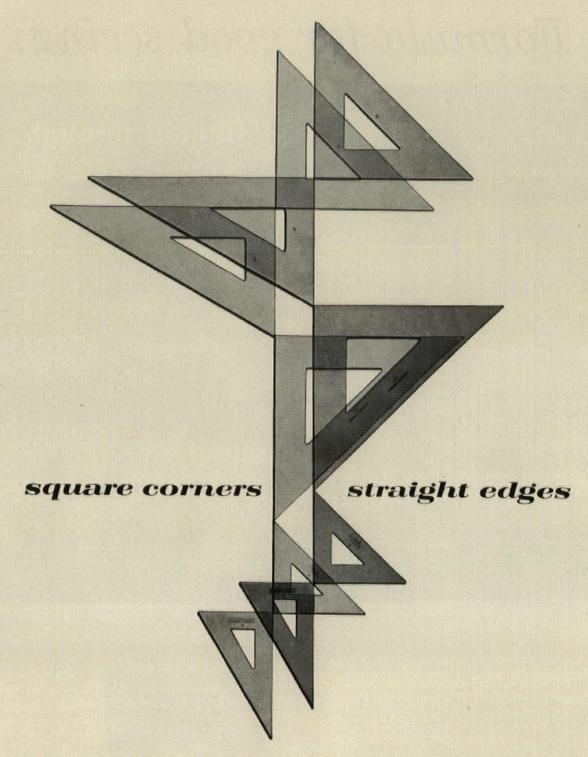
under "Glass" in the yellow pages of your phone book. Or write to Libbey Owens Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

## AKLO GLASS



#### FILTERS DAYLIGHT

sold by Libbey-Owens-Ford Glass Distributors



High-precision manufacturing equipment and constant laboratory checking enable us to make sure that every resilient tile we produce is straight-edged and square when it leaves the factory; efficient modern packaging keeps it that way until ready for installation. These precision-cut tiles fit together

smoothly and easily for low installation costs, and minimize wastage. Uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness, ease of maintenance and built-in durability—all of these qualities combine to make this line the world's most popular line of resilient tile floorings.

# KENTILE, INC.

America's largest manufacturer of resilient floor tiles

KENTILE: Asphalt Tile . . . Carnival . . . Corktone • KENCORK: Cork Tile for Floors and Walls • KENRUBBER: Rubber Tile • KENFLEX: Vinyl Asbestos Tile . . Carnival • KENFLOR: Vinyl Tile . . . also available by the yard • SPECIAL KENTILE: Grease-proof Asphalt Tile • THEMETILE, KENSERTS: Decorative Inserts • KENCOVE: Vinyl Wall Base • KENBASE: Wall Base



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Beautiful, modern windows . . . maximum control of ventilation . . . full natural lighting . . . functional windows that serve as walls, yet cost less. VAMPCO INTERMEDIATE COMBINATION WINDOWS and VAMPCO SASH, SILL, and COLUMN COVERS play an important part in giving the Curtis 1000 Inc. plant the "futuristic look" that means so much in modern comfort and convenience. Architects and contractors everywhere are learning to build with VAMPCO for extra strength and durability . . . for out-of-this-world beauty at lowest possible construction cost. Find out how VAMPCO's special designing service can help solve your unusual building problems . . . WRITE TODAY!

## VALLEY METAL PRODUCTS CO.

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SUBSIDIARY OF MUELLER BRASS CO., PORT HURON, MICHIGAN See Complete File In Your Current Sweet's Catalog















INTERMEDIATE WINDOWS FOR COMBINATION PROJECTED GLASS BLOCK CASEMENT AND PROJECTED VAMPCO A NAME THAT MEANS THE VERY FINEST IN LIFELONG ALUMINUM WINDOWS

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- ☐ Please send me 40-Page Catalog of Industrial and Institutional Windows.
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# Airtherm ROOF DECK



## designed for a wide range of applications

Airtherm Steel Deck Sheets are furnished in 30" widths (the widest in the industry) with five ribs spaced on 6" centers. These ribs, 15/8" deep, have a bearing surface of 5/8" and a top opening of only 3/4" wide. These wider, self-aligning sheets mean fewer longitudinal laps with resultant savings in construction time and costs.



In this church the attractive appearance of painted Airtherm Roof Deck adds functional beauty to the clean design

Airtherm Decking provides a strong, safe and durable steel roof in flat, pitched or arched construction. It has been proved in installations as side walls, partitions, canopies, and as a sub-base for concrete or aggregate flooring. This versatility, plus its attractive appearance, has led to many unique applications in a wide range of structures.

18-GAUGE AIRTHERM ROOF DECK	PROPERTIES
Section Modulus (in.) 3	.220
Moment of Inertia (in.) 4	.263
Resisting Moment (in Ibs.)	3960

To care for all contingencies relative to geographical areas and various purlin spacing, Airtherm Decking is also manufactured in No. 22 Gauge and No. 20 Gauge metal thicknesses.





For more complete information consult our catalog in Sweet's 2dAi,

745 South Spring Avenue St. Louis 10, Missouri

Member: Metal Roof Deck Technical Institute

#### PARENTHESES

continued from p. 62

pense when computing income taxes because the trip would be our official Annual Meeting.

"It is estimated that the length of the round trip, New York and return, would be about 40 days."

There were further details in the Feb. '55 issue of Interiors magazine: "In order to arrange the official itinerary . . . it is essential that all those taking part travel at least as far as Milan. Athens is optional."

This prompted us early in April to call up the Allen Travel Service (who arranged the AID meeting) and ask how plans were coming along. "Fine," was the answer, "\$850 . . . almost booked up, but might possibly squeeze in one or two more." Was Athens really optional? "Oh yes, more than you can imagine." Then the Allen Travel Service reversed the interview and asked a question-"Why doesn't your magazine send you along?"-which caused the conversation to fall to pieces.

It makes one turn the clock back to last December, for a sobering comparison with that other professional organization, the American Institute of Architects. You may remember the pronouncement of the New York AIA's executive board in their publication, the Oculus, which cried out against the number of Christmas presents, especially bottles, that contractors were about to give architects: ". . . Isn't it getting out of hand? . . . The committee is considering means for bringing this to the attention of the too generous donors." (For full, rich quote, see AF, Jan. '55.)

And so we take leave of the decorators, as they shake the world for 40 days to loll in luxury, with the AID secretary taking minutes, hours and weeks. And the architects, who, by proclamation, are resting on their principles-if you remember the great George Price cartoon .- W. McQ.



"Well, maybe you're sitting on the wrong end."

Reproduced by permission O 1939 The New Yorker Magazine, Inc. economical "wall-and-finish-in-one"

# STARK

glazed facing tile

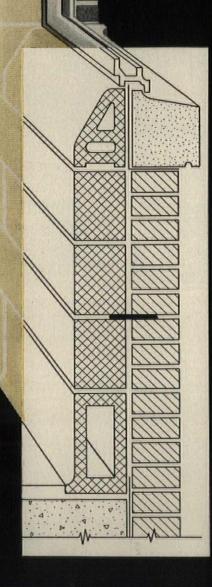
No wonder this versatile material is currently in such great demand!

It builds a sound structural wall and a permanent, colorful ceramic finish at the same time—saves construction time and maintenance money.

And you can be sure that Stark Glazed Facing Tile will stand up under heavy usage —it's a quality product, backed by more than 40 years of manufacturing experience.

To obtain the quantities and colors you need for your next job, advise your contractor to order promptly—an early order is your assurance of timely delivery. There is no reason to accept a substitute.

**NEW CATALOG** showing shapes, sizes, accurate colors, is available to you free.



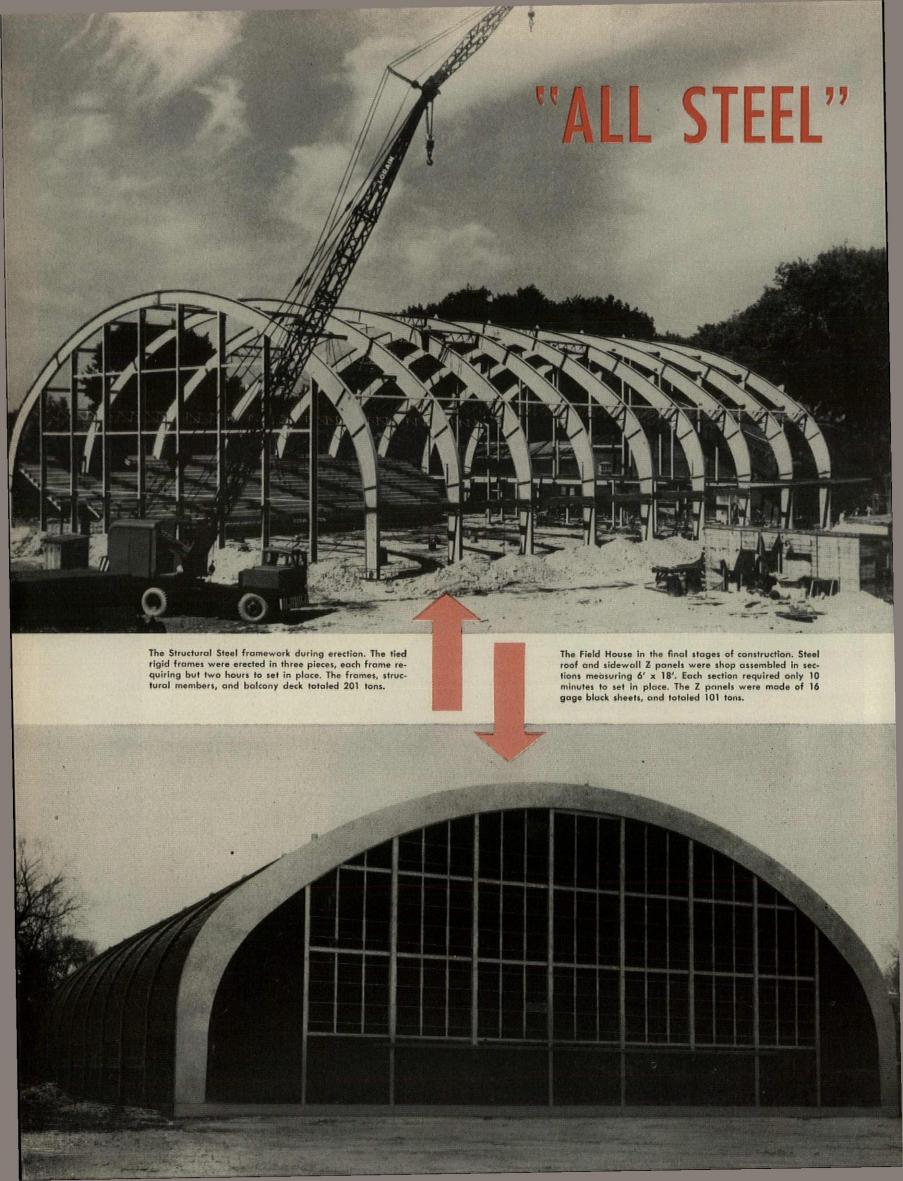


STARK CERAMICS, INC.

Canton 1, Ohio

14305 Livernois Avenue, Detroit 4, Michigan • 15 East 26th Street, New York 10, N. Y.





# FIELD HOUSE erected at Allegheny College

The New Field House at Allegheny College, Meadville, Pa., is virtually an "all steel" structure, since the rigid frames . . . the roof . . . sidewalls . . . entry ways . . . windows . . . all the trim . . . and even the balcony deck are of steel.

Installations such as this illustrate the amazing versatility of steel — the versatility that permits steel to do so many jobs so well. And they illustrate, too, the strength and safety offered by Structural Steel. It's common knowledge that Structural Steel is the strongest of load-carrying materials. It will withstand more abuse than other structural materials, effectively resisting tension, torsion, compression and shear. Yet, Structural Steel is the

most economical of load-carrying materials. Enclosed in buildings, it will last indefinitely—requiring no maintenance. Equally adaptable to riveting, welding or bolting, it can be erected in any weather in which men can work. Moreover, since Steel members are fabricated indoors, weather can have no effect on the quality of workmanship.

Structural Steel and panel designs, plus fabrication and erection were by the Pittsburgh-Des Moines Steel Company, Pittsburgh 25, Pa. The architect was Lorimer Rich and Associates, New York 9, N. Y. Consulting Engineers to the Architect were Severud-Elstad-Krueger, New York, N. Y. General Contractor was Crump, Incorporated, Pittsburgh, Pennsylvania.

SEE The United States Steel Hour. H's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

UNITED STATES STEEL CORPORATION, PITTSBURGH + COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

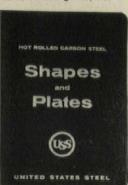
# USS STRUCTURAL STEEL



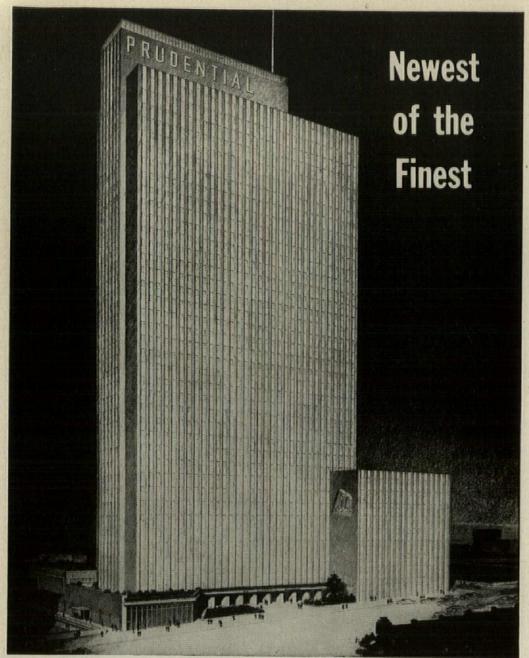
UNITED STATES STEEL

Interior — nearing completion. The Steel deck balcony was designed and built by the Pittsburgh-Des Moines Steel Company under its patents for Steel Deck Grandstands. Opening frames, closures, and trim — all of steel — amounted to 30 tons.

This excellent booklet is now available FREE of charge. For your copy write to United States Steel Corporation, 525 William Penn Place, Room 4670, Pittsburgh 30, Pa.







Prudential Building, Chicago • Naess & Murphy, Architects • Geo. A. Fuller Co., Contractors

The new Prudential Building will soon rise 600 feet above the shore of Lake Michigan, and become a distinguished addition to Chicago's skyline. This mid-America headquarters of the Prudential Insurance Company will contain more space than any other building used exclusively for offices in Chicago.

As a building, it will take its place among our country's finest structures and is a perfect example of the features a well-informed investor is willing to put into the space he plans to use and rent. For instance, to prevent future obsolescence and to meet the increasing requirements of modern electronic office

equipment, architects Naess & Murphy have prepared the new Prudential Building to handle the highest electrical load of any office building yet built. To do this job easily, and to permit layout changes and additions at minimum cost, Robertson Q-Floor construction is being used. This strong, light-weight, steel, cellular structural floor is the only construction material available which provides easy electrical access over every 6-inch area of the entire exposed floor. For more good reasons why fine new buildings all over America have turned to Robertson Q-Floor construction, see the opposite page.

# Q-FIOOF

Backed by 24 Years' Experience and Thousands of Installations

a product of **H. H. Robertson Company**2403 Farmers Bank Building · Pittsburgh 22, Pa.

Offices in All Principal Cities World-Wide Building Service

## **LETTERS**

#### HOWARD JOHNSON

Forum !

The new Howard Johnson restaurant designs are among the most satisfying sights along the highways. Congratulations to Architect Nims for making the architecture as yummy as the ice cream and to the FORUM for recognizing this inspiring work.

GEORGE C. RUDOLPH, architect New York, N.Y.

Forum

I have just finished reading the March issue of FORUM and wish to compliment you for its thoroughness and interesting copy from cover to cover.

The article on Howard Johnson's new restaurant design was especially interesting and showed how the right type of architectural planning can make for greater efficiency and just how a medium such as yours can stimulate ideas for better building and renovations.

JOSEPH J. GIBNEY, vice president Longchamps Restaurants New York, N.Y.

#### SHARIWAGGI

Forum:

In a recent advertisement of the Marble Institute the word "Shariwaggi" was used, credit for the word being given the Feb. '54 edition of your publication.

Our bank is just completing a remodeling program. We have selected the word "Shariwaggi" as the theme of the opening and are conducting a contest for the best explanation of the word.

May we have your permission to quote your magazine as to the correct meaning of the word?

> ROLLA M. VARNDELL, Fayette National Bank & Trust Co. Uniontown, Pa.

Permission granted. FORUM's interpretation: "Shariwaggi is a word from India describing the art of picturesque composition in combining new architecture with old so as to enhance both."—ED.

#### SCHOOL FINANCE

Forum:

The recent editorial on school finance (AF, Feb. '55) is both timely and of great significance to the people of America.

Education without question is the most urgent problem which confronts the peoples of the free world today. Never before in history has so much been expended in armaments and so little in proportion for education, and yet our national survival, both materially and culturally, is dependent on education keeping pace with all aspects of human endeavor.

The antiquated system of paying for education with real estate taxes is completely inconsistent with the times. Other methods for providing these desperately needed educational facilities must be investigated during the normal process of this transition. To implement these changes, it becomes necessary to prevent nationalization and state bureaucracy from strangling the very opportunities which education endeavors to provide. Your editorial is very stimulating and should be further explored for a practical solution to this very critical problem.

MARIO J. CIAMPI, architect San Francisco, Calif.

Forum:

. . . Very enlightening and very timely. RICHARD W. PRENDERGAST Assistant architect Department of architecture and building repair Board of Education Chicago, Ill.

Forum:

We appreciate your excellent editorial. It may be of particular help to the legislature in resolving the question of whether or not the state of Washington will set up a school building authority to administer the school building program. Copies of your editiorial were sent to all superintendents of schools and members of the legislature.

It appears that the governor's bill setting up an authority went a little too far in its proposals. In essence, the bill 1) creates a commission, the majority of whose members are appointed by the governor, 2) takes the administration of the school building program from the office of the state superintendent of public instruction and places it in the hands of this commission, 3) removes all policy-making from the state board of education and gives it to the commission, 4) fails to provide help for poor districts in the payment of school rent.

Seventy-seven of the state's 500 school districts are bonded up to the state statutory limitation which involves practically all the school districts in the state having excessive population increases. Most of these districts could not possibly pay the rent on school buildings except through special levies. A quick survey indicates that an annual 10- to 50-mill special levy on real estate in the local districts for a 30-year period would be necessary to pay the rent to a school building authority. Obviously this rent would be far in excess of what one could reasonably expect local districts to raise in special levies.

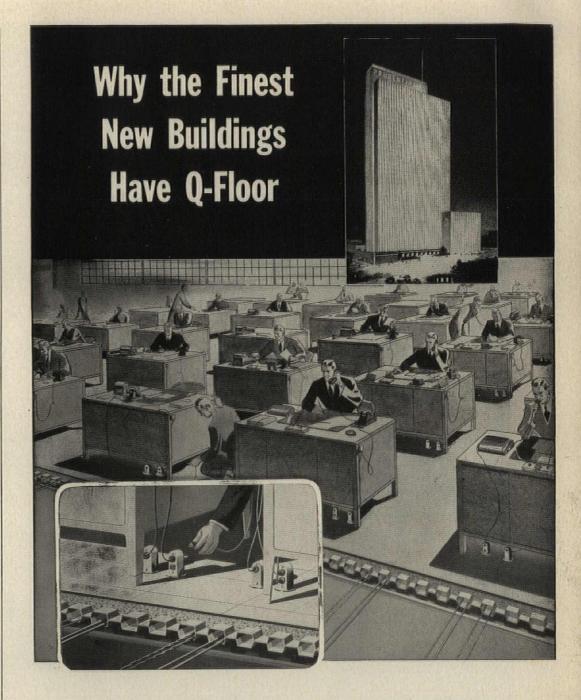
School groups in the state of Washington are opposed to the governor's bill and we hope that the legislature will appropriate \$30 million in state matching funds to be administered by our office and the state board of education.

HAROLD SILVERTHORN Consultant in school building facilities State Department of Education Olympia, Wash.

#### HOSPITAL RESEARCH

Forum:

In the December FORUM you published studies by Mr. R. Llewelyn Davies of Engcontinued on p. 78



Beyond the fact that Q-Floor offers the greatest electrical availability of any structural floor in existence (as indicated in the above illustration), there are several other vital reasons why it has become a part of the finest new buildings in America.

Q-Floor saves construction time and money. The steel cellular units come on the job cut to fit so that two men can lay 50 square feet in one minute. In the case of the U.S. Steel-Mellon Bank Building in Pittsburgh, forty floors were installed in four months. Because Q-Floor provides a perfect platform for work and storage, 1,000 men were able to operate on the job without interfering with each other. Q-Floor saves steel as a result of its favorable ratio of weight to strength. Footings and structural steel can be lighter than with ordinary construction. Moreover, Q-Floor saves drafting room time since completely predetermined wiring and mechanical layouts are not necessary. Because no combustible forms and shoring are required, there has never been a construction fire on a Q-Floor job. Add these features to low cost on wiring changes in the years to come, and it's easy to see why Q-Floors are a feature of America's finest new buildings.

The Robertson Technical Library contains data books on Q-Floor which should be part of every architectural and engineering library. Write to us.

## Robertson

Backed by 24 Years' Experience and Thousands of Installations

a product of H. H. Robertson Company

2403 Farmers Bank Building . Pittsburgh 22, Pa.

Robertson-Irwin Ltd., Hamilton, Ontario Robertson Thain Ltd., Ellesmere Port, Cheshire



# The JOHN SEALY HOSPITAL

UNIVERSITY OF TEXAS

MEDICAL BRANCH

GALVESTON, TEXAS

Architects C. H. PAGE & SON, Austin, Texas

Consulting Architects EGGERS & HIGGINS New York, N.Y.

Mechanical Engineers ZUMWALT & VINTHER Dallas, Texas

Contractor FARWELL & COMPANY Dallas, Texas





Below: Post Operative Recovery Dept. has nine beds.



Below: Research Laboratory

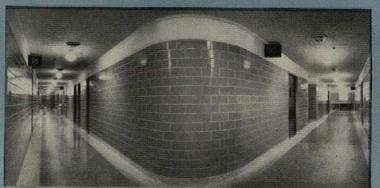


One of the most important features of this 1000 bed hospital valued highly by patients and staff alike is: It is completely air conditioned throughout and Powers controlled.

Left: View of Entrance Lobby with Portraits of the Founder, John Sealy, Sr., and John Sealy, Jr.



Below: Surrounding Corridors for Central Operating Rooms



#### Behind the scenes in this modern hospital

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Automatic
TEMPERATURE and
HUMIDITY Control

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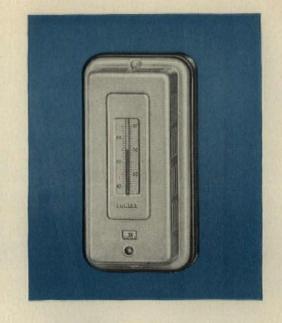
Radial Type Surgical Department shown in drawing below, is one of the many new concepts incorporated in this center for healing.

The radial type plan is based on a theory of centralization permitting a compact layout to increase nurses' efficiency by reducing their steps. Powers automatic control of the working climate further increases staff efficiency and contributes to the health and comfort of the patients.

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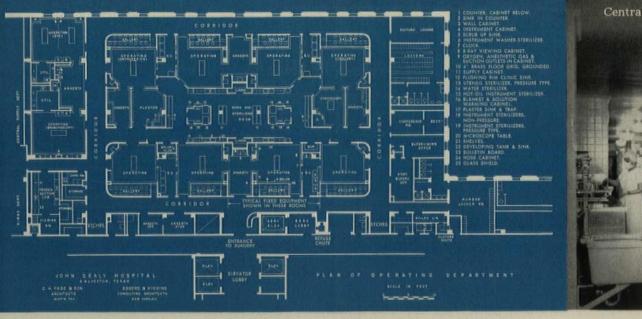
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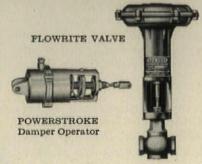
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On the waterfront. Over 22,000 pounds of Monel went into construction of the batten seam roof, flashings and 60-inch-wide gutters of the new

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This is the roof of the new Marine Storage Building on the St. Lawrence River in Quebec.

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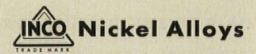
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The full picture. Here is an over-all view of the huge Marine Storage Building. For the batten seam roof—and for all flashings—.018" Monel was used. The gutters took .031" Monel—still a comparatively light gauge considering the rigidity required in 60-inch gutters. The sheet metal contractor, Alelard Laberge, Ltd., used Monel cleats and Monel "Anchorfast" nails throughout.



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1939 — Kleinhans Music Hall, Buffalo, N. Y. Architects: F. J. & W. A. Kidd, Eliel Saarinen. H 

M

H



1949—S.S. Independence, American Export Lines. Designed by Henry Dreyfuss.



1954-New York Univ.-Bellevue Medical Center, NewYork. Archi-tect: Skidmore, Owings & Merrill.

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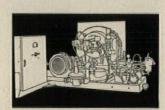
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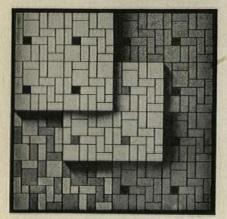
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#### **LETTERS**

Continued from p. 71

land which defined the organization of a hospital nursing unit. I found these studies very rewarding. The investigation of bedfast, semiambulant, ambulant patients and single-room needs which led to the ward plan in Belfast is the only one I know which dealt with vital needs and not generalities.

The two 20-bed groups of six beds, four beds and single-bed rooms are rationally balanced, and the auxiliary rooms placed between them make for group-team-nursing and produce a compact 40-bed nursing unit of no more than 165' in length. All this has been achieved without waste in width for excessive single or double corridors or need for air conditioning, and it is remarkably clear in its organization.

I am wholeheartedly convinced that by using flat-slab construction and eliminating lintels, reflected and diffused ceiling light is of great help for better utilization of more economical deep bay construction. The reproduced cross-section is, I am sure, a great improvement in daylighting not only of hospitals, but also schools and other institutions.

I hope you will publish more of Mr. Davies' work,

JOSEPH NEUFELD, architect New York, N.Y.

#### TORROJA'S CONCRETE

Forum:

The photographs of the Technical Institute of Cement Construction near Madrid show once more the imagination of Eduardo Torroja, who is indeed one of the great architect-engineers of our time (AF, Feb. '55).

I found some of the photos very interesting; others I dislike. I do not understand either esthetically or structurally the reasons behind the Dodecahedron Coal Bunker. The formal rigidity of this structure, the cruel sharpness of its edges make it a most abstract and nordic piece of sculpture which does not seem to integrate well with the rest of the project and, above all, does not fit with the Spanish character of the Institute.

On the other hand, I find the pergola extremely gracious and the wire mesh laces a stroke of genius. It's just too bad they will be covered by vines.

MARIO G. SALVADORI
Professor of civil engineering
Columbia University
New York, N. Y.

Forum:

Your article on Torroja's sculptural concrete in the February issue is a splendid introduction to the exhibition "Structure and Space in Contemporary Architecture an Engineering" organized by the Museum of Modern Art in New York and currently circulating in the US, Canada and South America. (It has already been seen in Lawrence, Kan., Winnipeg, Louisville, Ky., and goes to Williamstown, Mass., Pough-

continued on p. 86

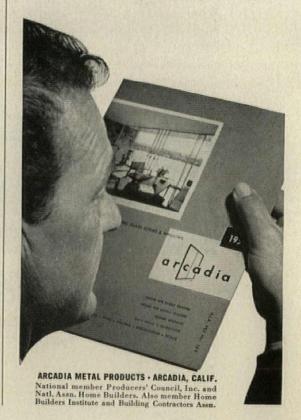
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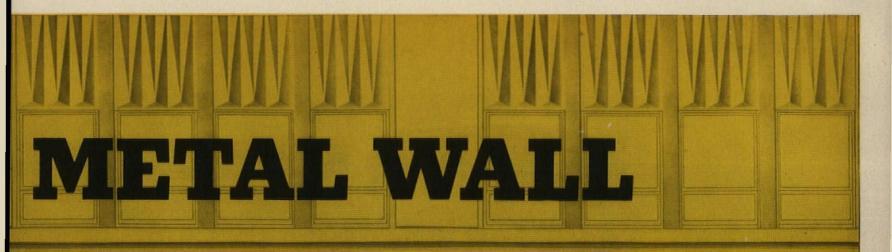
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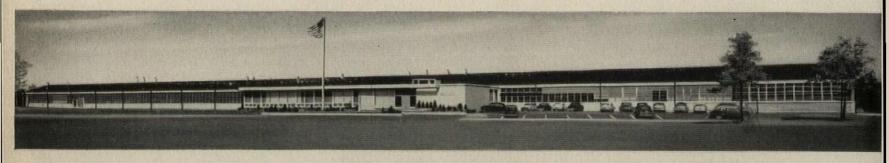


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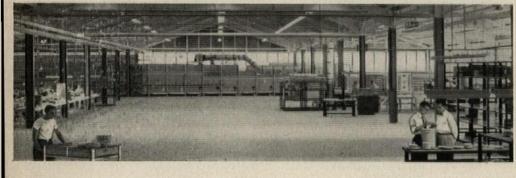


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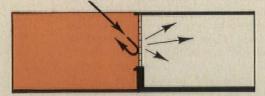
Because of its light-selecting principles this new block has a much lower surface brightness than other glass block. Maximum surface brightness as measured at the Daylighting Laboratory is less than 1400 foot-lamberts.



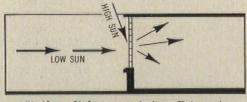
Thermocouples applied to the face of the 80-F block during hot weather (outside temperature 90°) showed that the roomside surface temperature was 14 degrees less than a conventional type light-directing block.



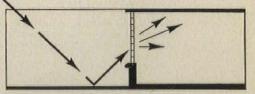
A similar test using a portable pyrometer confirmed the findings of the test using thermocouples by showing the same 14 degrees lower temperature on the roomside surface of the 80-F glass block.



Rejects hot summer sun—This diagram shows how the 80-F block reflects a major portion of the light from the sun at the critical 45° angle thus reducing brightness and solar heat transmission during hot weather.



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Transmits ground-reflected light— This diagram shows how the 80-F transmits the cool light reflected from the ground. This feature is especially important when the sun is not on the fenestration.

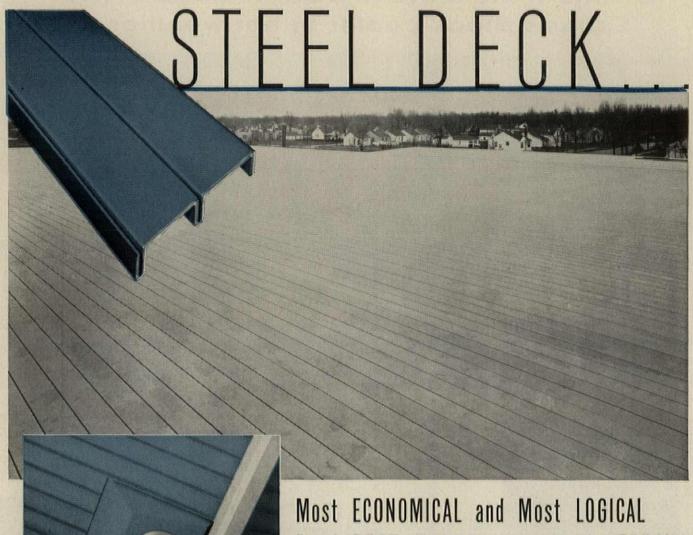
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#### **LETTERS**

Continued from p. 78

keepsie, N.Y., Binghamton, N.Y., Ithaca, N.Y. and to other states.) Your article begins with the quotation of Frank Lloyd Wright's opinion on Torroja's work, and in this connection, it may be of interest to your readers to learn how Frank Lloyd Wright got acquainted with Torroja's work and his outstanding personality. Torroja is an old friend of mine, and I have admired his work as engineer and architect for many years. On one of my frequent visits in Taliesin West [Arizona], I took along Torroja's book describing his work till 1936. Wright, the world's master of modern architecture, was very much impressed. In 1950 Torroja visited Wright in Arizona where this picture of the two great designers was taken.



I do not agree with your statement that the Institute of Professor Torroja shown in your February issue is less notable for its architectural composition than for its engineering. Torroja himself, director of the Institute, assisted by 163 architects, engineers, research and testing experts, is, as are many European engineers of the older generation, also a licensed architect. His architectural and artistic feeling is best expressed in Chapter XVI of his new American book, "Philosophy of Structural Design," entitled The Beauty of Structures [and translated and published with the aid of Engineer Polivka-ED.] of which several paragraphs are quoted below:

"When discussing the beauty of a structure it is difficult to avoid recognizing those errors of design which originate from the partial and distorted vision of the designer. The defects of a structural design generally stem from an incomplete vision of the problem, lack of judgment, or inadequate appreciation of one or several factors. On the other hand, esthetic evaluation of a building is seldom considered in relation to its basic structural design.

"Sometimes this basic structure is visible or constitutes the whole work. In that case it should be esthetically good. In other cases it is hidden. But even then it is seldom that the esthetic value of the whole work is not influenced by the resistant forms of the internal structure. Such is the case

continued on p. 93

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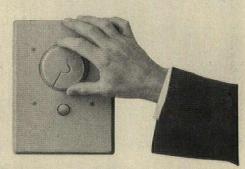




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Before you specify or buy convectors be sure to find out about the new Modine line. For complete details, call the Modine representative listed in the classified section of your phone book or write Modine Manufacturing Co., 1507 DeKoven Ave., Racine, Wis.

30 types • 8000 sizes

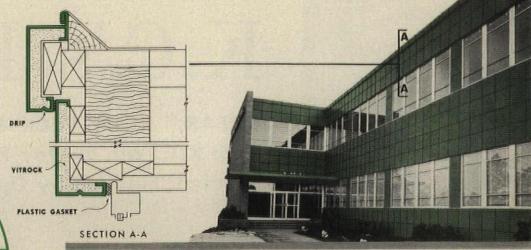
There's a Modine Convector to meet your exact needs: Deluxe, standard and institutional models — free-standing, fully and partially recessed, concealed and wall-hung types with many design variations.

772 CONVECTOR RADIATION

R-1256

At right, Radio-TV Station WBT, Charlotte, North Carolina; Davidson Architectural Porcelain with Vitrock backing used on building facade, coping and canopy. J. N. Pease & Co., Engineers and Architects, Charlotte, North Carolina.





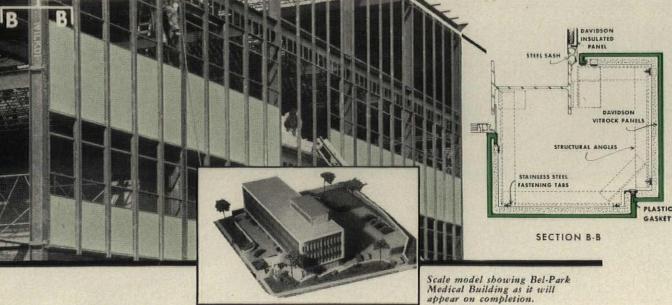
# Selected

for appeal for ecomomy

for durability

These factors—complete freedom of choice in panel shapes, sizes and colors, plus construction speed and economy—are resulting in specification of Davidson Architectural Porcelain for the finest buildings. Whether used for new construction or modernization, this modern building material adapts to any structural system and can be counted on for long-lasting, "new" appearance without maintenance.

Write for Architects Fact File, showing types of panels available and suggested curtain-wall, window-wall and facia applications.



At left, Bel-Park Medical Building, Youngstown, Ohio, now under construction. Davidson Panels are assembled to window frames, then hoisted into place. Approximate time to install complete unit into building structure: two minutes. Architect, P. Arthur D'Orazio, Youngstown, Ohio. Contractor, Emanuel Katzman & Company, Youngstown, Ohio.

Davidson ENAMEL PRODUCTS, INC. - 1105 E. Kibby Street, Lima, Ohio



Kansas City Municipal Stadium
Architect: H. L. Wagner and Associates,
Kansas City, Mo. • Engineer: Victor Mayper,
New York, N. Y. • Consulting Engineer: S.
J. Callahan, Kansas City, Mo. • Contractor:
Webb-Winn-Senter, Kansas City, Mo. (This
is a joint venture between Del E. Webb
Construction Co., Pheonix, Ariz., and WinnSenter Construction Co., Kansas City, Mo.)

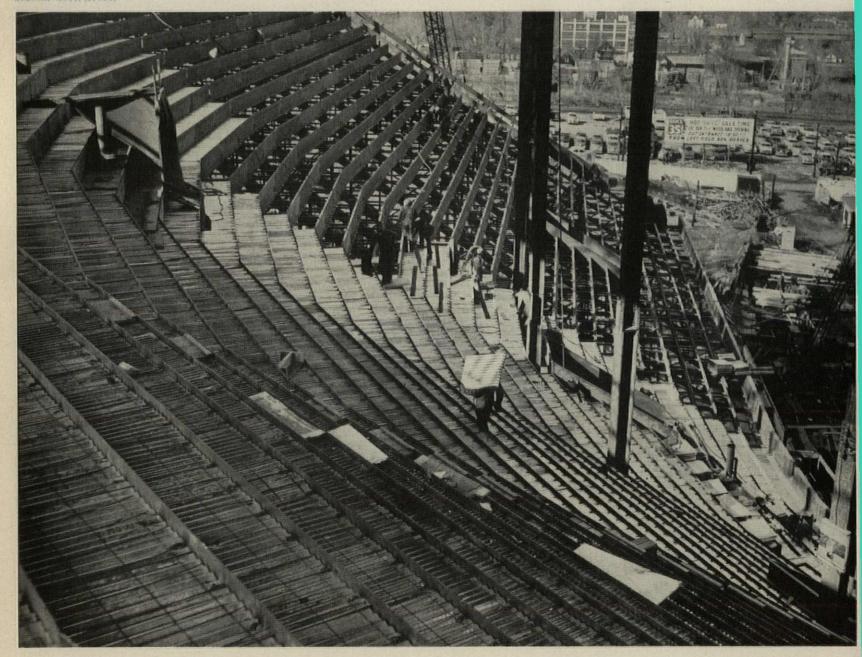
Placing of Corruform precedes concrete placement in partly finished upper deck. Nearly 70,000 sq. ft. of time-saving Corruform sheets were welded to risers to form second-deck floors.

# K.C.'s First Big

COFAR,\* ROOF DECK & CORRUFORM\*
Help K.C. Win 96-Day Race to Rebuild
Baseball Stadium by Opening Day

JOB: Start Jan. 6, 1955, and rush rebuild a 17,000-seat single-deck stadium to a 34,000-seat double-deck stadium meeting American League standards by Opening Day, April 12, 1955—a period of 96 days.

**SOLUTION:** CORRUFORM to form floors between risers and back walls of press boxes; ROOF DECK over office, concourse, press boxes, back-seat row in upper deck; COFAR on ramps and office and concourse floors.



# League Win!



RESULT: "We had to guarantee the American League a stadium that meets Big League specifications and have it ready to play baseball April 12. Thanks to Cofar and Corruform, we met the deadline and stayed within our budget as well."

J. L. Neville, Project Engineer



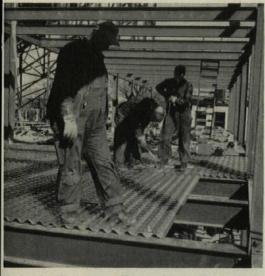
"Each hour was important on this job. We couldn't have done it without Cofar, Roof Deck and Corruform. They're perfect from every angle—speed of construction, strong working platform, money saving. This was the fastest construction pace I've ever seen."

Arthur Row, General Superintendent



"Corruform, Roof Deck and Cofar are the finest products for this type of project. Cofar saved a great deal of time and money by eliminating forms and stripping. Also, Cofar permitted a clear working area below because we did not need temporary supports."

Fred Kuentz, Project Manager



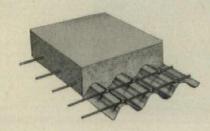
Cofar for Concourse Floors. Webb-Winn-Senter speeded the casting of concrete floors by using Cofar which acts (1) as a deck for workmen, (2) as a form for wet concrete, and (3) as a reinforcing when the slab sets.



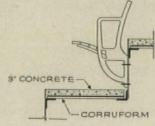
Corruform between Risers. The 100,000 psi steel, pre-sized and stacked, made both concrete base and working platform, kept laying crews well ahead of concreting. Hot-dip galvanized Corruform was vinyl primed for finish paint.



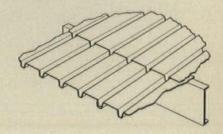
Granco Steel Roof Deck formed concourse roof and decorative curtain wall behind upper-deck rear seats. Wide sheets meant fewer laps, greater roof strength and safety, big time-saving in placing and welding.



**Cofar** is extra-strong, cold-reduced, hot-dip galvanized steel. It makes a tight form for wet concrete, provides full positive reinforcing. Welded transverse wires give full temperature reinforcing; anchor concrete and steel.



Corruform forms tight, solid base for wet concrete, gives a definite saving of this material. Corruform remains in place, eliminates the nearly impossible job of stripping. Mesh laid over high-tensile steel sheets reinforces slabs.



Granco Roof Deck is rotary-press formed steel with baked-on, rust-resistant alkyd finish. Each sheet is shaped for maximum strength and perfect nesting, covers 25 to 35 sq. ft. for fast placement, has 28¾" width to reduce laps.

#### GRANCO STEEL PRODUCTS CO.

A Subsidiary of GRANITE CITY STEEL COMPANY

Main Office: Granite City, Illinois • Distributors in principal cities





Smallest coded station available today. Single-action operation-simple, dependable, foolproof. No glass to break. One pull and release...the warning call is placed! No chance of a non-alarm due to haste or panic.

Edwards Fire Alarm Systems protect many of America's schools, hospitals and modern buildings ...like the U.N., Lever and Chrysler buildings. How about yours? For further information and illustrated bulletin, write Edwards Company, Dept. AF-5, Norwalk, Conn.



#### **New Streamlined** Non-Code Station



Listed by Underwriters' Laboratories

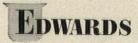
Like the now famous coded station shown on the opposite page, this non-code station has the exclusive Edwards single-action mechanism that eliminates any possibility of non-alarm due to haste or panic. Just one motion actuates the alarm. No key to turn, no door to open before pulling handle. Also available in break-glass Model No. 270. Has tamper-resistant break-glass feature...the glass breaks when the lever is pulled.

Testing and resetting after alarm is easily accomplished with dropfront type of construction.

Station is die-cast in rugged zinc and finished in Fire Alarm Red. Small size and wall-hugging shape makes it suitable for any location. Only 31/8" wide, 45/8" high. Projects only 1" from wall.

Installation is a simple matter. Station mounts on standard square box with plaster cover. For surface mount, special Edwards conduit box No. PP. 27193 is available. Box is cast aluminum finished in red to match the station.

For complete information on Edwards Fire Alarm Systems write for Bulletin FA-or see Sweets Architectural File. Edwards Co., Inc., Norwalk, Conn. In Canada: Edwards of Canada, Ltd., Owen Sound, Ontario.



protects . . everywhere!

#### **LETTERS**

Continued from p. 86

with that most perfect and appealing work of Nature which, in the author's opinion at least, is unquestionably the feminine form, whose outer beauty is greatly influenced by the perfection of the skeleton, a structure unattractive in detail but enhancing the poetry of the whole by its own indirect means of expressiveness. . . . 'Beauty is the splendor of truth,' a great philosopher said, and many infer from this that the primary essence of beauty is the perfect correlation between the real nature and the apparent form of the work. The translation of spiritual concepts into material works is always difficult and risky. . . .

"It can be truly said that for the first time in the history of art, the contemporary structure has acquired an independent personality, so that its own intimate esthetic quality can be appreciated. Thus, we may legitimately refer to a structural art. . We can almost justify it in terms of the technical genius that permeates our present social environment. This thirst for functional expression does not refer only to statical and load-bearing function. In architecture it is desired that spaces and volumes shall express, or at least correspond to, the true purpose of each part, or to the aggregate of all parts. It is desired that a comprehensive glance at the exterior shall indicate what is contained within, even the purpose of the principal functional characteristic. . . . The fact remains that in our time this correlation between form and function is considered a virtue, while other symbolic ambitions are cut short. It is now considered that the structure should be beautiful in itself, without needing additions or trimmings. This cannot be justified merely on the ground of economy, although this factor is now more important than ever. At most it is part of an intimate desire to attain a complete solution to the total esthetic problem. . . . "

J. J. POLIVKA

Consulting engineer and architect Department of art and architecture Stanford University Stanford, Calif.

#### DETROIT REDEVELOPMENT

Congratulations on the article "Redevelopment f.o.b. Detroit" (AF, Mar. '55). The story it tells is an important one, heartening to anyone concerned with the welfare of the central core areas of our cities and with the adverse effects of slums upon them.

Similarly impressive efforts at self-rejuvenation just as spontaneous as those in Detroit are being made by other American cities, and I hope that you will continue to bring them to the attention of your readers.

> WILLIAM H. DOUGHTY Aldis & Co., building management Chicago, Ill.

Forum:

I have followed the replanning proposals for the Gratiot area from their inception continued on p. 96 CONTRACT FURNISHINGS vista. casual californian \*high-styled and rugged ··· at low first cost! 100 pieces for seating bedroom storage occasional dining

\*Insist on selective furniture for institutional, commercial or residential use • Easy to maintain, low in cost, far ahead in construction • Beautiful woods and metal, with plastic or natural tops.

and

bar

Write for special Contract Catalog

Vista Furniture Company • Dept. F-2 1040 North Olive . Anaheim, Calif. KEystone 5-2231

## In the new Texas Children's Hospital . . .

#### Pittsburgh Glass was utilized for maximum visual freedom

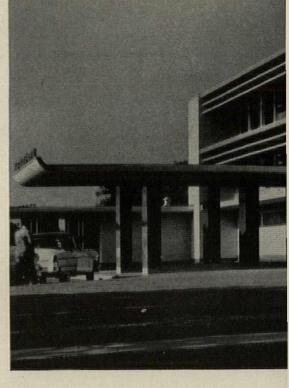


IN THE MAIN LOBBY, large areas of Pittsburgh Plate Glass help to achieve a cheerful, attractive atmosphere. The two doors and two sidelights, which make up the main entrance, are Herculite® Tempered Plate Glass - a glass that is noteworthy for its characteristics of sturdiness, strength, transparency, and endurance. Herculite has approximately four times the strength of normal plate glass of the same thickness.

LARGE PANELS of Pittsburgh Plate Glass are used to enclose the snack bar and gift shop located near the lobby on the ground floor. All the mirrors in this hospital building are made from Pittsburgh Polished Plate Glass.



THIS MODERN HOSPITAL for child care reflects in its physical arrangement the best in functional design. A simple rectangle in shape, five stories high, this building utilizes broad expanses of Pittsburgh Glass for added beauty and practicality. The use of Pitts-burgh's Solex® Heat-Absorbing, Glare-Reducing Glass on the third and fourth floors of all patients' rooms is a distinct contribution to their comfort. Solex keeps rooms cooler, protects them from the intense glare from direct sunlight. Architect: Milton Foy Martin, A.I.A., Houston, Texas.



Design it better with Pittsburgh



Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 6a, 15d, 20, 12e, 15a.

Glass P



COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

# For servicing building exteriors, THE ECONOMY DESCENDER

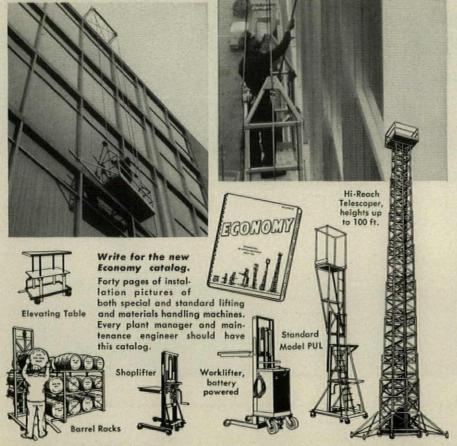
The "HUMAN FLY"
Machine

Absolute safety is the first consideration in engineering this service machine. And the complete success of the equipment on this installation is evidence of Economy engineers "know-how" acquired by over 50 years of designing service lifters and special materials handling machines.

This Descender has a capacity of 500 lbs, and was specially designed for window washing service on this five story modern building. It is electrically operated by pushbuttons on the platform for up and down and horizontal movement. When not in use it is moved back out of sight by means of a turn table,

If you have an overhead service problem, or need a special material handling machine, Economy can build it. And you can be sure of complete satisfaction in performance.

There is an Economy representative near you who can give personal engineering service on your problem and make recommendations with estimates.



ECONOMY ENGINEERING CO., 4514 West Lake Street, Chicago 24, Illinois

New York Office, 342 Madison Ave., New York 17, N. Y.

#### **LETTERS**

Continued from p. 93

with a great deal of interest. While some of the early plans for the rebuilding of the area, prepared by the Detroit City Planning Commission prior to the passage of the Housing Act of 1949, showed imagination, none of the proposals that it had been my opportunity to study had ever, in my mind, demonstrated the real opportunities and responsibilities inherent in the situation. This new proposal for the first time presents to Detroit plans with both life and vigor commensurate with the design, technical and social opportunities of the site. Of course it should be considered an axiomatic mandate to planners and architects, as well as federal and local financial interests, to rebuild all our cities with skill and imagination. It looks now as though the long delays in coming to a decision as to how the Gratiot area should best be used has been an asset rather than a liability. The earlier approaches which bowed to expediency and compromise have been dropped for something that may well provide an example of slum clearance and urban renewal of which not only the City of Detroit can be proud but the country as well.

It has always been my contention that slum clearance should be more than just that, despite the importance of eradicating intolerable living conditions and all types of urban blight. Too often plans are made for the expensive, time-consuming and complicated processes of urban rebuilding and urban renewal which, upon their completion, repeat with only minor modifications the dull and stupid patterns of past performance. There are as many bad traditions which our people are emulating as there are good ones. For some reason it always seems easier to build on the bad ones. But when our city planners and architects have made a thoughtful, selective choice and have the courage to promote that choice, making use of the best available in ideas as well as methods, I am encouraged to believe that we may well be on our way toward a better rebuilding of our great, but ugly and unlivable, cities.

I like the new Gratiot plan because of its openness, because of its clarity, because of its use of the newer sound traditions of superblock planning for residential areas. I like the human-scale relationships to the diversity of residential types. And being aware of the fixed and unalterable major elements in certain existing street and underground utility and railroad patterns, I like the ability with which the plans have been adapted to these finites.

Considering not only the scale but also the novelty of the new plans, every commendation should be given to the financial interests who have the intelligence and the courage to back them. I sincerely hope that the necessary federal support will also be forthcoming and that the Housing and Home Finance Agency will be able to help move Detroit out of dead center into action again.

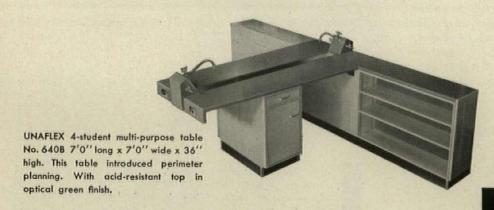
CARL FEISS

Planning and urban renewal constultant Washington, D.C.



# LABORATORY PLANNING BY

Typical "Life-Like" planning of a multi-purpose laboratory, 24'0" by 48'0", executed with exact scale models at Sjöström's Imagineering Department.



JOHN E. SJÖSTRÖM COMPANY, INC.

Makers of

1737 NORTH TENTH STREET, PHILADELPHIA 22, PA.

#### UNAFLEX

OPENS
VISTAS
TO BETTER
LABORATORY
EQUIPMENT

The UNAFLEX "Life-Like" laboratory planning service gives you a perfect picture of how perimeter planning works. A multi-use room is created, offering the school board an excellent investment: a room, no longer confined only to science classes, that can be used every hour of every day. For teachers and students its professional atmosphere for experimentation is ideal, and maximum use is made of natural lighting. During non-experimental classes the lecture area avoids distractions caused by fixtures and instruments. The multipurpose tables themselves have extremely useful and flexible base units, allowing for station issue or for 2 to 4-class individual issue.

Finally, the multi-purpose table has the advantage of easy plumbing accessibility. Initial plumbing installation is greatly simplified, whether the room is new or old, since no floors or walls need to be ripped open.



#### Do glass blocks give a "COOPED-UP" feeling?

Some people are more sensitive to claustrophobia than others. To these folks, a solid panel of glass blocks seems to be a barrier between them and the outside. We'll agree that even the abundant daylight transmitted doesn't quite relieve the situation for these sensitive people. But even for them there is no reason to think that glass blocks give a "cooped-up" feeling. When people want to see out there are three easy solutions:

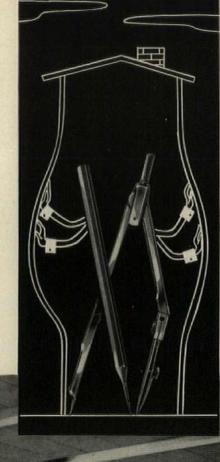
First, and most popular, you can in-

stall clear-glazed vision strips below the glass blocks as shown in the photograph.

Second, you can install glass block ventilator units. Special tinted glass is available for these units (and for vision strips) so that their brightness will match that of the glass block panel.

Third, install some PC Vue Blocks in the block panel. They are made from clear glass, visibility is good, and there are no openings to maintain.

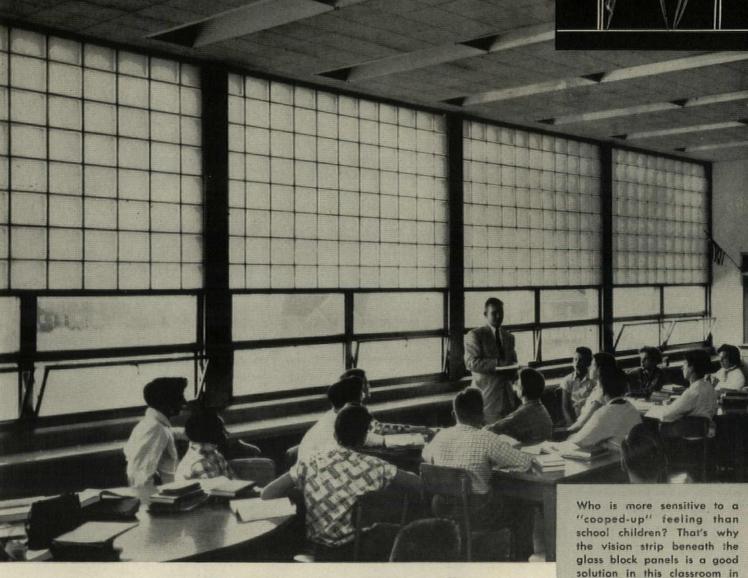
Your PC representative will help you pick the best system.



the Edison Junior High School, West Mifflin Borough, Pennsylvania. Architects: Lamont H.

Button and Paul F. McLean,

A.I.A., Pittsburgh.



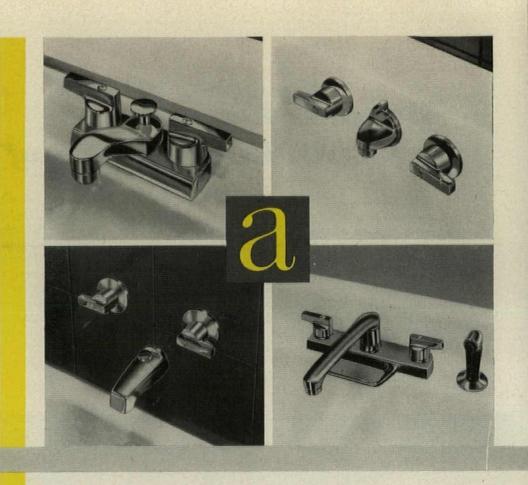
**PC** Glass Blocks

Pittsburgh Corning Corporation, Pittsburgh 22, Pa. · In Canada: 57 Bloor St. W., Toronto, Ontario

ALSO SKYTROL® AND FOAMGLAS®

New Quality Line. Here are smart, new fittings for the bath, lavatory and kitchen . . . in center-set and spread styles. They're designed to complement the modern lines of American-Standard plumbing fixtures, and will give long, dependable service. All Quality Line fittings are finished in gleaming Chromard for permanent beauty and easy cleaning.

New Monogram Fittings. These luxurious fittings have a rich satin chrome finish, and can be personalized with the owner's initials. Distinctive Monogram fittings are available with clear or colored non-slip handles to blend with the bathroom color scheme.

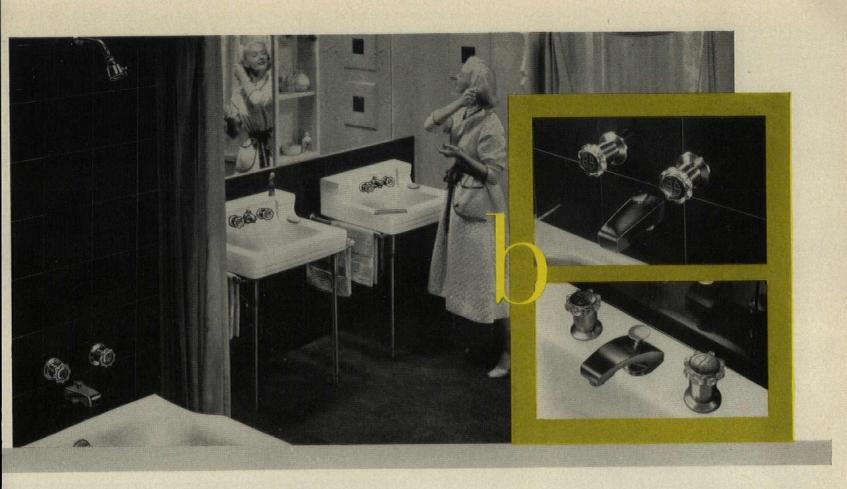


## Picture studies in function and

New Bathroom Fixture. The
Dentaledge is a useful and sanitary addition to the modern bath
. . . it helps relieve bathroom
"rush-hour traffic"! This 14" x 14"
dental lavatory features a flushing
rim with a back-flow preventer.
Styled to harmonize with other
American-Standard fixtures, it is
made of genuine vitreous china.

New G-6 and G-4. They're new American-Standard gas-fired boilers that can be used with either hot water or steam systems. These boilers are compact and streamlined . . . drafthood and manifold are completely enclosed in a steel jacket. Service is simple because big, easy-to-remove access doors let maintenance men do their job quickly and thoroughly. These efficient boilers have A.G.A. approval. The G-6 boiler can be used singly or in battery to handle any commercial or industrial heating job. This compact boiler has a solid, one-piece cast iron base for reduced installation costs. The G-4 boiler can be used in large homes and small industrial and commercial buildings. Designed for quick, easy assembly.





# design by American-Standard

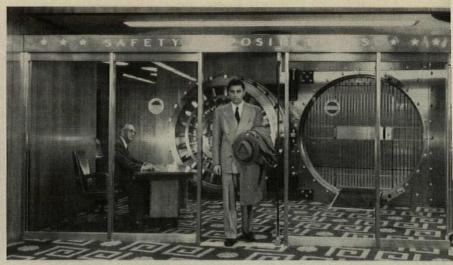




BRIGHT STAINLESS STEEL AND GLASS help to keep the feeling of open space without actually wasting any. Stainless Steel revolving door can take banging of customers' feet. Perspiration from thousands of hands cannot affect it. Note the stainless steel sheathed supporting column beyond the door.



THIS CIRCULAR STAIRWAY leads from the banking floor to the vault room in the first basement floor. Stainless Steel handrails curve on changing radii to accent graceful curve of stair. Guard rail at top consists of stainless frames with glass screens to preserve appearance of openness and space.

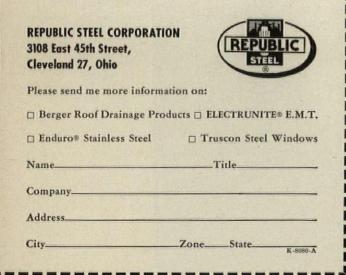


FEELING OF SPACIOUSNESS is achieved by good use of stainless steel and glass at the vault entrance. High strength-to-weight ratio of Enduro Stainless Steel permits architects to use it in thinner sections, eliminating unnecessary bulk which would mar decorative effects, and cut down on glass areas.

## How to give a

- ...give it beauty that's modern
- ...beauty that's easy to maintain
- ...give it

**ENDURO STAINLESS STEEL** 





STAINLESS STEEL BECOMES A DECORATIVE TOOL in the reception room, Home Federal Savings and Loan Association. Doors and trim are stainless. The texture effect on the door panels is the result of turning the direction of the polish lines on the middle panels 90 degrees to those on top and bottom panels.



HERE'S A NEW IDEA: combine the mailbox and building directory. Then make both of them out of Republic Enduro Stainless Steel and you have improved design in a limited lobby space. Easy to maintain, too.



AFTER BANKING HOURS, this "snorkel" permits the teller, safely seated in the basement vault room, to receive payments or deposits from customers outside of the bank. Stainless Steel is used for the work surface, as well as all other metal parts.



"HOLD-UP PROOF" is this after-hours banking "snorkel." This is the view from the customer side. There is an elevating device, periscope and telephone connection. All bright metal is stainless steel.

## bank its money's worth

Architect William Sevic of Chicago did just that for Home Federal Savings and Loan Association of Chicago. He used it in everything from the vaults and radiator covers to the stair rails. He knew that Enduro Stainless Steel would last. That it fitted in with good functional design. And eliminated the need for constant polishing.

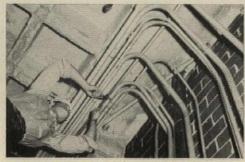
Although it has been with us for more than 25

years, architects are still discovering more and more uses for Republic Enduro Stainless Steel. Like hardware. Downspouts and gutters. Decorative ornaments.

And architects are finding that their clients like Enduro Stainless Steel. It's beautiful. And it will stay that way for years. When you specify it, your reputation is not only safe—it's enhanced. Get all the facts by filling out the coupon below.

#### REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products



ELECTRICAL WIRING IS SAFE AND ECONOMICAL when it's in Republic "Inch-Marked®" Electrical Metallic Tubing. You get the mechanical and electrical protection inherent in a steel conduit system. Wiring circuits are protected against fire, moisture and mechanical injury. Corrosion resistance is unbroken from end to end, since there are no threads to cut.



LOTS OF LIGHT, LOTS OF AIR, LOW MAINTENANCE can be designed into buildings like this public library when you specify Truscon Steel windows. Made by Republic's Truscon Steel Division, these windows operate easily. Ventilators allow a precisely controlled flow of fresh air. Window shown is the Truscon Intermediate Projected steel window with sill vent.



GIVE YOUR CLIENT TROUBLE-FREE ROOF DRAINAGE with gutters and downspouts of Republic Enduro Stainless Steel. Fabricated by Republic's Berger Division and numerous independent manufacturers, these products will last the lifetime of the building, under normal conditions. No rusting, no tarnishing. No bleeding or discoloring paint. They are stronger than ordinary steel, withstand wide temperature changes.

The automatic entrance to the CENTRAL-PENN NATIONAL BANK, PHILADELPHIA, PA. ARCHITECT: Robert Montgomery Brown, 1728 Spruce Street, Philadelphia 3, Pennsylvania CONTRACTOR: Turner Construction Co., 1500 Walnut Street, Philadelphia 2, Pennsylvania

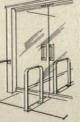


# Courtesy COMING ... and GOING - automatically!

The Central-Penn National Bank, and other leading banks across the nation are modernizing . . . expanding . . . investing in new services, new conveniences designed to please patrons and build business.

Here, Stanley Magic Door Controls are providing a modern, automatic courtesy to customers — both coming and going. These automatic opening and closing entrance doors serve in-and-out traffic — whether light or heavy — with ease and efficiency. When an approaching patron actuates the door control by walking through a photoelectric Stanley Magic Eye\* beam or by stepping on a Stanley Magic Carpet† (above) — the door opens wide. It remains open until the patron passes through. Then it closes quickly . . . quietly . . . automatically.

You'll find Stanley Magic Door Controls a courteous efficient "doorman on duty" inviting the public into leading buildings everywhere. Ask the Stanley Representative in to review with you your clients' door-opening problems . . . no obligation. Mail the Coupon today!



the public appreciates the convenience of traffic-directing Stanley Guide Rails at a building's entrance. Used in conjunction with Stanley Magic Door Controls (see photo above), these handsome, functional rails are styled to harmonize with modern exteriors. The cost . . . like the design . . . is attractive.

\*U.S. PAT. NO. 2,173,455 TPATENTED IN U.S.A. AND CANADA

CTANLEY'	THE STANLEY WORKS, MAGIC DOOR DIVISION 095-M Lake St., New Britain, Connecticut Gentlemen:  Please send me complete information about Magic Door Controls.  Please send me the name of the Stanley Representa-
ESTANLEY Magic Door	Name Position Firm
IN PRINCIPAL CONTROLS	Address

STANLEY TOOLS . STANLEY HARDWARE . STANLEY ELECTRIC TOOLS . STANLEY STEEL STRAPPING . STANLEY STEEL

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the magazine of building

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Modern bank shows how you can provide

# Ideal indoor weather for the most modern kind of building

Why Honeywell Customized Temperature Control is a "must" in modern buildings

THE need for a truly modern control system is well illustrated by the New York City Fifth Ave. branch of the Manufacturers Trust Company.

The building was designed with drama in mind, is open and inviting to the public—and is a highly efficient work place for the bank's staff.

Important in making a building attractive and efficient today is ideal Indoor Weather—the kind furnished by Honeywell Customized Temperature Control in the Manufacturers Trust Company's Fifth Ave. branch, and in many other buildings across the country as well.

Strategically placed Honeywell thermostats (see floor plan) com-

pensate for every possible occupancy, exposure and use comfort factor, making this new branch bank one of the world's most comfortable places to work and to do business in.

The techniques used in solving these comfort problems can help you provide the Indoor Weather required for your clients' facilities—for a Honeywell Customized Temperature Control installation is designed to fit the needs of the building and its occupants. This applies not only to heating and cooling, ventilating and humidity control, but to industrial control as well.

Only Honeywell can provide true "customized" control. Because only Honeywell manufactures all three types of controls—electronic, pneumatic and electric.

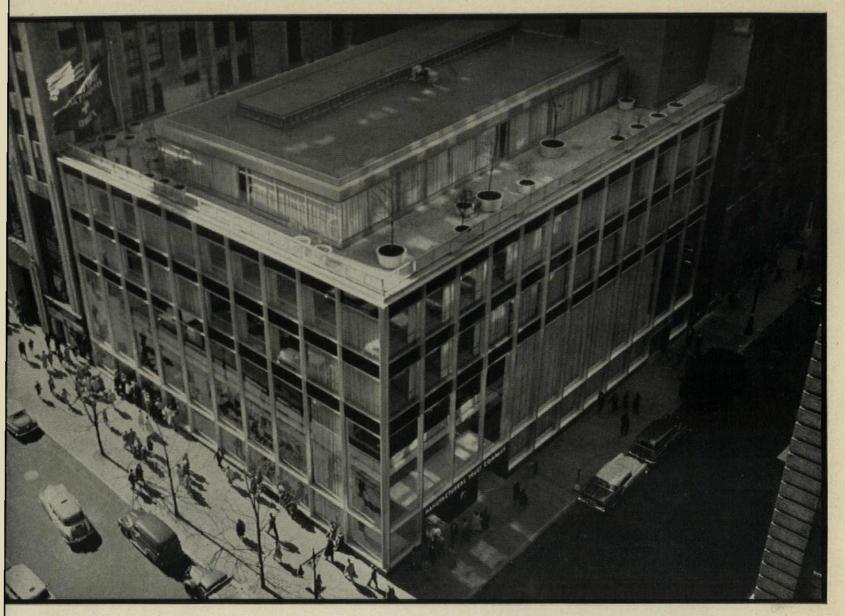


A separate thermostat system was installed in the conference room above to provide comfort no matter what the weather—or size of the gathering. The sensitive Honeywell thermostat calls for just the right amount of heating, cooling or ventilating—according to the season and size of the meeting. Thus Honeywell Customized Temperature Control meets the varying needs, compensating for occupancy as well as weather.

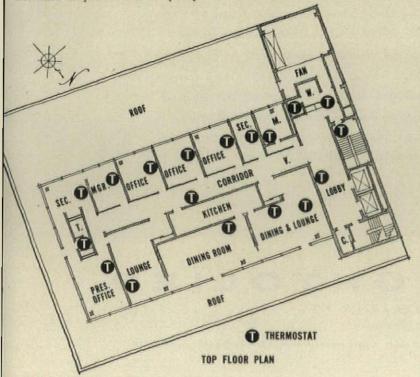


Strategically located thermostats in large banking areas such as the one shown provide comfort at all times. They do this by compensating for exposure and occupancy—varying crowds at different times of the day. In addition, comfort is maintained in private offices (see floor plan) by installation of a thermostat in each office. This meets the needs of individual offices—and of the individuals who occupy them.

Photos: Ezra Stoller



Large glass areas create an inviting open took. But they also admit a great amount of solar heat, and transmit winter chill. This calls for Honeywell Customized Temperature Control—if comfort is to be assured.



Skidmore, Owings & Merrill, architects. Weiskopf & Pickworth, structural engineers. Syska & Hennessy Inc., mechanical & electrical engineers. George A. Fuller Co., builders.

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in new or existing buildings—of any size—
specify Honeywell Customized Temperature Control

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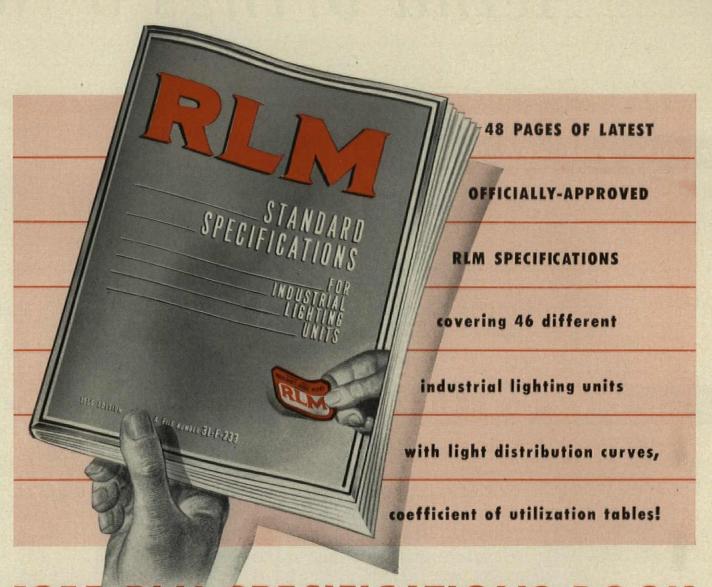
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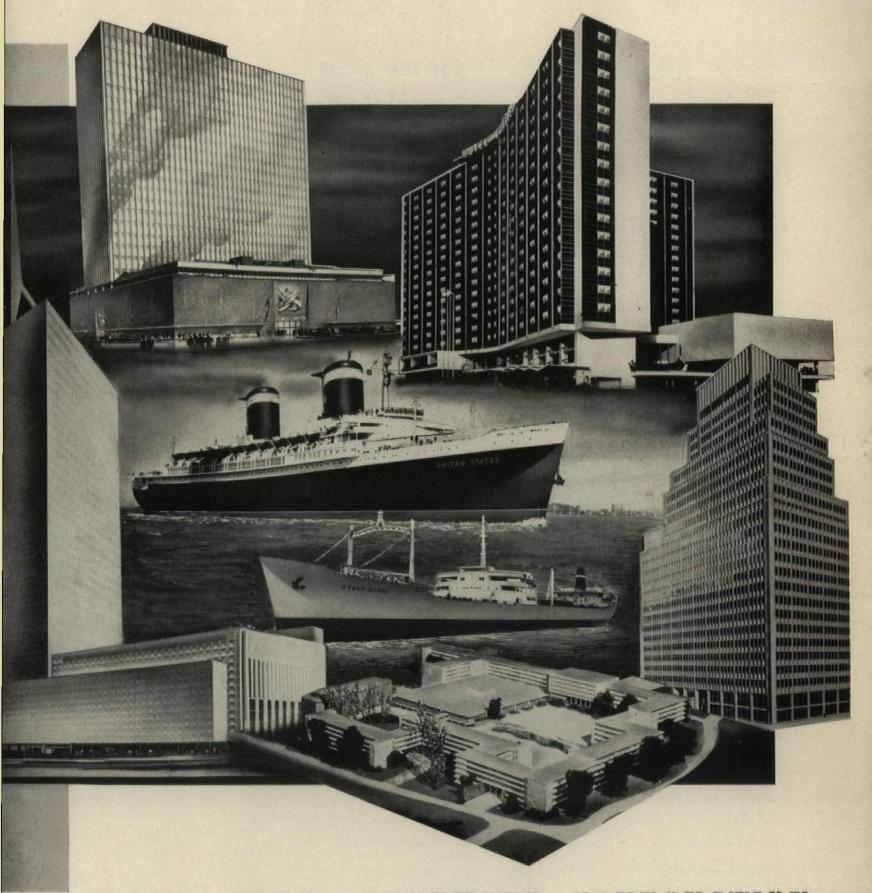
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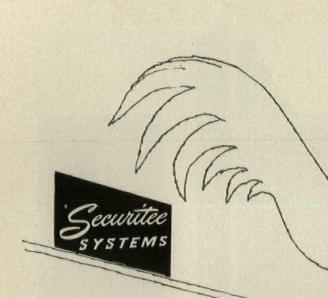
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‡Licensed under DuPont Patent

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# architectural FORUM

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Men behind the blueprints

in this month's FORUM



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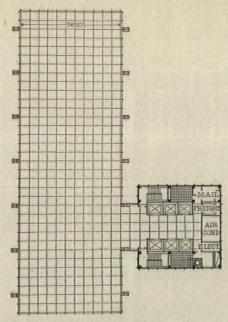


CLIENT: As president of the Corning Glass Works, William C. Decker is one of modern architecture's most enthusiastic patrons-a bright fact reflected in the series of glassy display buildings which Architects Harrison & Abramovitz produced for the Glass Center at Corning, N.Y. in 1951 (AF, Aug. '51) and to which they are now adding an administrative and research wing (p. 124). The first buildings were designed to enchant the public; the new ones, says President Decker, are designed "to strengthen our position of leadership in glass research." Corning's leadership already extends from such utilitarian fields as glass block and thermometers to the finer arts of glass, in which its subsidiary, Steuben, marries the ancient and beautiful craftsmanship of glass blowers with the talents of contemporary artists.

ARCHITECT: Pietro Belluschi, dean of architecture and planning at MIT and designer of many of the Northwest's outstanding buildings, is disheartened by the "squalid refuse heap of ugliness" which our society has contributed to the visual world. He urges his fellow architects to recognize the public's growing respect for visual serenity, order and harmony and to develop modern forms which will measure up to history's greatest architectural accomplishments (p. 162).

BUILDER: George Nakashima, usually remembered as a builder or a designer, is actually the client in the latest addition to his group of buildings near New Hope, Pa. (p. 150). The famous woodworker, who started as an architect, has always before put together his own buildings in his unique idiom, ancestral Japanese joining executed with the aid of modern power tools. But for this building he subcontracted the carpentry—because he was busy filling orders for his renowned furniture and wanted to prove that his designs are not wholly dependent on personal execution.

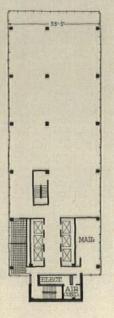




Inland plan gains 10,000 sq. ft. of clear space on each floor with columns, services outside.



Lever House (above, plan below) has services at end, 6,000 sq. ft. with inside columns and stair.



FIFTEEN BUILDINGS toward a new community are described in this issue of FORUM. Typical in purpose, they excel in quality. Three are "head-quarters" buildings—for a steel company, an embassy, a glass company. Three are typical community buildings—hospital, store, school. Three are examples of conflicting modern styles: classicism, romanticism, "new brutalism." The 15 buildings include museum and showroom, newspaper plant and swimming pool, even an incinerator—an outline of what imaginative building can do for common purposes. We open with . . .

# 19 OFFICE FLOORS WITHOUT COLUMNS

Inland Steel's new headquarters will put its columns outside its walls, its utilities in a separate tower

Chicago, which brought the steel frame and the elevator to their earliest full development, will soon have a new and far bolder expression of both: a transparent steel skeleton with no interior columns, the longest clear spans of any tall building ever built, with elevators and other services removed and articulated as a separate, windowless tower. Such is Inland Steel's new headquarters, being designed by Architects Skidmore, Owings & Merrill for construction at the heart of the Loop.

In general appearance, the 19-story Inland building, like some other outstanding new office and apartment towers, is to be a precise, vertical steel cage enclosed in glass. But, unlike all the others, its weight will rest entirely on its big exterior columns, and the architects are emphasizing this point by pulling the columns completely out in front of the curtain wall, where they stand in deep relief as visible means of support for the clear-span floors (and leave these floors unobstructed for greater freedom of use).

In function, of course, Inland bears a fairly close family resemblance to New York's Lever House, also designed by SOM to house a particular company, particularly well, while suggesting the nature of its particular product. A Lever-shaped tower turned inside out, it shows off steel: the strength of long girders, the sculptural possibilities of columns, the luster and durability of sheet. It will be a "miniature" skyscraper of roughly the same size and cost: 19 stories vs. 22 for Lever (excluding mechanical floors), 3.8 million gross cu. ft. vs. 4 million, construction cost \$6 million. A typical office floor will have 10,000 net sq. ft. of completely clear, flexible space, none of it more than 28' from a window, against Lever's 6,000 net sq. ft. within 26' of the windows but interrupted by a row of interior columns and an inside stairwell. SOM figures Inland's floor space will be "17% more efficient than average."

Like Lever, Inland could have saved itself some money if it had decided to build a common, ordinary building in a less-expensive location. This is shown in the following preliminary studies of the 23,040 sq. ft. corner lot by SOM and Chicago Realtors Draper & Kramer (zoning limits building cube to 144 times lot area, in this case 3,317,760 cu. ft. or about 255,000 sq. ft. of floor space):

	INTERIOR CORE	EXTERIOR CORE	DIFFERENTIAL
Stories	15	18	
Typical floor	90' x 180'	60' x 180'	<b>在基本的基本的基本的</b>
Interior columns	2 rows, 30' o.c.	none	
Gross area	251,250 sq. ft.	246,636 sq. ft.	
Net area	211,500 sq. ft.	194,400 sq. ft.	
Mechanical space	17,200 sq. ft.	14,400 sq. ft.	
Total skin area	111,930 sq. ft.	145,314 sq. ft.	+33,384 sq. ft.
Structural steel	2,815 tons	4,066 tons	+1,251 tons
Air conditioning	1,050 tons	936 tons	—114 tons

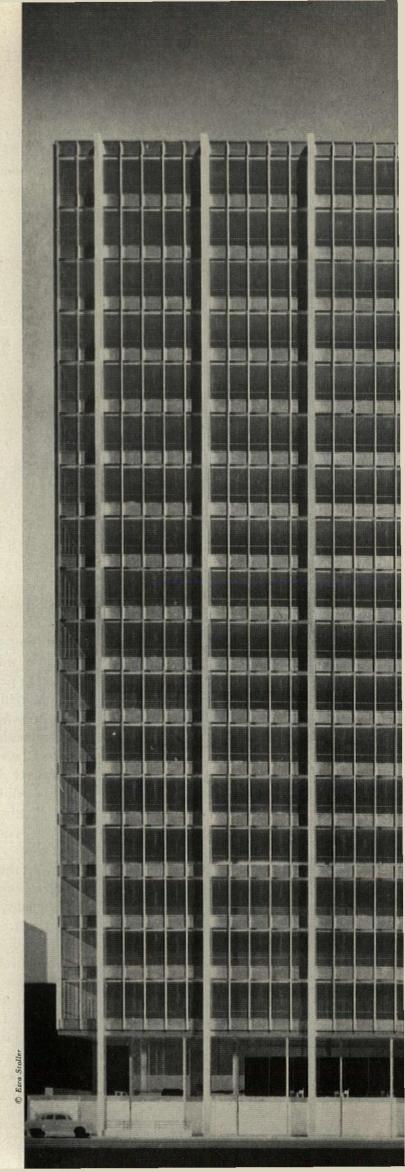
Reinforced concrete construction with more closely spaced columns, conventional equipment and less-expensive finishes would have saved even more. But, as the building committee formally decided, "the difference in investment between an exceptional building and an adequate commercial building is not sufficient, when considered over the useful life of the structure, to warrant building anything but an exceptional type, embodying architectural and engineering interest that would provide a unique institutional identification for the company over an extended period of years."

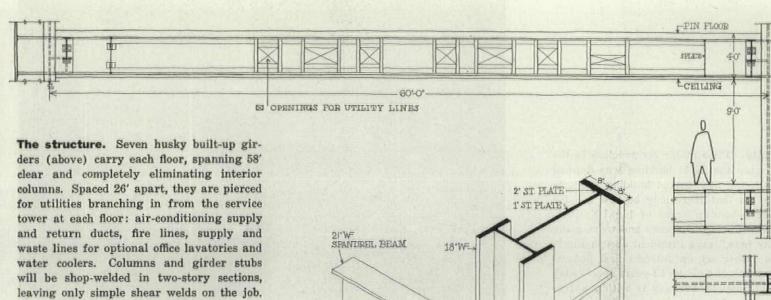
Initially, Inland will move into the top seven floors, with executive offices and cafeteria on the top two. (Being the landlord, it can always expand downward.) Its de luxe space, which sets a new standard for Chicago and most of the US as well, should certainly pay off in increased efficiency and higher morale for its own staff of 500 and justify higher rentals from its tenants. Complete flexibility of floor arrangement should give it a far longer economic life than most office buildings, and good materials and detailing should extend its physical life.

West face shows three planes of wall surface: exposed vertical ribs, lattice pattern of steel mullions, and behind these floor-to-ceiling glass and shallow steel spandrels at floor edges. Ground-floor wall will be either granite, to enclose garage, or glass for noncommercial tenancy.

OWNER: Inland Steel Co.

ARCHITECTS & ENGINEERS: Skidmore, Owings & Merrill

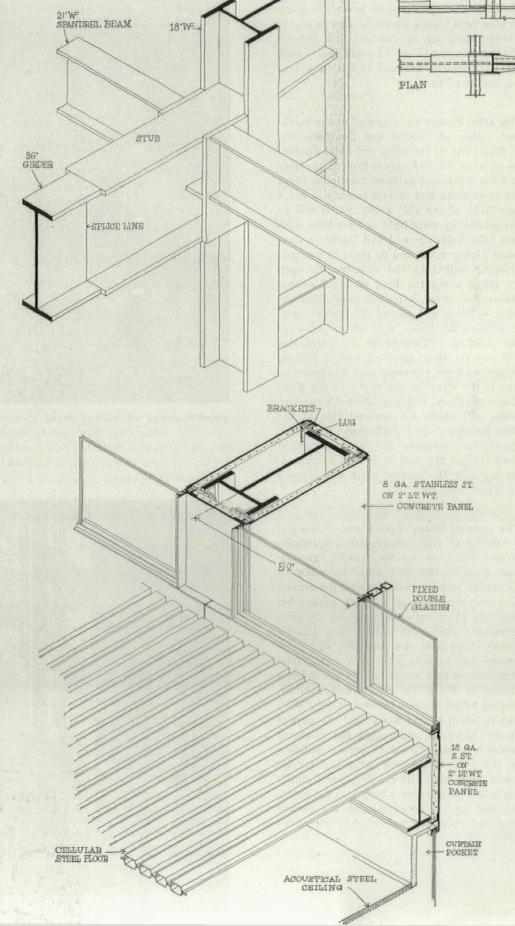




The skin. One of the lightest, thinnest curtain walls ever used will enclose the building. Fixed heat-absorbent double glazing extends from above the hung ceiling, where it forms a pocket for shades and curtains, down to a low 3" sill, with a guard rail part way up for protection. Shallow 2'-8" x 5'-2" spandrels, prefabricated of flat sheets of 18-ga. stainless steel bonded with mastic to 2" of lightweight concrete, will weigh only 25 lb. per sq. ft., compared with 40 lb. and more for other new buildings with high window sills and heavy masonry backup. Inland's lighter curtain has a four-hour fire rating, a U factor of 0.4, will require about 200 less tons of structural steel to hold it up, partially offsetting the greater total tonnage needed for clear floor spans. Columns will be sheathed with 13'high precast panels of heavier 8-ga. stainless, again bonded to 2" of concrete, and the voids filled with lightweight concrete as added insurance of a tight bond between each column and its skin. The architects are confident that this armor plate, bedded in flexible mastic and separated by expansion joints, will not ripple like the lighter stainless on other, earlier installations.

All exterior sheet will be durable nickelchrome stainless, 302 series; the service tower will be visually subdued by using a duller brushed finish. Stainless steel window mullions are channeled to guide a window-washing unit up and down the glassand-stainless sides.

The utilities. Hung acoustical steel ceilings will incorporate modular 5' x 2' perforated pans as supply and exhaust grilles, 5' x 1' lighting fixtures that will maintain a high light level of 70 foot-candles. Inland's own cellular steel floor will be used for its light weight, speed of construction and flexibility of wiring, and full-scale model tests are now under way to determine whether or not it can be economically used as a radiant element for warm and cool air distribution as well. Interior partitions, also of steel, will be arranged on the building's 5'-2" module.

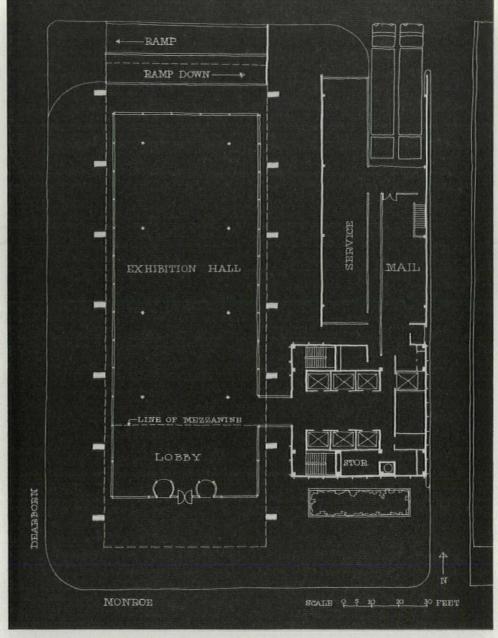


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The city. First major construction in the Loop since the Field building was finished in 1934, the new Inland building supports the notion that there may be new life for the old downtown areas of big US cities. "We're a Chicago company and we're going to stay here," says President Joseph Block, whose father set up Inland's first general offices south of Chicago 62 years ago. Today 60% of Inland's business is within a 100-mi. radius of the city.

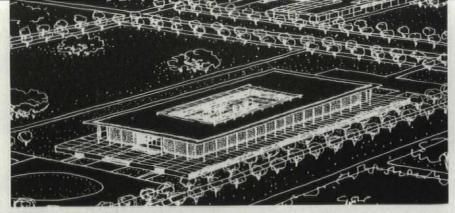
The site. Strategically located at the northeast corner of Monroe and Dearborn Sts. in the center of the office and hotel district, the building will be handy to two subway lines and the south side railroad terminals. Since the office stack and service tower will cover only 57% of the 120' x 192' lot, it will be surrounded by more light and air than most new office buildings and will therefore command higher rents and do more to upgrade property values in the vicinity. To open up offices along the back of the building, the service tower is pulled away from the main building and moved off center where it screens the blank wall of an adjacent tall building. (Tenants at the north end will pay for their openness with a slightly longer walk to elevators and washrooms.) Across the street to the west, the big First National Bank building, Inland's present home, will shade the exposed side of the office building from hot afternoon sun. And, the 4'-deep columns will act as vertical shades when the sun is in the southwest, leaving only the narrow south end exposed to direct sunlight.

The ground floor. Like Lever House and a handful of other distinguished buildings, Inland will pass up the possible groundfloor store rentals that could help pay off its higher building cost. At first the ground floor was conceived as a 50-car garage behind the glass-walled lobby, with an open mezzanine above for office space (model, right). Now there is a possibility of a prize ground-floor tenant: a nonprofit commercial organization that would use the ground and mezzanine floors for offices and exhibits, lending added prestige to the building. With this in mind, Inland has placed the garage in the basement and moved the displaced rooms to a new two-story service building in the rear, connecting with the service tower (plot plan above). This small building will also serve as a backdrop for planting and cut out views through the ground floor and mezzanine to unsightly alleys behind.

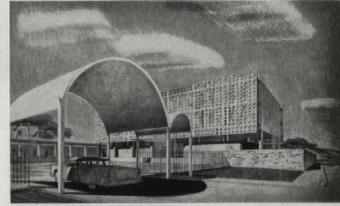


Spaciousness at street level is gained by cantilevering office floors out to building line at south end, recessing first two floors behind columns along west side. Model is by Theodore Conrad.



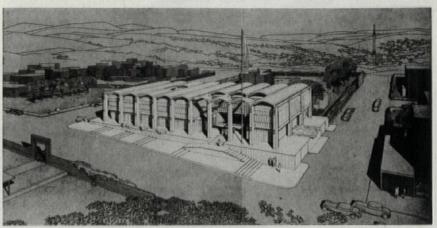


INDIA-proposed New Delhi embassy, Edward D. Stone, architect



MOROCCO-Tangiers embassy, Hugh Stubbins, architect

JORDAN-proposed Amman embassy, Paul Rudolph, architect



#### **US STATE DEPARTMENT OVERSEAS**

The buildings on this page exemplify a fascinating new trend in US architecture. Projected for US embassy and consular use, they show fresh design, befitting a progressive US, adapted without compromise to the traditional cultures of the friendly countries where they will stand. This is diplomacy translated into architecture, architecture into diplomacy. And the best of the designs are tops in the US architectural output of the year.

Not all those shown are certain to be built but bids are about to be taken on one, and two others are in working drawings.

The State Dept. was first pulled out of bureaucratic stodginess in building when independent architects were employed under former Director Leland W. King in 1952 (AF, March '53). To forefend irresponsible criticism the FBO, under its present Director William P. Hughes and Technical Director Henry Lawrence, appointed a mature architectural advisory committee (Colonel Harry A. McBride, then 66, formerly of National Gallery of Art; also Ralph Walker, 64, Henry R. Shepley, 66, Dean Pietro Belluschi, 54).

Although the complete experience under the new phase is not yet in, Forum will examine designs which the editors most admire, one by one. Thus for example the New Delhi embassy project by the New York AIA's gold medalist Edward D. Stone has not yet been officially approved, but Stone calls it "the best thing I have ever done." For the consulate group by Minoru Yamasaki, of Leinweber, Yamasaki & Hellmuth, turn the page.

UNDER CONSTRUCTION:

Honduras, office bldg., res.—Michael Hare Hong Kong, office bldg—Wurster, Bernardi & Emmons Indonesia, office bldg.—Raymond & Rado

ABOUT TO TAKE BIDS

Japan, Kobe, office bldg. & hsg.—Leinweber, Yamasaki & Hellmuth Philippines, Manila, staff hsg., Gardner Dailey

IN ADVANCED WORKING DRAWINGS:

Belgian Congo, Leopoldsville

—Weed, Russell & Johnson

Jordan, Amman, office bldg.—Paul Rudolph

Morocco, Tangiers, office bldg.—Hugh Stubbins Nigeria, Largos, office bldg.

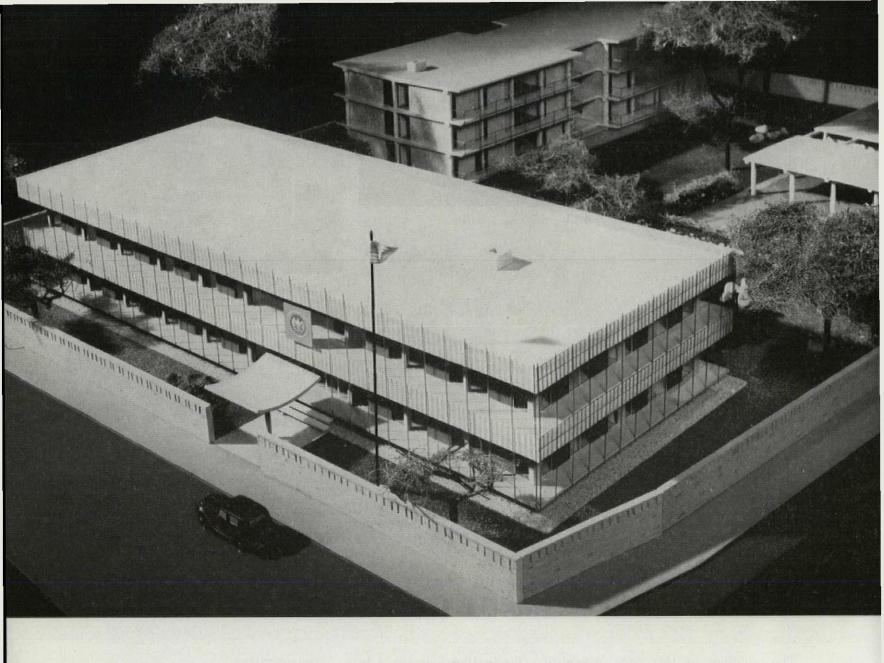
—Weed, Russell & Johnson Paraguay, Asuncion, office bldg.

-Keyes, Smith & Satterlee Thailand, Bangkok

—local arch.'s: Christiani & Nielson
 Trinidad—local arch.'s: Menze & Moore
 West Africa, Dakar, office bldg., hsg.
 —Moore & Hutchins

PROPOSED 1956 PROGRAM (subject to approval)
Austria, Vienna—Henry Hill
Great Britain, London—not announced
Haiti, Port-au-Prince—Don Hatch
India, New Delhi, office bldg.—Edward D. Stone
Iraq, Baghdad, office bldg.—not announced
Ireland, Dublin, office bldg.—not announced
Japan, Nagoya, office bldg.—not announced
Korea, Seoul—Ernest J. Kump
Norway, Oslo—Saarinen Associates
Pakistan, Karachi, office bldg.—Neutra & Alexander

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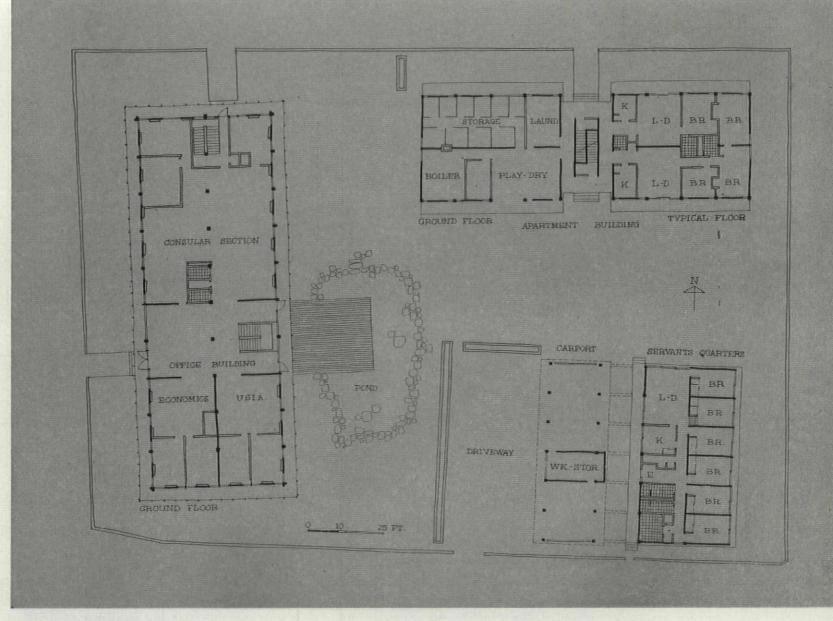


## US CONSULATE FOR KOBE, JAPAN

In downtown Kobe, most buildings are closely crowded together, occupying 100% of their lots, much like New York City buildings. But the Kobe headquarters to be built for the US Consulate General staff will stand in impressive contrast; space will be saved on the lot for a traditional Japanese garden to be designed by a local landscape architect, indicating quietly that not all the US roots in Japan are commercial, also that the US respects the wonderful building culture of Japan.

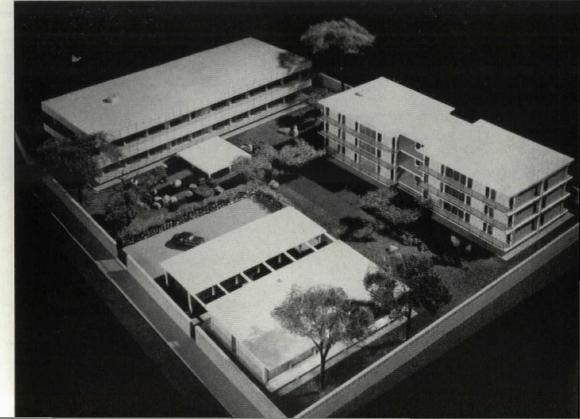
True, there will be a wall around the pleasant compound of offices, apartments, servants' quarters and carports which Detroiter Minoru Yamasaki, of Hellmuth, Yamasaki & Leinweber, has designed for the land of his ancestors. But the wall is not unusual in Japan. It was a choice between that or putting up grilles over windows and rolling steel shutters over doors for protection from agile second-story men. "Disliking the idea of barricading windows, I chose the wall," says Yamasaki. It permitted him to design an office building of considerable delicacy, surrounded by a light grille of bronze with panels of shojilike plastic shading the glass walls.

The architect also followed the tradition which lifts the usual Japanese building on a platform about 2' off the ground with a wooden porch all around. The new consulate's platform will be of cantilevered concrete, not wood, but it will serve the same purpose, protecting the first floor from the damage of Kobe's frequent flood waters.

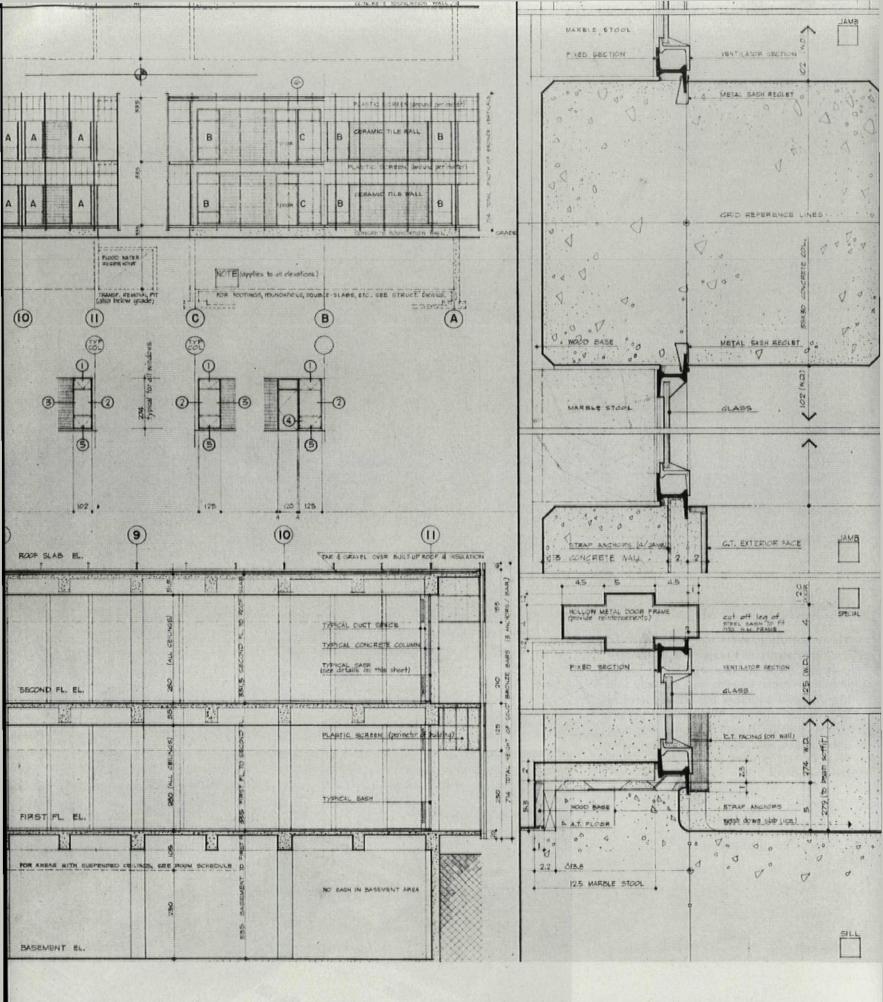


Three buildings share plot, provide offices, staff apartments and carport, and servants' quarters. Office building will be air conditioned. Servants' building will not only look like Japanese buildings but will be lived in by Japanese customs. Wall around project is also a dyke. It will have wooden flood gates, edged with rubber for water tightness, to help protect garden from Kobe's frequent floods.

Photos (below & p. 123): Richard Shirk

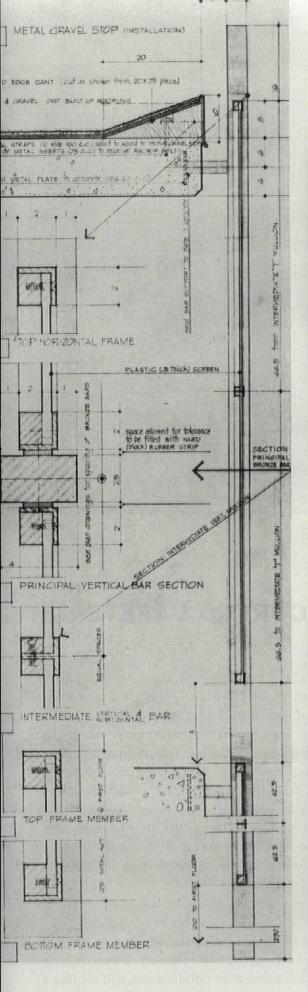


ARCHITECTS: Leinweber, Yamasaki & Hellmuth STRUCTURAL ENGINEER: Yoshikatsu Tsuboi

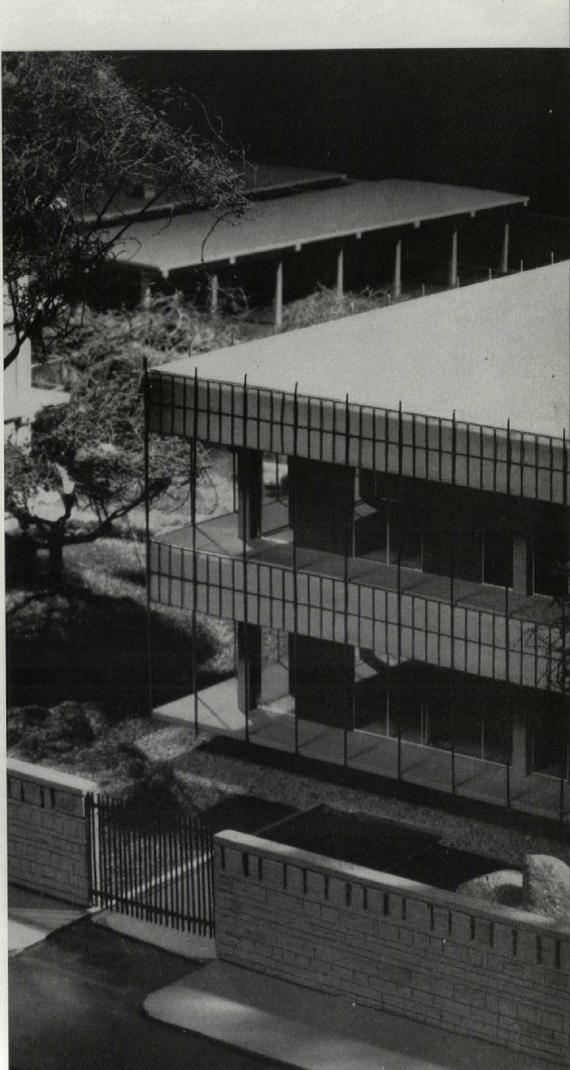


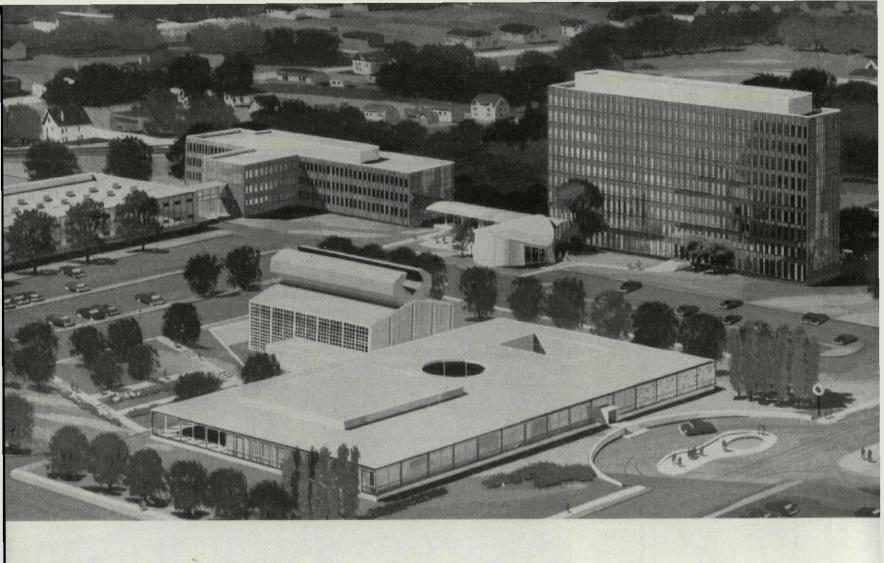
**Structure** is concrete, yet will seem very light. In Japan concretework is so exacting that slabs, for instance, will be tapered out to edges. Shear walls, used between columns to brace building against earthquakes, will be covered with colorful local tile, will support air-conditioning ducts and outlets.

Wall of office building is largely glass to take advantage of good views. (Ocean is only two blocks away.) Some walls of threestory apartment house will borrow from old Japanese technique of building sidewalks; black stones about ¼" in diameter set in concrete like textured terrazzo.

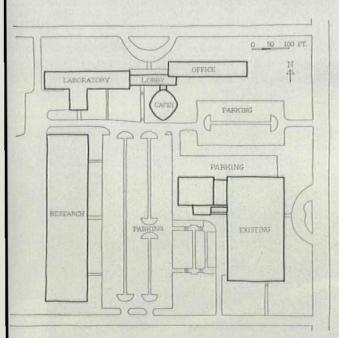


Screen of bronze with glass-fiber sheet inserts will aid air-conditioning system in office building, will also help achieve light effect of small native Japanese building. Wall around entire project will be made of lava stone. Porches are not for sitting, but for shielding glare and sun heat.





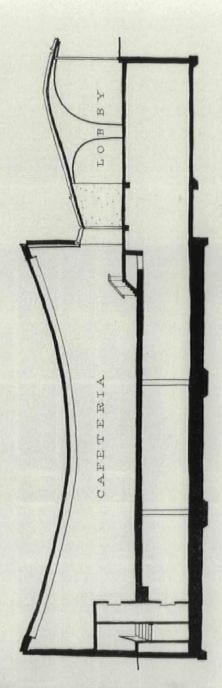
### A NEW GLASS WALL AND A CURVED CAFETERIA



When the Corning Glass Works four years ago built the first of its post-war structures in its home town in upper New York state, the architects made deliberately provocative use of such manufacturing novelties as photosensitive glass and tubular glass. This crowd-drawing "glass center" is shown in the foreground of the bird's-eye rendering (above and AF, Aug. '51). But in the three new buildings now being added—a nine-story office building, a three-story research lab, and a one-story shop—Harrison, Abramovitz & Abbe are developing more universal patterns for the clients' materials. This is one of the designing specialties of this architectural firm, as in their use of aluminum in the ALCOA building in Pittsburgh.

In the new Corning buildings their most specific suggestion for the general use of glass is a reshaping of the modern window. They have taken the horizontal strip window and upended it, giving a tall strip (details, p. 126).

Another intriguing design feature is the cafeteria which projects out from the administration building (details, right). Curved deliberately to contrast with the planar forms of the other new buildings, it will sit like a pavilion near the center of the quadrangle, to be an interesting companion visually for the clawlike ventilator atop the roof of an earlier building nearby. Recalling several other recent engineering explorations in architecture, its roof will be suspended on catenary cables, strung from a compression ring which in effect is hinged on its axis; the two parabolic halves are tilted upward from the center line.



Cafeteria juts out in separate wing. Exterior masonry walls will be faced with structural glass tile. Roof, covering an area 70' x 90' on two axes, will be metal deck clipped to system of catenary cables suspended from two opposed and tilted concrete arches supported on exposed steel columns.

CORNING GLASS WORKS, Corning, N.Y. Research and Administrative Center ARCHITECTS:

Harrison, Abramovitz & Abbe LANDSCAPE ARCHITECTS:

Clarke & Rapuano STRUCTURAL ENGINEERS:

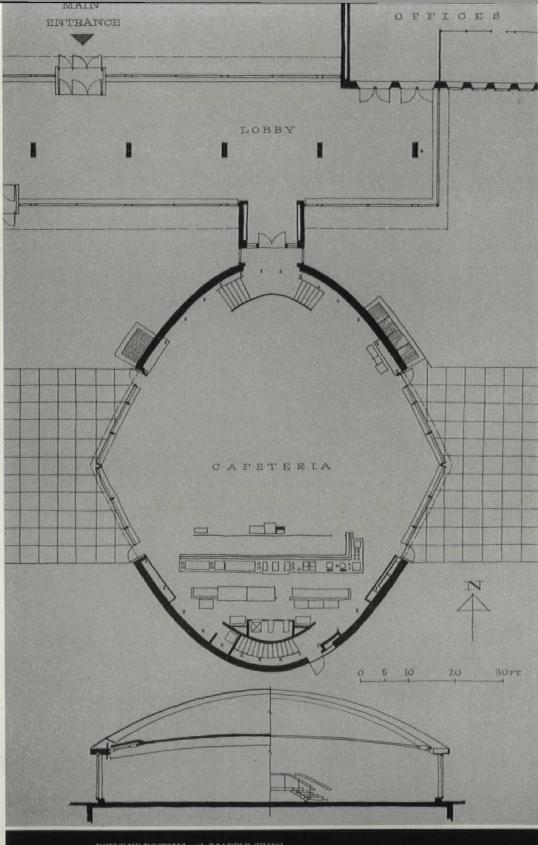
Severud, Elstad & Krueger

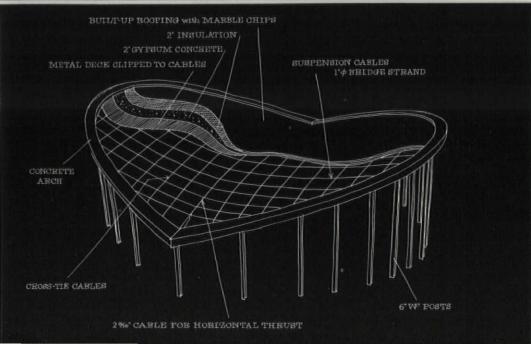
MECHANICAL ENGINEERS: Jaros, Baum & Bolles

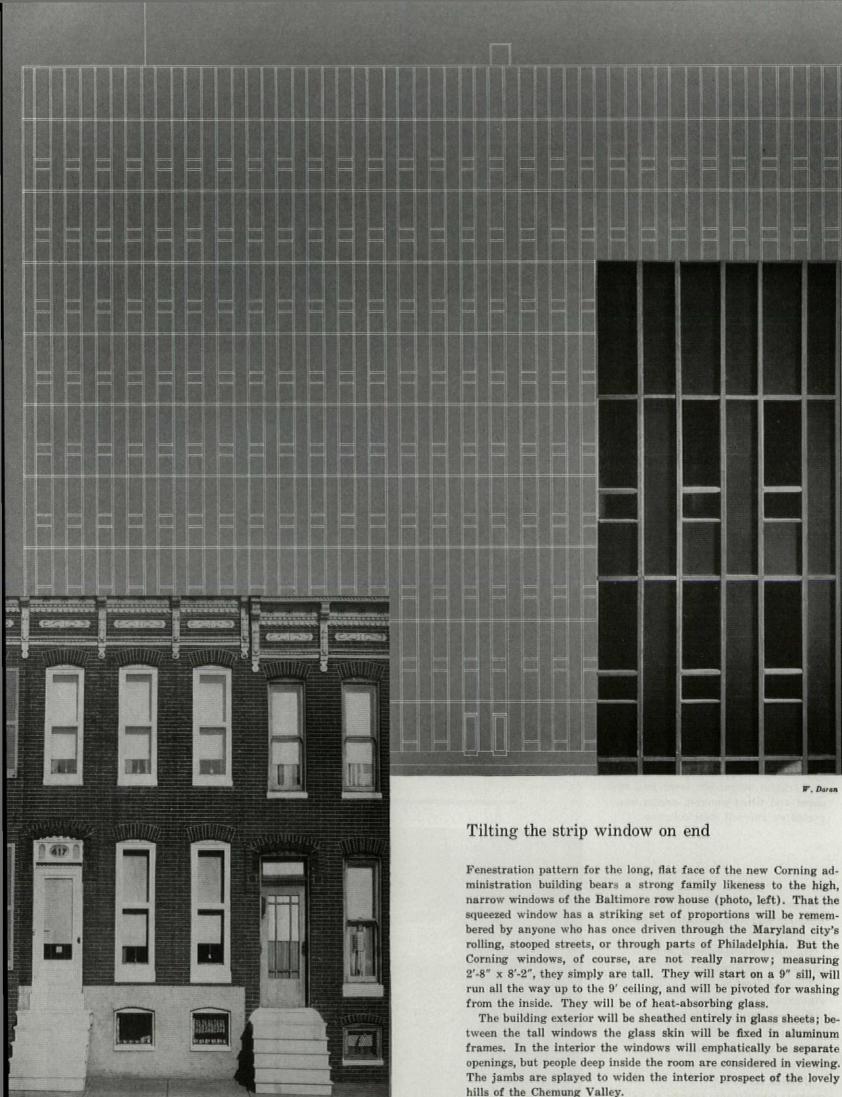
ELECTRICAL ENGINEER:

Edward E. Ashley

GENERAL CONTRACTOR: George A. Fuller

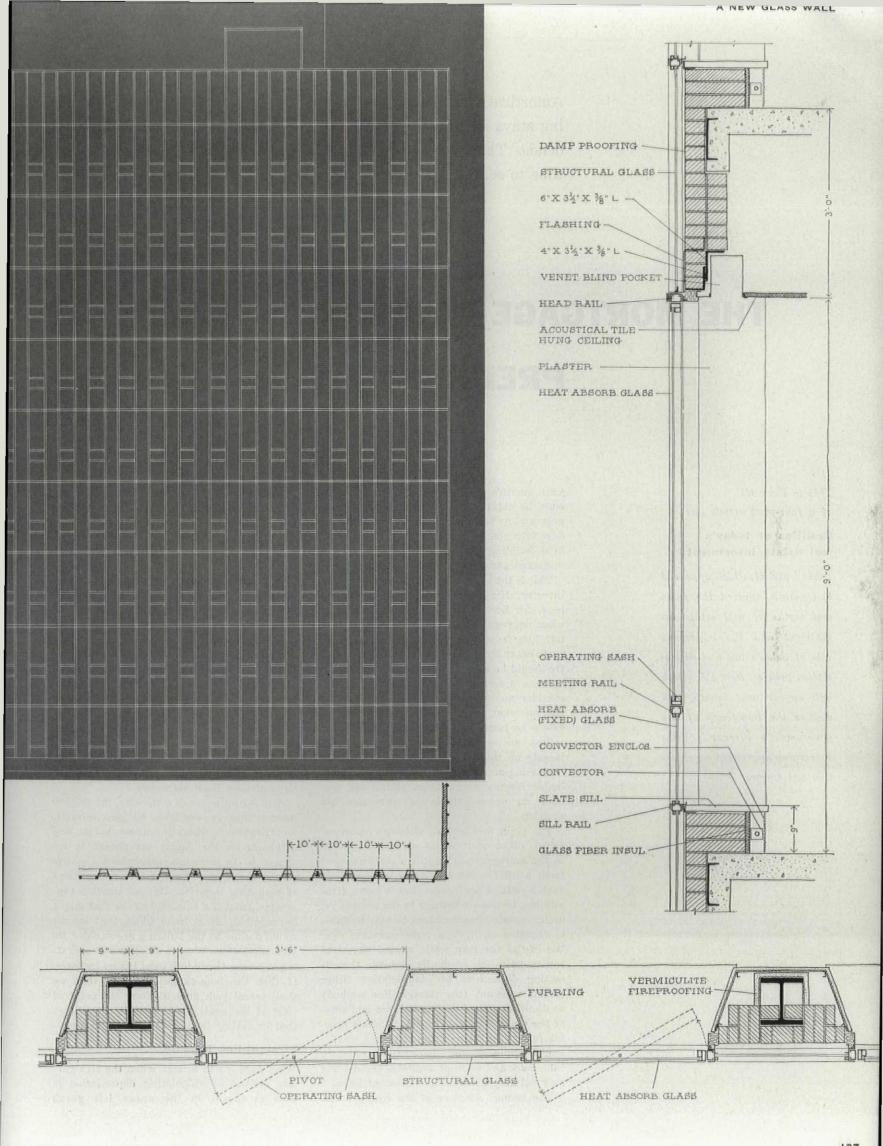






Todd Webb

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Amortization and depreciation curves indicate that the longer a building stays in debt, the greater will be its tax-free earnings and dividends. They also help the building investor decide when is the best time to sell his building.

Part III:

# THE MORTGAGE PATTERN PREDICAMENT by Miles L. Colean

This is Part III of a four-part article on:

#### Realities of today's real estate investment

Parts I and II, which appeared last month, covered the facts and myths of real estate investment and the important role of today's tax and depreciation policies. Part IV, which will appear next month, will discuss the impotency of the government's present policies concerning apartment construction and finance.

Last month's article showed how it is possible, by obtaining a sufficiently large mortgage and by selecting the right tax-depreciation formula, to recapture the risk capital in a building venture during a brief, taxprotected period.

This is the first objective of the risk-equity investor. His problems, however, do not end here, for he has also to decide what to do when depreciation allowances no longer protect him from federal taxation. Should he try to carry the property as an earning asset? Or should he sell as soon as income taxation becomes a serious problem? Can he, indeed, consider anything else but selling? And, if not, on what basis would a new equity investor be justified in making a purchase?

The answers to these questions hang largely on the degree to which the steadily increasing amortization payments and steadily decreasing depreciation allowances produce an uncomfortable or untenable tax position.

The plain fact is that, although amortization is often described as a form of savings to the mortgagor, it is still a cash payment from available income. Amortization is, in fact, a part of his income that is never actually his, because it belongs to the lender; yet under certain circumstances, he may be liable to taxation on it. The circumstances: over the life of the loan while annual payments for amortization gradually increase, the offsetting deductions for depreciation either remain constant (the straight-line method) or diminish (the declining-balance and sumof-the-years'-digits methods). As this process follows its unremitting course, a predicament will be created where taxes constantly take more and more of available income and may actually exceed the income at hand.

The second objective of the equity inves-

tor is to avoid this predicament by keeping out of a situation in which he will be forced to pay taxes on income already pre-empted for other purposes.

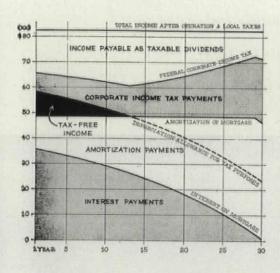
#### For example:

The investor's problem is most easily presented in terms of a specific situation. To keep a complicated matter as simple as possible, we shall take the same case as used in Part II: a depreciable value for tax purposes of \$900,000; an \$800,000 mortgage at 41/2% interest with a 30-year maturity (an alternative of a 25-year maturity will also be shown); and an available income after operating expenses (including local taxes) of \$82,500. The differences among the situations to be discussed will be limited to those resulting from application of the three formulas for calculating depreciation, which have already been discussed.

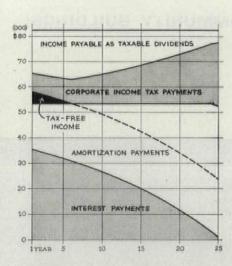
Also for purposes of simplicity, the \$82,500 income that is available to pay interest, amortization, corporate income taxes, and dividends on the equity investment is assumed to be constant throughout the life of the mortgage. Except under conditions of mounting inflation, this assumption represents about the best experience that might be expected. It is more likely that income would decline as the building grows older, its accommodations become obsolete and operating expenses (including local taxes) increase. If then the long-range prospects that we shall reveal look dubious from the point of view of the equity holder, it is a good bet that in reality they would be still worse.

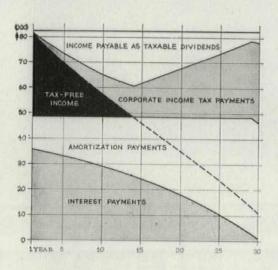
#### Straight-line formula

What happens to income when the straightline method of calculating depreciation is used is shown in the upper left graph

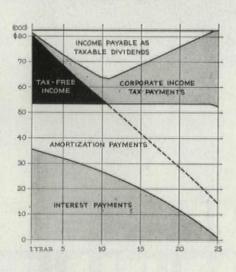


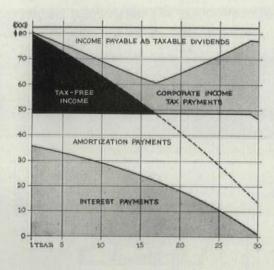
Straight-line formula, among those specifically permitted by Internal Revenue Act for calculating depreciation, allows relatively little income to be paid out as tax-free return of capital to the corporation and the stockholders (black area), particularly in the case of shorter term loans. A comparison of the results of a 30-year loan (left) with those of a 25-year loan (right) reveals that tax-free income disappears after 13 years in case of a longer loan; after only six years in case of shorter loan. In both cases, however, the amount of income payable as ordinary taxable dividends (white area at top of graph) is relatively large (see below).



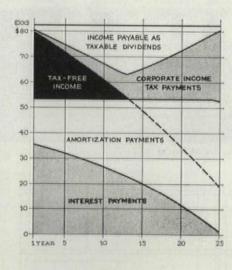


Declining balance formula greatly increases the amount of income payable as tax-free return of capital. This income is available over a period of 13 years for the 30-year loan (about the same as under the straightline formula) and over a period of 10½ years for the 25-year loan (almost twice as long as under the straight-line formula). Note, however, how this declining balance formula reduces income payable as taxable dividends.





Sum-of-year's-digits formula further postpones the time at which the investor must begin to pay taxes on all income—until the 17th year in the case of the 30-year loan (left) and until the 13th year in the case of the 25-year loan (right). In the latter case, the amount of income available after taxes for taxable dividends declines very rapidly as it does for the same 25-year loan under the declining-balance formula. All graphs are based on a depreciable value for tax purposes of \$900,000, a 4½% mortgage of \$800,000 and an income after operating expenses of \$82,500 per year.



(above). In this diagram, the allowable depreciation is shown as a constant amount plotted above the amount of interest paid each year on a 30-year mortgage, the two together giving the total amount deductible for tax purposes. The darkest area of the diagram between the top limit of the depreciation component and the top of the debt service component (which includes both interest and amortization) represents money that may be paid out as a return of capital

tax-free both to the corporation and the stockholders. The area at the upper part of the diagram represents net income for stock dividends after the payment of corporate income taxes. (To keep the diagram from becoming altogether monstrous, the effects of allowable retained reserves and other such refinements are not considered. They would not greatly alter the arguments anyway.)

This graph shows that in time the total tax-deductible amount becomes less than the

total debt service (represented by the crossing of the debt service line by the depreciation line during the 14th year). From then on, a tax must be paid on the amount of amortization that falls above the total deduction; tax payments mount rapidly and net income for dividends sharply declines.

The upper right-hand graph shows how much graver the situation is with a 25-year mortgage than with a 30-year mortgage.

continued on p. 184

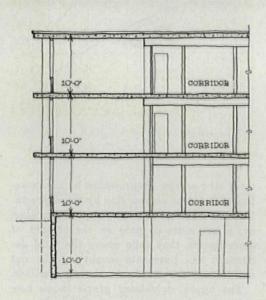
#### COMMUNITY BUILDINGS:

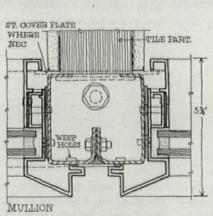
A handsome hospital engineered for economy (below and right)

A suburban store designed for a hilly site (p. 134)

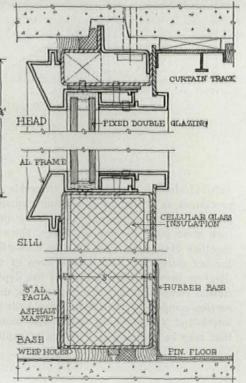
A concrete school prefabricated for dry construction (p. 138)







**Structure** is flat slab concrete with aluminum spandrels. Windows have double curtain track flush with head. Administrator reports patients endorse the big windows and that the light-diffusing casement drape plus heavier overdrape control the light well.



### **HOW TO DO AWAY WITH COSTLY JOGS**

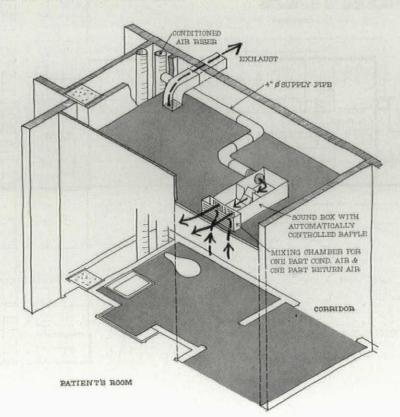
The clean lines in this hospital are the signature of its clean structural and mechanical design

This medium-sized hospital is a low-cost job, and yet it has a remarkable quota of amenities. It has year-round air conditioning throughout, a toilet for every bedroom (although no room is larger than two-bed), ample built-in storage.

The architects got this combination of economy and amenity by a most careful dovetailing of plan, structure and mechanical engineering. For instance, the high-velocity air heating and ventilating system would have been a more expensive choice than hot water or steam radiation if the architects had not seen and seized upon the special economies it permitted. The cost difference was more than offset by using fixed sash (with double glazing), eliminating screens and translating saved radiator space into a 15' instead of a 16'-deep two-bed room. Keeping all the ducts and utilities within the corridor bays eliminated hung ceilings in two thirds of the hospital; most ceilings are simply the bottom of the 8" flat slab above, acoustic-tile covered. The toilet rooms, placed back to back in the corridor bay, not only serve as part of the air exhaust system but keep the plumbing (along with air ducts) at interior columns (plan, p. 132). The plumbing contractor was so intrigued with this simplicity that he compiled figures showing this building contains 45' less pipe per plumbing fixture than any other hospital he had encountered.

With radiator, beam and interior column jogs out of the way, a clean sweep was completed by exposing exterior concrete columns. The projecting floor slabs serve as sunshades and window-washing ledges.

Construction cost: \$1,294,000; \$20.95 per sq. ft. (with unfinished basement and third floor space adjusted to value of finished space). Normal capacity, 84 beds; maximum, 108. An additional \$75,000 will give additional 17 two-bed rooms on unfinished third floor.



FAYETTE COUNTY HOSPITAL, VANDALIA, ILL. ARCHITECTS: Pace Associates PLANNING CONSULTANT: Herman Smith, M.D. GENERAL CONTRACTOR: J. L. Simmons Co., Inc.

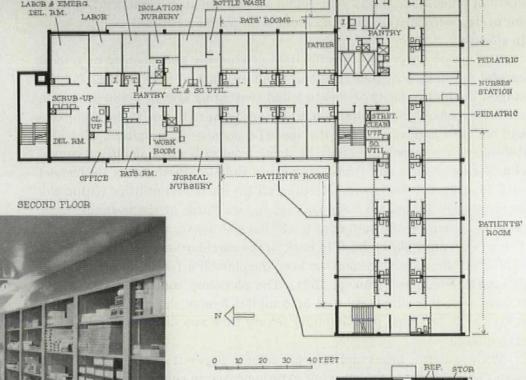




Air conditioning: high velocity all-weather system recirculates air within each room but not from one room to another. Mixture occurs in "sound box" behind grille. Exhaust is through toilet-room ceiling. System is zoned, also thermostat-controlled in room. There has been no hot-weather experience yet, but there has been zero weather and Administrator W. A. Deems reports: "After final adjustments in thermostats and air volume, we seem to be doing nicely." System would not be feasible with single glazing because of cold downdrafts and excessive temperature or volume of primary air required.



Second-floor plan shows compact treatment of mechanical parts of building; stacks and ducts are kept to column-width space between back-to-back toilets. Corridor air also comes out of these vertical lines and exerts enough pressure to keep bedroom air out of halls. Nursery photo shows double-drapery treatment of nursing-floor windows. Third-floor plan is similar to second.

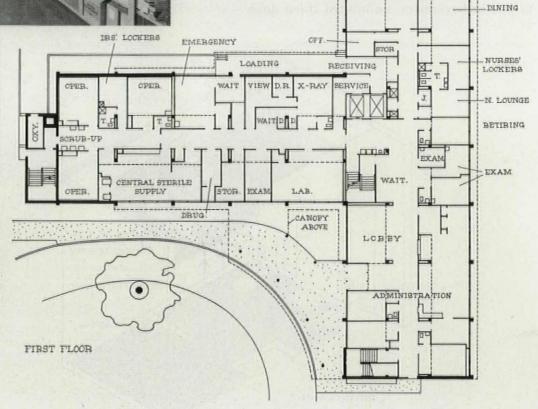


KITCHEN-

PATIENTS'

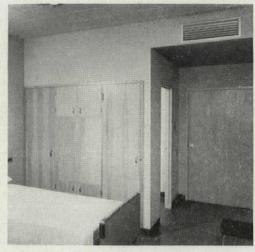
PATIENTS'

First-floor plan has especially good medical core. Note, for instance, how convenient emergency is to surgery, X-ray and laboratory. This plan was calculated to reduce operating costs by relating jobs. The architects, giving Dr. Herman Smith, their planning consultant, credit for developing this area, say: "He related part-time functions, then related rooms in which these functions would take place so fewer people would be needed to give adequate service." Administrator reports that plan works very well and is liked by personnel. Photo shows light and pleasant sterile supply room, looking toward its clean end which opens into the surgical corridor. Basement, not shown, has boiler, machine room, laundry, shops, storage in finished space under central wing.

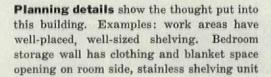




Operating room, toward scrub-up



Patients' room, toward corridor



on toilet side. Glazed main stair invites visitors, cuts demand on elevators. Expert architectural detailing results in an unusually satisfying glass, aluminum and brick curtain wall. (For detailing, see drawing, p. 130.)



Lobby stair to nursing floor

Entrance canopy is at right, brick operating-delivery wall at left





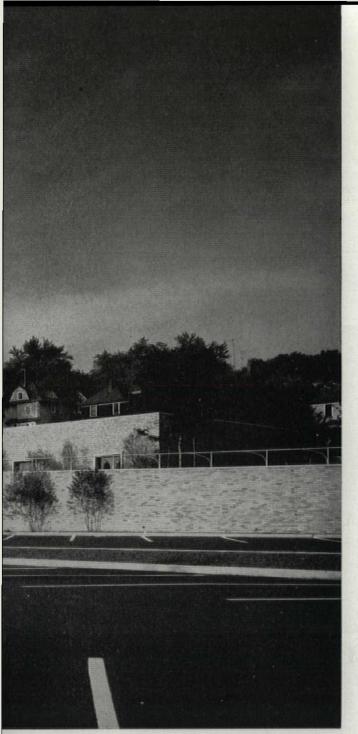
Photos: O Ezra Stoller

### **SPLIT-LEVEL SUBURBAN STORE**

It shows how the defects of any hillside lot might be turned into major assets Hilly sites are often a bargain in price or central location, or both, yet many store owners and architects avoid the problems they pose, settling for flat land at higher cost or farther out of town. This new Saks Fifth Avenue branch in White Plains, N.Y. is a notable exception. It capitalizes on a lot that drops 60' from corner to corner, gains three assets:

Better parking: the store is shoved back into the hill, leaving most parking out front, where customers do not have to search for it. The broad expanse of blacktop is softened by frequent planting strips, which incorporate changes in grade, and by a gray brick retaining wall, which splits the lot into parking and entrance turn-arounds for the main store above and the children's basement below. A service road ascends to the roof level, where there is additional rooftoop parking for customers and business visitors. Employee parking is behind the service tower.

Easier stock distribution: unlike most stores, Saks can use a simple "gravity" system to unload its merchandise on the high side, unpack and mark it in one room (saving double handling) and send it down on the passenger-freight elevator to the two sales levels below. Deliveries can be prepared and loaded from this same room.

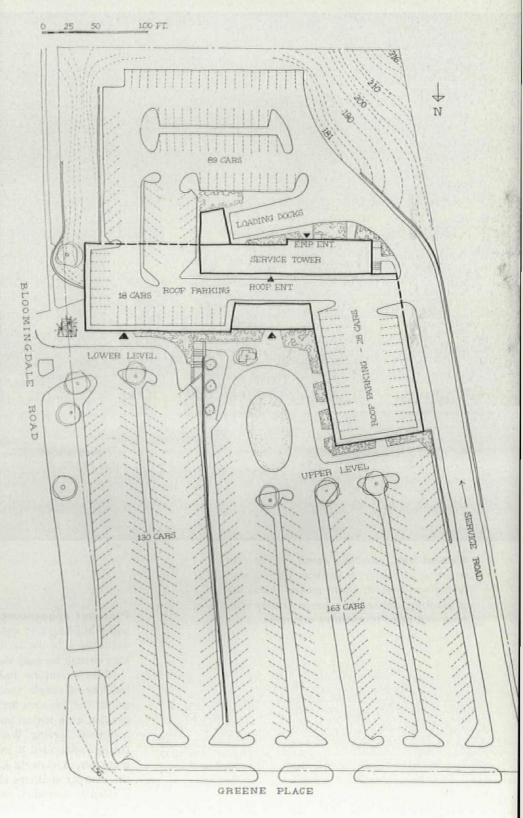


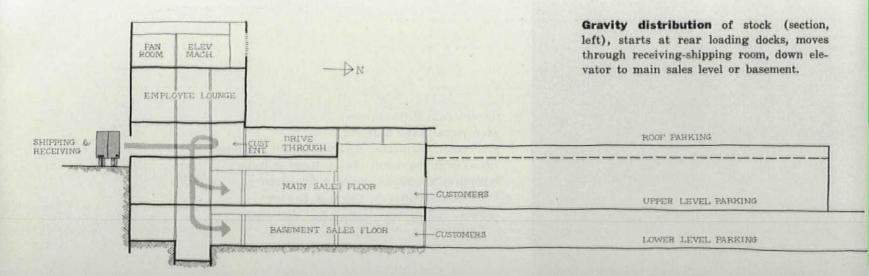
Long, low wings of L-shaped building embrace parking areas in front. In foreground is parking for "basement" floor (children's clothes, toys, maternity shop). Mass of service tower is lightened by grilles which ventilate cooling tower on open roof.

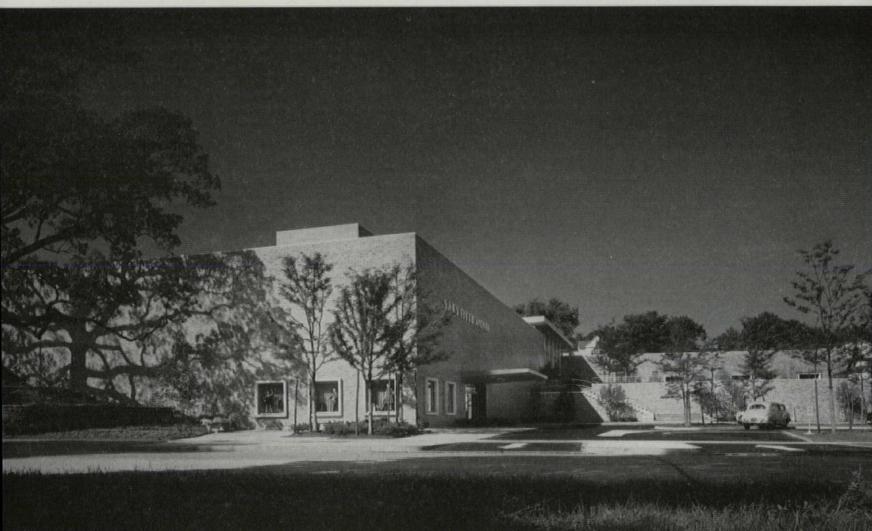
Parking facilities include rooftop. "lot" reached by ascending service road at right. It brings total car spaces to 428, covering about 90% of 400' x 550' lot. Reinforced concrete structure is sized to carry cars now, additional sales floor if desired later. Saks may add customer restaurant as added convenience, either by converting lounge inside service tower or by adding new enclosure on roof in front.

OWNER: Saks Fifth Avenue ARCHITECTS: Kahn & Jacobs

STRUCTURAL ENGINEERS: Severud, Elstadt & Krueger MECHANICAL ENGINEERS: Jaros, Baum & Bolles ELECTRICAL ENGINEERS: Smith & Silverman LANDSCAPE ARCHITECTS: Clarke & Rapuano GENERAL CONTRACTOR: George A. Fuller Co.



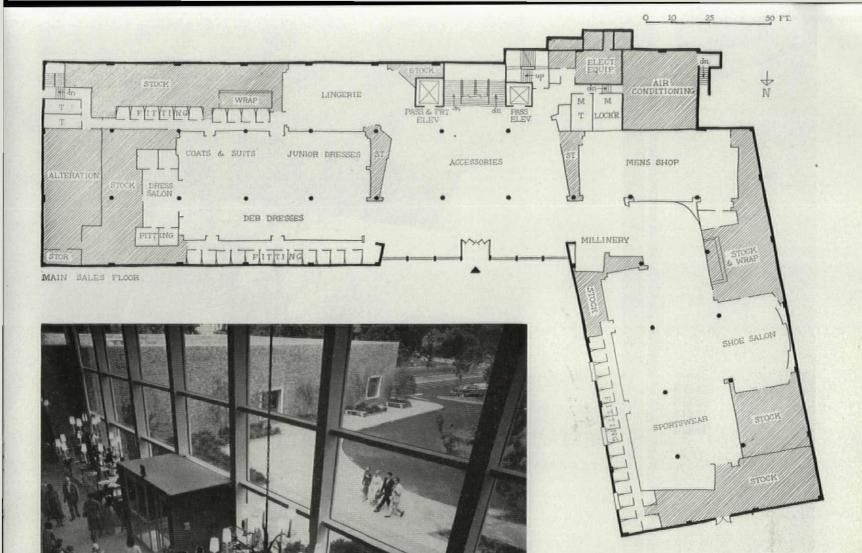




Ancient oak, carefully saved during construction, throws rich shadows on end wall facing major road. Store makes liberal use of planting and benches, keeps display windows and signs to dignified minimum.

Pleasant appearance: by use of the slope in both directions, an essentially bulky building and wide parking area are broken into varying levels and fitted naturally into the landscape. At the same time the hillside keeps the building high enough for easy visibility.

Saks executives had first visualized the new store as a Georgian colonial building of simple (and less expensive) block shape, located near the low corner of the five-acre lot, close to both bordering streets and near the chief competition at a major intersection to the north: a large B. Altman branch that had been serving Westchester County matrons for several years. But test borings uncovered a small lake in this valley location. With this condition as a starter, Architects Kahn & Jacobs had a chance to develop new forms to fit the sharper contours above. Their eventual design is every bit as dignified as a colonial imitation, and a lot more interesting to look at.



Main sales floor (plan above) extends full length of store, is broken up into intimate boutiques for each department. Main entrance, left, faces a glass wall two and a half stories high to north, away from direct sun and toward main intersection. Photograph was taken through clerestory windows on parking roof. Interiors were designed by Ernest Bonnamy.



Exterior of main entrance shows how building is handsomely textured in varying shades of gray glazed brick (with magnesium-spot or "salt and pepper" pattern), trimmed in white Vermont marble and stainless steel. Building provides 70,725 gross sq. ft. of floor area, cost about \$21 per sq. ft.

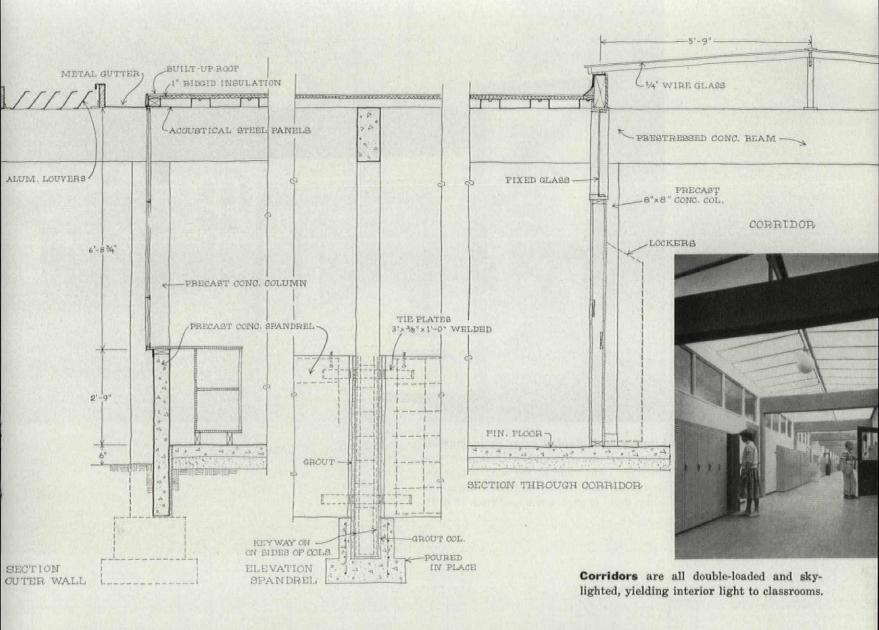


Covered play space at south end of school has steel columns. Otherwise, prestressed columns, prestressed beams and steel deck are used. Leader hugs foreground column.

**Playcourt** (below) includes rainy-day roof of precast arches on prestressed edge beams. Steel of arches was welded to projecting steel of beams.

Photos: Dearborn-Massar





## "THE CONTRACTOR'S JOB WAS ASSEMBLY"

Construction was \$8.58 per sq. ft., but this school of prefabricated parts is far from a prefabricated design

Prefabrication in schools usually means complete prefabricated classroom units. Here we find a second kind of approach: a special, tailormade design prefabricated in virtually all its pieces. Because concrete columns, beams and spandrels were standardized and precast, construction at the site was almost all of it dry. And because dimensions in general were so well fitted to manufactured parts, the startling result was a cost lower than many stock prefabricated rooms of similar quality.

The architects began with a module bay of 14'-4", based on the maximum size of standard galvanized sash, the near maximum span for 3"-thick acoustically treated steel roof deck, and an economical spacing for prestressed concrete beams, carried on precast columns with precast spandrels.

The system chosen has the built-in economy that comes from figuring how to make one item do two or three important jobs. The insulated decking forms the finished ceiling; it serves as structural subfloor for the concrete slab above, and it acts as a seismic diaphragm because, in effect, it serves as the stiffened web of a "girder" of which the walls are the flanges. The 4" precast concrete spandrels rest on spot footings beneath the columns and tie to the columns; between spot footings, these spandrels also assume the role of running footings.

The parts came off an assembly line; this kind of thinking did not.

SHERMAN ELEMENTARY SCHOOL Tacoma, Wash. ▲ 20 classrooms; 600 pupils.

CONSTRUCTION: Spot footings under columns, running footings under end walls. ▲ Prestressed concrete beams. ▲ Precast concrete columns and spandrels. ▲ End walls, brick cavity. ▲ 3" insulated steel decking. ▲ Floors, concrete slab with vinyl, asphalt or ceramic tile. ▲ Partitions wallboard or plywood on studs;

or metal lath and plaster. A Hotwater heating; convectors in classrooms and administration, radiant coils and unit ventilators in kindergartens, hot air from tempering coils in all-purpose rooms.

COST: \$411,754, not including fees but including paving, planting, shades, draperies and kitchen equipment. A \$8.58 per sq. ft.; \$9.36 including fees and 3% state sales tax.

ARCHITECTS: Robert Billsborough Price and Robert M. Jones, associate

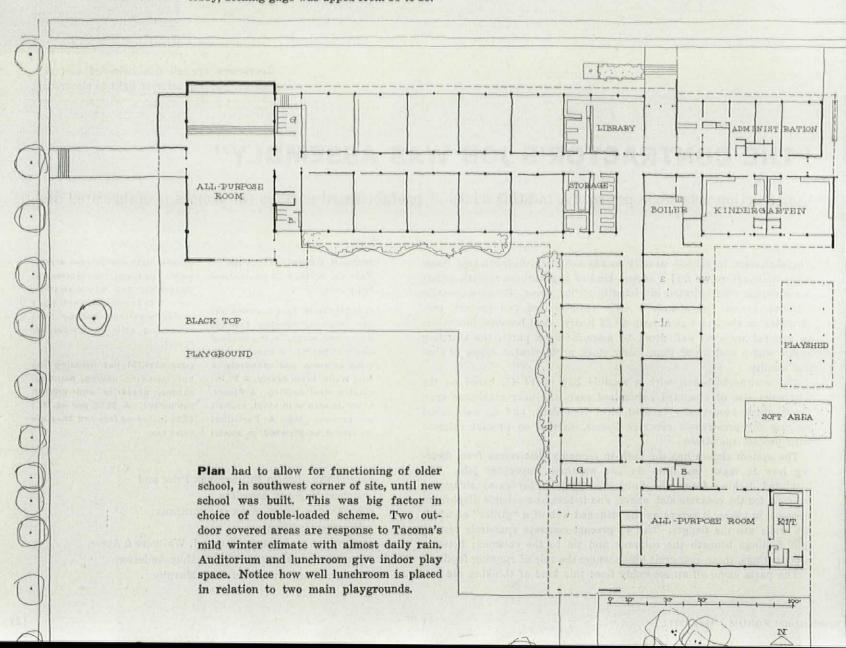
MECHANICAL AND ELECTRICAL ENGINEERS:

Worthen & Wing

STRUCTURAL ENGINEERS: Horace J. Whitacre & Assoc. STRUCTURAL CONSULTANT: Dr. Arthur Anderson GENERAL CONTRACTOR: Ostruske-Murphy



Library and display occur at juncture of lobby and corridors. View is toward, and through, auditorium at far end. Where the roof span had to be increased to 20' at lobby, decking gage was upped from 16 to 18.





Classrooms are two bays wide, 28'-8" x 33'-10". View above shows kindergarten, looking end-on at arched play shed. Photo at right shows typical classroom at corridor wall and partition. Prestressed beams were cast in steel forms using 10,000 psi compressive strength, no-slump concrete. To vibrate

it at necessary frequencies of 6,000 to 7,000 cycles per minute, supplier developed special vibrating equipment, attached to forms. Columns were precast from 6,000 psi concrete, and again steel forms and external vibration were used. City required a full-scale load test before permitting building.



Auditorium, like lunchroom, can be easily shut off from rest of school for public use. Strips of galvanized decking, 16" wide, attach to flat bars imbedded in top face of prestressed beams. Decking is perforated and has sound-absorbent filler.



## THREE APPROACHES TO ARCHITECTURE

The public has known for some time that contemporary building is available in more than one modern style. And the differences are not mere whim, as all know who recognize architecture as a principle of organization—not mere decoration. Yet the public has rarely been let in on the secret of what the differences really are. More frequent analysis of specific buildings might give more information and entertainment to the public.

No pretense is made that the three trends shown here are anything more than a short selection, nor are the labels anything more than a convenience. You are being invited to look more closely at . . .

#### 1. "THE NEW BRUTALISM"

At first look this building is classically simple, symmetrical, stripped; it says "less is more." This is especially true of the trim gym (large picture, right). At a second look, horns and cleft hoof poke through the innocent classical robe. This is not simple elegant modern at all, at all.

Such a building declares itself through gestures which architects call a "vocabulary" of design. In materials—steel frame, glass screen, straight brick panels—the gesture is of full allegiance to the industrial age. In shape the building is a block which suggests visually that it surrounds three interior courts (notice the three-bay division of the front—top view).

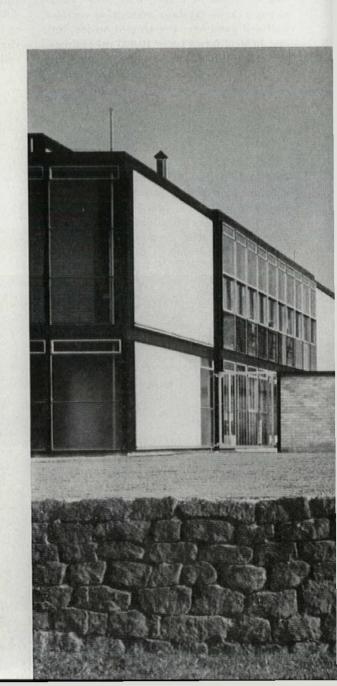
In the wall a steel skeleton declares itself as the support for a flat slab roof. This skeleton is carefully proportioned to set the major rhythm of the walls, for it is a designed skeleton, a speaking skeleton, not just something the engineer left. Its bones are well related in size, shape and weight; the joints are trim, the way of turning corners is neat, the work is done with apparent ease.

In the wall there is a second rhythm. It is set up by a lighter, over-all frame pasted onto the big structural one to carry the screen of glass (best seen at bottom of p. 145). Individual openings are subordinated to the screen as a whole, with its simple modular rhythm, not—as in traditional architecture—treated one by one.

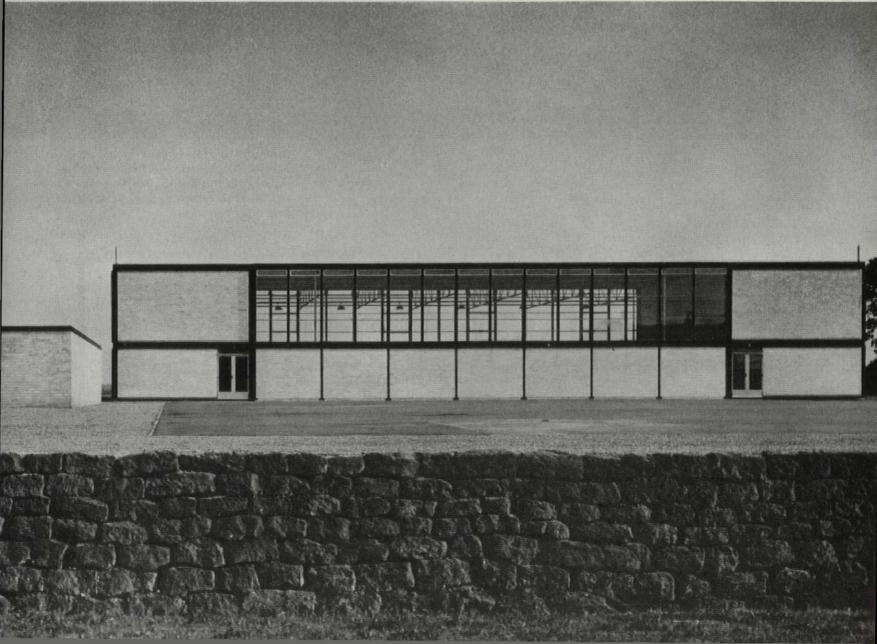
Finally the wall has some panels of yellow brick, set into the skeleton frame here and there, chiefly in the end walls. They serve visually as rhythmical accents and functionally both as enclosure and as stiffener to the skeleton frame. All in all, the scheme suggests the serene classic of Mies van der Rohe, and will fool anybody for a good long minute. For it was Mies who made the exposed steel skeleton a device of architecture and not only of engineering.

Yet somehow Hunstanton looks like Mies gone fey. Listen to this from the Smithsons as architects: "This design implies a peculiar ruthlessness—overriding gentlemen's agreements." And again, "it does not ingratiate itself with cosmetic detailing." In other words, the younger architects say they are offering their meat raw. They themselves call their approach "the new brutalism." Their over-all shape is more cut up and busier than any by Mies; they handle the plan as they found it, not smoothing it out; they proudly handle their materials as they found them, too: in other words, just as they come from stock.

For their Piranesian trick with Miesian space, turn the page.









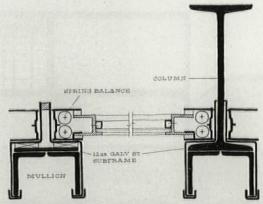
#### The "new brutal" interior

Coming inside Hunstanton School, just look what we have here. It is the assembly room of the school and as a space it is nothing if not heroic. The lowest section of the wall is all glass so the space sweeps on through, through the adjoining courts and to hell and gone. Overhead is no smooth reassuring ceiling but monitors—roof strips alternately high and low that swoop through the high room like Piranesi's bridges, making drama with the clerestory windows. Ceiling surface is just the bottoms of prestressed concrete beams left as delivered.

In this room and in the other rooms, too, photography was done before furniture came in, to show more clearly the as-is nature of incidental equipment. Heating coils, to be sure, are generally invisible under "cosmetic" surfacing of the floor; tripping over these might have been just a little too brutal. Yet some are still naked along windows (to offset cold downdraft) and are brightly painted. And all else is as native and exposed as it can be.

This rough tough team of Alison and Peter is rather surprising to encounter in tight polite England. The "new brutalism" they proclaim will be accepted as an excuse all around the world to let drawing be rough and execution sloppy. This is of course just not what the Smithsons mean at all. Daring as they feel in their new blue jeans, down in the bone they are still scholars. Their detailing has been called Palladian; and their sense of space and form is extraordinary.

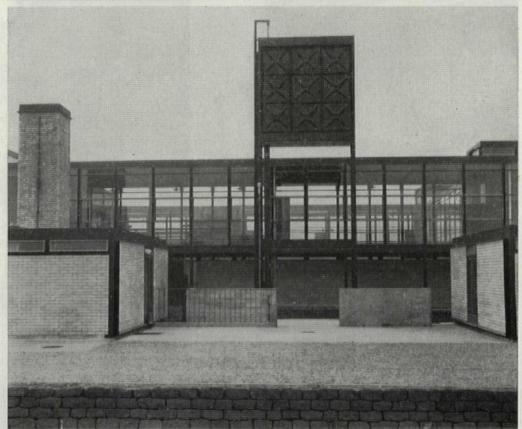
**Drama** of a strange kind arises from the functional acrobatics of the roof over a room handled monumentally otherwise. Projection booth fails to declare in design fact that it is suspended.



**Detail** shows three separate elements: 1) building frame, 2) curtain frame welded on, 3) sheet-metal window frame inserted and capped with filet.



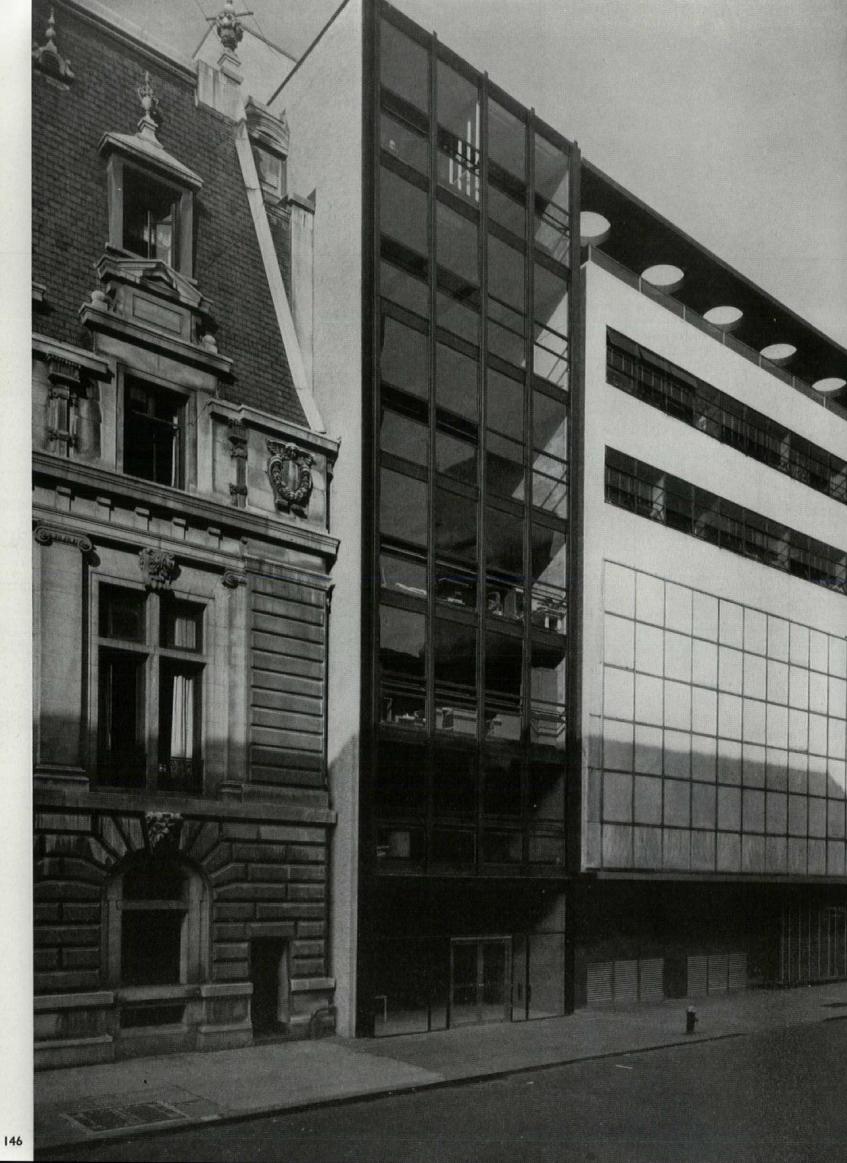
Rawness is typified in ceiling of bare precast channels. Steel beams were sprung for these to be let in, slid to position. All equipment is prefabricated, US style.



Formalism is shown in way every detail has been designed in what an English magazine calls "Palladian" manner. But total effect is romantic.

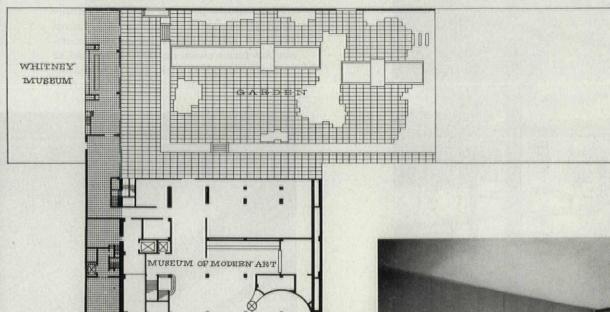


Weirdness and effect of dream-fantasy arise from strange juxtapositions. Smithsons contend this is "a school, not a prison" yet have scorned prettiness.



CAFETERIA

ANNEX



Photos: (below) © Ezra Stoller; (opp. p.) Alexandre Georges

ARCHITECT: Philip C. Johnson, director of architecture,
Museum of Modern Art; Landis Gores, associate
STRUCTURAL ENGINEERS: Eipel Engineering Co.
LANDSCAPE ARCHITECT: James Fanning
CONTRACTOR FOR BUILDINGS: Irons & Reynolds
CONTRACTORS FOR GARDEN: Murphy-Brinkworth,
Woodcock Nursery



THREE APPROACHES TO ARCHITECTURE

#### 2. MODERN CLASSICISM

Like the school on the preceding pages, this addition to New York's Museum of Modern Art attempts a classical objectivity with the formal structural disciplines developed by Mies van de Rohe. But where the school interprets structure with a nervous bravura, the museum achieves a serene, neutral background for the organization and enjoyment of contemporary arts. The major differences lie in Architect Philip Johnson's greater unity of shapes and levels, slimmer-looking steel members and smaller, finer brick.

Pictured with its neighbors (photo left) the new classroom and office annex also completes a striking vignette of changing taste and technology. To the left is a million-aire's early town house, Renaissance, stony, ornate. On the right is the main museum building, completed by Architects Philip Goodwin and Edward Stone in 1939, after the early International Style had turned the emphasis to volume defined by a thin, smooth-looking envelope hiding the skeleton that holds it off the ground. And finally, evolving from its parent, is today's pure expression of structure: the steel skeleton holding either glass or brick panels, its rhythm held as quiet as possible.

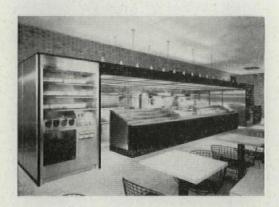
Structural furniture carries out spirit of building in department of architecture offices. Wrought-iron pieces, topped with white linoleum or black cloth, are architectural in character, suggesting trusses. Designs by Darrell Landrum for Avard Co.

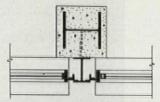


Cafeteria behind office annex opens to terrace and sculpture garden. Wire-mesh chairs were designed by Harry Bertoia for Knoll.

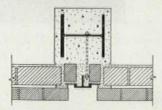
Details of façade shown in photo (right): structure is expressed where black steel mullions peep out between two-story panels of brick. These panels, supported on horizontal steel angles below, stand out from plane of steel and glass to emphasize that they carry nothing, not even themselves, but serve as "curtains" for art galleries behind.

Service unit of stainless steel (below) keeps cafeteria equipment out of way in narrow room. Museum visitors pick up trays and tableware at left, move past tiered counter with its selection of inexpensive light lunches, eat inside or under parasols and ironwood trees outside.

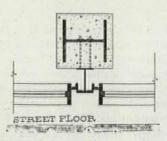




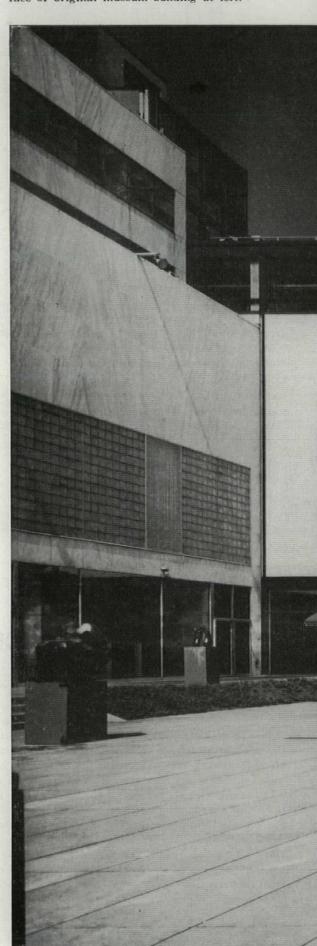
TOP FLOOR

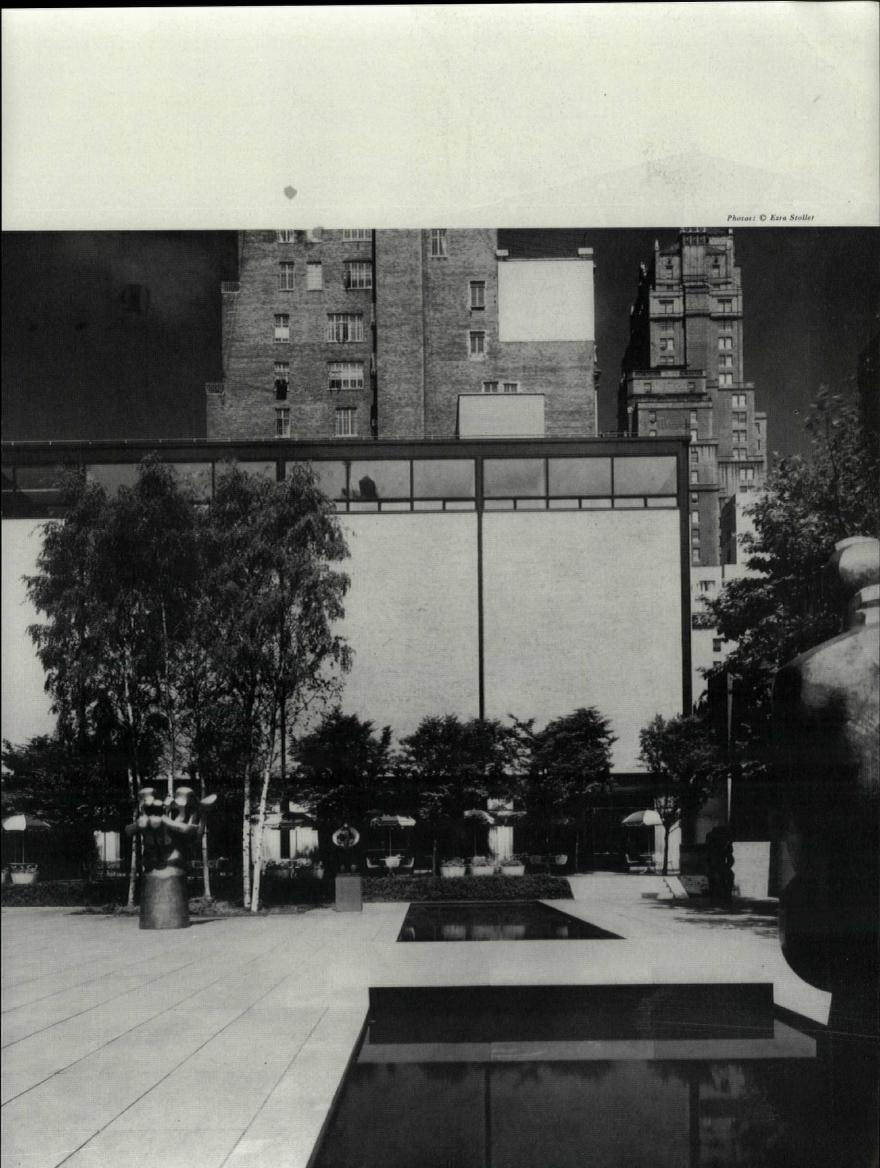


INTERMED FLOOR



Midtown oasis of museum's Abby Aldrich Rockefeller Sculpture Garden brings halfmillion visitors per year into thoughtfully informal gardens contrasting with formal buildings. New Whitney Museum of American Art forms clean, neutral background of light-gray-speckled brick, joined to marble face of original museum building at left.







THREE APPROACHES TO ARCHITECTURE

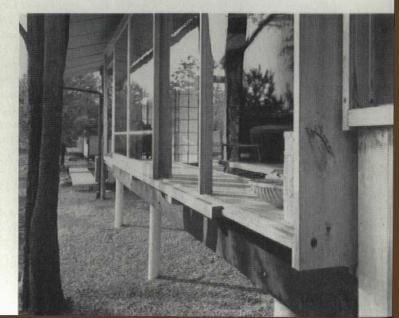
#### 3. ROMANTIC REALISM

Although it sometimes has a romantic grain, lumber is still the most practical construction material to most US builders, and this is the reason that the usual identification of George Nakashima as a romanticist in architecture must be qualified. It is true that naming the woods in the new showroom of his Bucks County home and shopsite is like chanting lines by Walt Whitman or Thomas Wolfe—oak, long leaf yellow pine, Douglas fir, chestnut, red cedar, poplar, Alaska cedar, southern cypress, sugar pine, walnut, birch, sweet cherry, red birch, wild cherry, balsa, teak, locust (for a list of how these are used see p. 152). But he uses power tools on the woods before he hand-finishes them. The mode is romantic only because of the sympathy with which Nakashima works his basic materials, whether they have been shaped by a stamping press or by many summers.

His new building actually was designed around one slab of lumber. When Hans Knoll (whom Nakashima licenses to factory-produce several of his furniture designs as competition for the same pieces he makes by hand) bought an old furniture factory in nearby Pennsburg, Nakashima went along

Display room, also used for waiting, occupies most of small building. Flooring is cherry planks.

**Sliding glass** walls are doubleglazed with low-cost crystal glass. Roof is corrugated asbestos.





to inspect the premises. The proprietor showed them a  $2\frac{1}{4}$ " x 25" slab of cypress 16' long. "I've been saving it for 20 years to find something to do with it," he said.

Nakashima took it home on top of his Ford that afternoon, and put in eight more years of study on it. From it and around it finally grew the new building. This slab today is intact as the window seat and frame of his new showroom. "I suppose you could call it my module," Nakashima grins.

Nakashima did not build this all himself. To prove that it is not just work-manship that makes his product, but predominantly design, he contracted this job to a local carpenter and mason, teaching them how to join it his way and providing such elements as the precious plank flooring, but otherwise just drawing it and watching it come together the way any skyscraper architect does—except in one detail: Nakashima did his drawing on the back of a sheet of plywood which happened to be handy the afternoon the contractor came by to bid. The dimensioned drawings shown on these pages were made after the building was complete.

The final fact about this new showroom is that it is not just a piece of Nakashima furniture, magnified into a building; those who visit it probably will find it more satisfying than any piece of furniture Nakashima ever has made, a reassuring endorsement of the fact that furniture can please and comfort, but only architecture can delight to this degree.

FRAMING Oak

Oak

Long leaf yellow pine Douglas fir

POSTS

Oak

Chestnut Red cedar

SIDING Poplar

Red cedar

WINDOWS AND DOORS

Chestnut Alaska cedar Southern cypress

Sugar pine

CEILING PURLINS

Alaska cedar

SILLS

CABINETWORK Poplar

Birch

FLOORING (mixed) Sweet cherry Wild cherry

Red birch

LARGE WINDOW LEDGE Southern cypress

SLIDING DOORS Alaska cedar Balsa

Walnut KITCHEN SPLASH BOARD

KITCHEN COUNTERS

Walnut

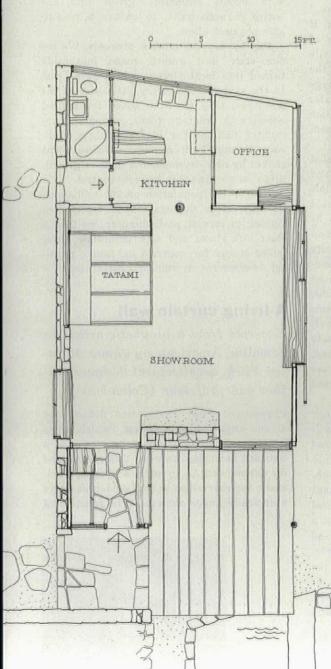
Teak

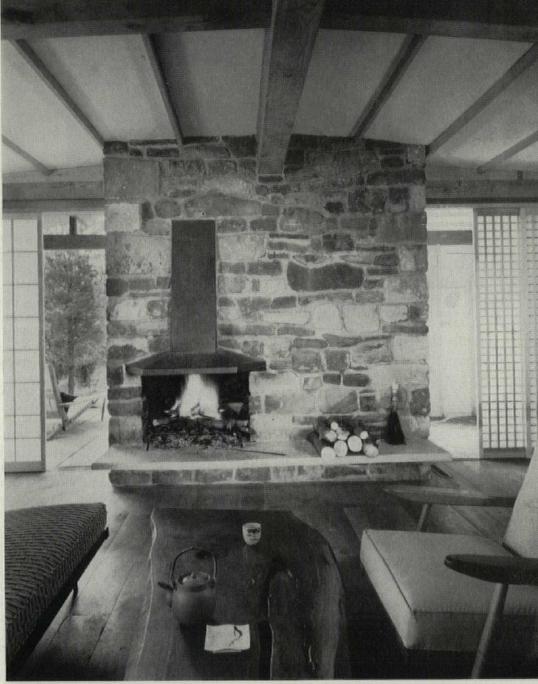
TERRACE AND OUTSIDE POST

Locust

White walls of showroom are %" pressed asbestos, war surplus, bought for 8¢ per sq. ft. Platform of tatami panels (left) adapts traditional Japanese pattern.

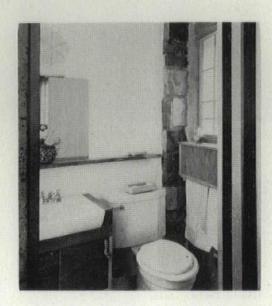






Fireplace has hood of steel sheet, rusted all over, then painted with linseed oil. Cantilevered concrete hearth is reinforced with %" bars 6" o.c. Sheet of pressed asbestos is set into cement under fire area.

**Bathroom** is mostly wood with standard fixtures set in. Window at right wears shoji screen inside.





## **EXCERPTS**

Opinion and comment
on the building industry
from the rostrum
and the press

#### The suburban menace

Excerpts from an article by Architect Harry Weese, chairman, planning committee, Chicago chapter, AIA, in the local AIA Bulletin

We have experienced an amazing postwar metropolitan population growth which has almost filled platted land and is spilling into unincorporated areas in increasing volume. This process is abetted by in-migration pressure on lower-income city areas. Low vacancy rates plus undesirable city conditions, plenty of automobiles, cheap new housing with generous terms on raw land add up to a mass movement of lower-middle-income families hitherto impossible. Though most migrants drive 25 to 50 mi. to work, the coincident drift of industry outward supports part of this migration.

Further fuel to this fire is the recent, if belated, adoption by our local builders of the large-scale operations and mass site fabricating techniques developed on the West and East Coasts. With small package sewage disposal plants and sufficient water supply, there is literally no restriction on location of new residential development within the metropolitan sphere.

The temptation to avoid incorporated areas, their punitive codes, dead land and already compromised plans is irresistible for a large-scale builder, though he would be well advised and usually prefers to be close enough to parasite on existing community facilities, unless proposing a really large-scale, fully equipped, integrated community. At present there are no regulations or incentives for him to produce the latter.

So we have the current picture of rampant partial development in which developers are producing low-cost isolated tracts of houses without parks, schools, shopping, adequate traffic plans or planned land-use districts looking to community growth and maturity.

Much has been said about the sociology of these settlements, not all good. But looking merely at the physical problem, what are we creating in our hinterland? We are literally asking for and getting future substandard areas. This is not to say that lower-income groups should not enjoy rural pleasures. Rather it is to say that when a family buys a house it should also buy and be made to pay for the gutters and curbs, the drainage, the school, the park, the police and fire protection that, by hook or crook, it must have for health and welfare.

It is within the police power to require

these things of the developer, and enlightened zoning from Puerto Rico to San Mateo County requires it. In this problem the city and the older suburbs have a common cause. They must be enabled to compete on more equal footing with this new growth.

A metropolitan government, of course, is the logical answer and is espoused by knowledgeable civic groups and newspapers. Until that day, however, there is much we can do with existing mechanisms, the best of which is county zoning. Rather than persist in its passive and slow retreat from status quo, county zoning could be reframed as the mechanism of a plan for a land-use and traffic control, utilities and community facilities development. It is rudimentary. There is no longer a distinction between town and country. The entire metropolitan area needs to be zoned as the potential city with density standards, green belts, the entire paraphernalia, to ensure a reasonable physical plan.

Day by day the erosion proceeds. We see our state and county roads inexorably turned into local streets, when, at no cost to the taxpayer and very little cost to the developer, they could be zoned for limited access with frontage roads, saving the uncounted millions for blasting future highways through built-up areas. We see towns choked by new developments in their growth areas over which they have no control.

With a US population of 200 million on its way, it is important that, while continuing to correct past blunders, we take a clear look ahead and seek immediate legislative means for controls on future physical development in unincorporated areas.

#### A living curtain wall

Excerpts from a prophetic article in Scientific American by James Marston Fitch, architectural designer, author and professor (Columbia)

Physiologist Ivan Pavlov one defined the animal organism as a system "which exists in surrounding nature only by means of a constant balancing between this system and its environment." In such a system, obviously, the marvelous animal epidermis plays a critically important role. The function of



Opinions expressed in these excerpts are not necessarily those of FORUM's editors a building is analogous, yet no building skin today approaches the performance of the biological world. The curtain wall is passive, lacking the power to adjust to the fluctuating external environment. It should be able to intervene actively in the building's struggle to maintain its internal stability.

Consider the thermal problem. On a cold, sunny, windy winter day, the climate at the outer surface of the skyscraper will vary widely from one exposure to another. The south wall, shielded from the north wind and heated by the sun, may have the climate of Charleston, S.C., while the north wall, chilled by the wind and untouched by the sun, may have the climate of Manitoba. In summer the contrast may be equally extreme. Thus the climatic spread between the north and south walls might more properly be expressed in hundreds of miles than in tens of feet.

Now an air-conditioning engineer can easily calculate the gross heating or cooling loads imposed by such conditions and provide sufficient capacity to handle them. But this by no means guarantees that, from the standpoint of either human comfort or mechanical efficiency, the building will operate at an optimum level. To begin with, air conditioning by definition manipulates the air temperature; only indirectly does it influence the radiant temperature. Thus in a building heated to an air temperature of 72° an office worker sitting in the sun behind the south glass wall may be in an environment with the equivalent of a 90° air temperature, while a worker near the north wall, radiating heat from his body to the cold glass, may be in the equivalent of a 60° ambient temperature.

Ideally the two walls should have quite different properties. On a cold, sunny day the south wall should be able to absorb the solar heat and then transport it to the north side, where it is needed. And the north wall should be as opaque to heat transmission as possible. Under different weather conditions the properties of the walls should change to handle the new circumstances. One obvious way to accomplish this would be to introduce into the skin a capillary heating and cooling system such as a warm-blooded animal has.

Something of this sort has been attempted in at least one US skyscraper—the Bankers' Life building in Des Moines. Completely air conditioned in a conventional manner, the structure also has a capillary system embedded in its curtain walls. The inner membrane of the walls consists of porcelain enameled steel panels to the backs of which are attached flat coils of copper tubing. These coils circulate either chilled or heated water. Each of the four exterior walls is

independently controlled by its own thermostats so that its capillary system can operate either to heat or cool that wall, depending on the climate of its exposure. On a sunny winter day the capillary system in a shaded wall will circulate hot water, while that in a sunny wall will circulate none or even conceivably chilled water. On a hot summer day the sunny walls will call for chilled water, while those in shade will require less or none at all.

Such a capillary wall today is too complex and expensive for any building except one in which precise environmental control is mandatory for the conduct of its activity. Yet when the problem of the storage of solar energy is finally solved, it should be possible to have a building skin whose capillary system could absorb enough solar energy to meet a large part, if not all, of the energy requirements of heating and cooling around the year. Then building tissue would begin to approach the living world in its exploitation of the external environment. A building, like a living organism, would meet Walter B. Cannon's criterion of homeostasis, that "nearly thermostable state" which was "one of the most valuable advances in biological evolution."



#### Architecture's uneasy peace

Excerpts from an address by Russe'l Lynes, managing editor of Harper's Magazine and author of The Tastemakers, before the 86th anniversary dinner of the New York AIA

It is significant that this meeting should take place in New York's Museum of Modern Art, a building that only a few years ago was looked upon by many members of the AIA as a scar on the New York landscape, a preposterous box of mortar and glass that was the denial of the traditions so deeply inbedded in buildings like the University Club by McKim, Meade & White. It is representative of the speed with which tastes change in our time, of the rapidity with which architectural styles

replace one another. Not long ago I was riding down Park Ave. on a bus. There were two young women sitting in front of me and as we came abreast of 99 Park Ave., the office building with the aluminum sheathing, one of the young women said to the other: "What do you think of the new building?" Her friend looked at it for a moment and replied: "Well, you know, I rather like it. It isn't all glass."

The rapidity with which tastes change these days has left the architectural profession gasping for breath like runners who have been doing a mile and when it is over have sat down beside the track, no longer competitors but joined in a kind of fellowship of exhaustion. Architecture in this country has long thrived on the bitterest kinds of dispute, on battles between the exponents of different styles. It makes me a little uneasy to find what looks like peace in the house of architecture, the lion lying down with the lamb, the pediment lying down with the cantilever.

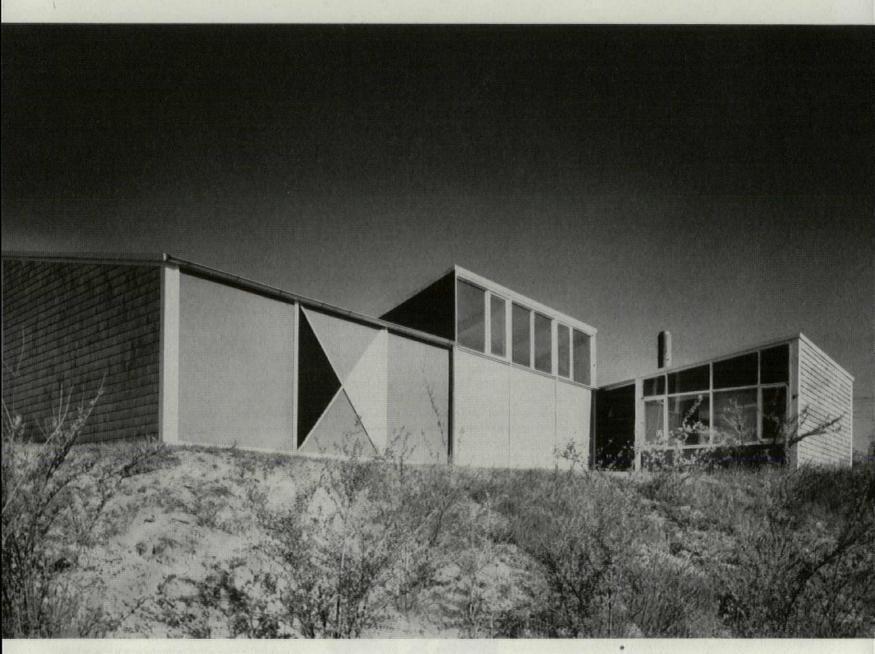
This is not in the tradition of the AIA. When it was first organized in New York in 1857, there was a tremendous Battle of the Styles in progress. The Gothic Revival was the current brand of honest architecture. It was replacing the Greek Revival because the advanced architects of the day said that it was more honest for Americans to live in Gothic buildings than in what they called "tasteless temples." If it seems odd to us that Gothic should be considered more honest than Greek Revival, we need only to bear in mind that for the last century every style of architecture that has been foisted (if that's the word) on the American public has come complete with a whole set of moral arguments to prove that it and it alone was honest architecture and all other styles were dishonest. This was the battle between the Gothic which had been successfully fostered here by A. J. Davis and the Landscape Architect Andrew Jackson Downing, and the new kind of beaux-arts classicism that Richard Morris Hunt, the first Paris-trained American architect, had brought back with him. Henry Van Brunt, who was one of the early members, records that the arguments about style became so bitter and so time-consuming at the meetings of the AIA that in order to get any business done at all it was necessary to adopt a resolution forbidding the discussion of styles.

Fortunately for the vitality of architecture, however, the arguments about style went on unabated. When Hunt built the first of his châteaux on Fifth Ave. for Mrs. William K. continued on p. 194

## **BUILDINGS IN REVIEW**

Two small newspaper plants at opposite corners

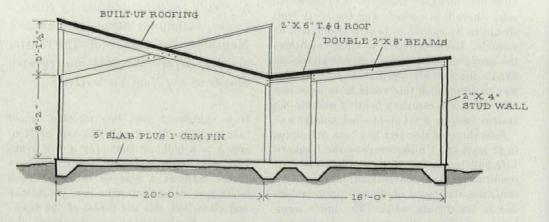
of the country . . . a city swimming pool . . . and a beautiful garbage dump

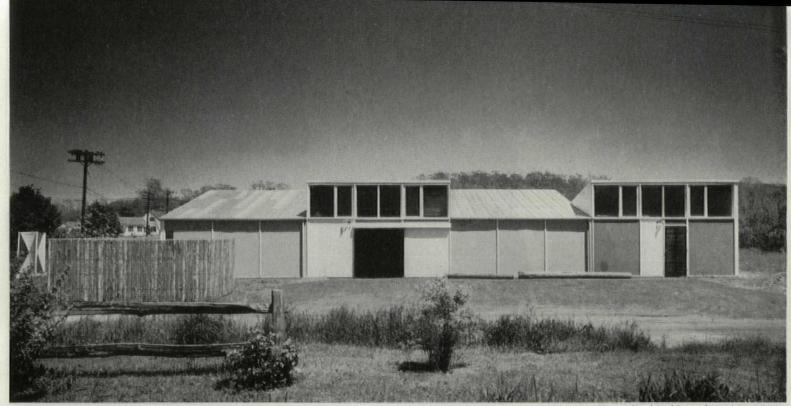


Bow-tie trusses (see sketch) permit roof pitch to alternate, admitting light from both sides without using valuable wall space for windows. Motif is repeated on side wall.

Business office juts out from plant to face road. Barn-red and blue-gray walls, shingles and white trim fit in well on Cape Cod.

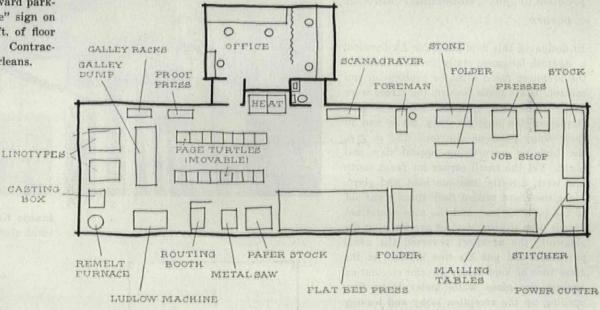






Photos: (bot.) Fred Stone; (others) Ben Schnall

Service side has sliding door toward parking lot. Note tricornered "bow-tie" sign on highway (left). With 2,000 sq. ft. of floor space, building cost only \$15,000. Contractors were Fettig & Winslow of Orleans.



#### SEASIDE PRINTERY

How the sophisticated architect and the skeptical carpenter served the impecunious client

The Cape Codder is a brisk, cramful little weekly published in Orleans, Mass., and read by 3,000 people, natives and summer residents alike, up and down the Cape. Since Malcolm and Peggy Hobbs took it over two years ago, they have doubled circulation, and built a new plant that could not fit the region and the readers better.

Architect (and Harvard professor) Serge Chermayeff, who spends his summers in nearby Wellfleet, had to give the Hobbses a lot of wall space for all their equipment, had to provide light and air, and yet not exceed a very low budget. He used a series of high-windowed shed roofs supported on bow-tie trusses and posts, sheathed with inexpensive hardboard walls. The latter required a paint seal, so Chermayeff used bright holiday reds and blues, and carried

out the bow-tie (or box-kite or pennant) motif on one side of the building and on the three-sided plywood sign out front. These explosive holiday colors are held steady in a classic frame of white New England trim and weathering gray shingles.

"The contrast between the modern architect and the traditional craftsman," notes Reporter Hobbs, "could hardly have been greater. The interesting thing was that the natives developed a certain respect for the way the architect's unorthodoxy worked.

"The building, naturally, created quite a stir in this tradition-laden area—a sort of good-humored horror at first. One person described it as a broken-winged seagull trying to fly. But it made sense to most people once they stepped inside. By now there is even a little local pride in it."

Light trusses are easily assembled on ground and lifted into place. Diagonal sheathing on end wall acts as cross-bracing.



#### CITY NEWSPAPER PLANT

Novel interior fins solve a complex problem of space, sound and southwest exposure

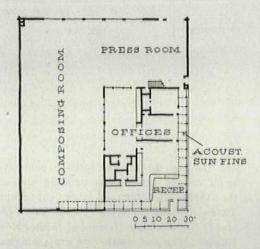
In designing this new plant for La Opinion, a Spanish-language daily in Los Angeles, the architect faced a major problem in sun control. Glass walls toward the street were deemed desirable on two counts: to give employees the daylight they never had in their dingy previous quarters, and to give the building advertising appeal day and night. Yet the small corner lot faced south and west, directly into sun heat and glare. Since the client needed floor space right out to the building line, and the code would not permit deep shading devices overhanging the sidewalk, the architect reversed the usual procedure and put his fins inside. At the same time he kept major interior circulation against the glass walls under these fins, opening up the reception lobby and leaving all work areas well back from direct sunlight (sun curtains are provided around the desks but are seldom used). Back of the fins at mezzanine level is the newspaper's morgue, a traditionally dark place made light and spacious with wire screening (photo above).

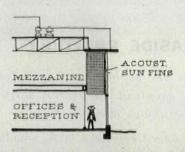
With the help of a slight roof overhang and blue heat-absorbing glass, the fins baffle sun and sky glare. And with the help of acoustic tile ceilings, they also cut down the higher noise level of a room with two big glass walls: each fin is a 5' x 9'-9" frame, blocked and cross-braced with 2" x 3" members, filled with sound-absorbent rock wool and faced with perforated hardboard.

Cost of the building: \$119,660 (about \$8.50 per sq. ft.). George Vernon Russell and Eduardo Jose Samaniego, associated architects; R. G. Ojeda, mechanical and electrical engineer; Ralph Marvin, structural engineer; Pozzo Construction Co., contractors.



Inside fins, 5' apart, are attached to structural aluminum mullions of blue glass wall.





West front has sleek appearance, especially when lighted at night. Western hemisphere at left is silhouetted by lights behind.





Long line of clerestory over dressing rooms has counterpoint in short sweep of arch. Pool was built for Oakland high school.

#### MUNICIPAL SWIMMING POOL

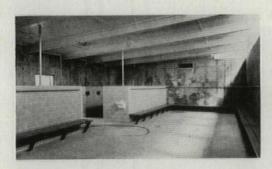
A modern civic façade plays the sweep of a shallow arch against its massive horizontal lines With right angles and open glass fronts a common sight in new buildings, an arch in a solid brick wall is bound to get more than a passing glance. Frank Lloyd Wright successfully courted customers with a bland brick wall and a mysterious little arched entrance in his V. C. Morris store in San Francisco (AF, Feb. '50). In this new swimming pool for the city of Oakland across the bay, the blank wall hides the pool and bathers' dressing rooms from a busy suburban street, and the wide, shallow arch relieves the horizontals of building mass, clerestory and broad steps.

The pool itself, 50' x 100' and sloping in depth from 3' to 10' (for diving) to 8', is heated by radiant copper coils embedded in its concrete floor. Return lines pass through the shower-room floors, keeping them warm to the touch. As swimmers

enter the pool, displaced water overflows into scum gutters and is drained into a tank under the filter-room floor, where it is pumped back through the filters into the pool to maintain an overflow at all times. As the swimmers leave, the storage tank automatically starts recirculating the pool water through the filters. The only waste occurs in backwashing of the filters, saving up to 80% of the water used in a conventional recirculating system. Spray jets at the bottom of the pool wall send the recirculated water out across the floor, keeping it clean without need for vacuum pipe lines and cleaner.

Cost of the pool, including bathhouse, mechanical building and equipment: \$134,-000. Architect: Irwin M. Johnson; William C. Helms, associate. Contractor: C. A. Gossett & Sons.

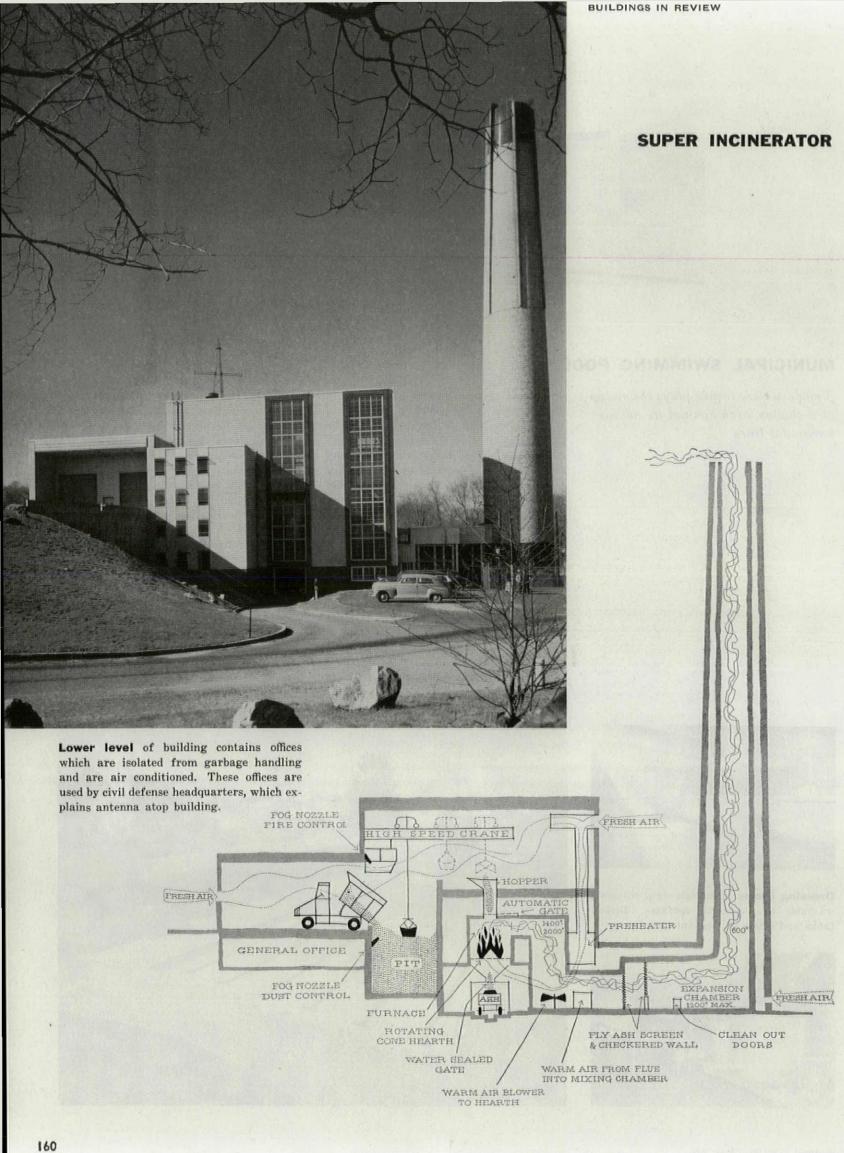
Photos: Hainlin Studio; (opp. p.) Julius Shulman



Dressing rooms have high strip windows, washable tile, concrete surfaces. Below: tanks and filters in mechanical building.







Even the lowly garbage plant can be a thing of beauty—especially when it turns the town dump into a park

Not so long ago Brookline, Mass., one of Boston's more genteel southside suburbs, faced up to a rather smelly problem. Somehow 12 acres of land right next to its fine residential section had gone to pot. Rats and refuse multiplied in spite of burning, and a heady aroma wafted far and wide.

Nearby property owners recoiled at the idea of an "incinerator," but today they call the same 12 acres "Incinerator Park" and even use it for pleasant woodland walks.

The big disposal plant that cleaned up Brookline was also well-enough designed to merit an AIA award and is spotless enough to serve as the town's civil defense headquarters (the New England Public Works conference actually held a big luncheon there last summer). It burns 100 tons of refuse per eight-hour shift, and will serve an ultimate population of 75,000.

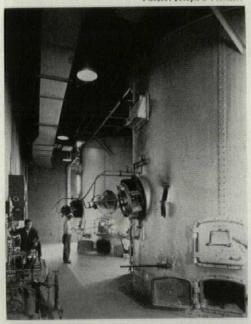
The process. Two collections weekly are made from each Brookline household by a fleet of 12 dump trucks. They enter the building at five-minute intervals, are weighed and pass to the dumping floor, where they back up to the big storage bin (sketch, left) and unload in less than a minute. Dust and fire hazards are kept down by fog nozzles during unloading, and hoses and floor drains permit washing down the trucks before they leave the building. Rubbish is picked up from the bin by an overhead grab-bucket crane (which has an air-conditioned cab), fed into charging hoppers over the two 150ton capacity furnaces. Moving grates in each furnace break up the refuse for burning; incombustibles drop through the grate into ash hoppers where they are quenched in water and dropped into a truck (photo, right, below), which removes them once a day to become sanitary fill for a nearby swamp. A strong draft coming up through the furnace grates forces burning particles into adjacent combustion chambers, through baffles to catch any remaining ash, then into the 180' chimney, built higher than surrounding hills to insure continuous draft. To keep odors and dust from escaping to nearby residential areas, dumping is done behind closed doors, and all air in the plant is discharged through the fires to insure complete deodorization.

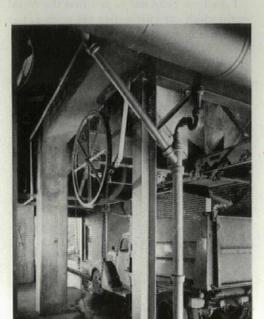
Cost: \$875,000, including \$203,500 for furnaces, \$40,300 for crane, \$68,000 for chimney, \$43,000 for "wood hog" (see right). The plant is run by a foreman and nine employees at a cost of \$40,000 a year. Isidor Richmond and Carney Goldberg, architects; Metcalf & Eddy, engineers; Bossi Construction Co., contractors.



Truck entrance is on upper level so that dumping process in aided by gravity.

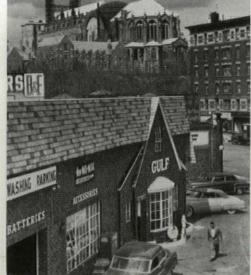






Furnaces are equipped with auxiliary oil burners to assist in complete combustion and deodorization whenever rainfall has made garbage unusually wet. For fire safety there are duplicate stair wells on either side of furnace tower and sprinkler system connected to fire alarms.

Ash hopper beneath furnace floor feeds into waiting truck which takes incombustibles to nearby swamp. In an adjacent building tree trunks, blighted by Dutch elm disease, are chewed up and conveyed to main refuse bin for burning.



Photos; (above) Walt Daran; (opp. p.) J. R. Eyerman-Live

An address by Pietro Belluschi, dean of MIT's School of Architecture and Planning, before the AIA's New York Chapter

# THE CHALLENGE OF ST. JOHN'S CATHEDRAL

Can modern architecture rise above today's refuse heap of ugliness and create forms to match the inspirational symbols of the past?

The architectural profession has now before it the challenge of proving that the Cathedral of St. John the Divine in New York can be successfully finished in the contemporary idiom (AF, Dec. '54—ED.).

There has been a great increase in recent years of congregations willing to take the modern architect at his word. I feel, though, that in this particular case the decision of the vestry to consider abandoning traditional forms, even if only for financial reasons, assumes historical importance and the test is more severe and of greater import than any I know of. In effect we are asked to pit in a most direct and intimate way the results of our wisdom, of our knowledge, of our maturity as architects, against a set of forms which have for a thousand years served as the very symbols of human inspiration to worship. Hollow forms when copies, you say, but still speaking with endearing tones to the multitudes, still representing in the eyes of many people the highest expression of religious faith when faith was at its highest.

We are asked in fact to place on even terms the forms developed by our convulsed, unhappy, materialistic society side by side with those which sprang from the very spirit of man in the most spiritual period of his history. Obviously, in this contest we are at a disadvantage. Neither the battlefield nor the weapons nor again the time is of our own choosing, and in spite of recent progress in our architectural thinking, the physical circumstances surrounding our lives have not prepared us to face the test.

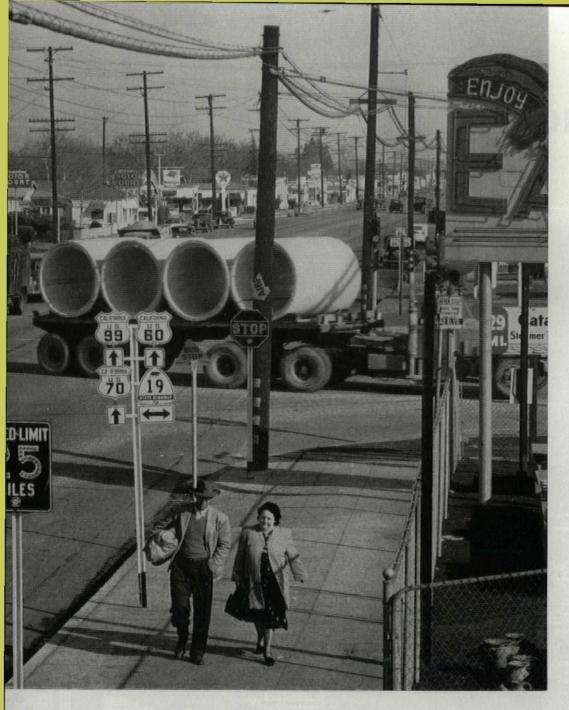
I need not point out to you that the visual world which our own society has given us has been to a great extent, and especially in the interland, a squalid refuse heap of ugliness, a tangle of poles and telegraph wires, a succession of rusty automobile dumps, of junk yards, and dilapidated shacks, a nightmare of slums and ugly signs. In this unhappy age of speed and pressures the energies of our creative artists have been directed mostly inward; only few of them have set their hands at the impossible task of bringing some semblance of unity and visual order into our lives. They have made only slow, piecemeal progress, but they are particularly shy when asked to impart spiritual significance to buildings of monumental importance.

We have heard people say there is no use

regretting the fact that our age will be remembered for contributions to mankind other than spiritual awareness or artistic inventiveness. They say we should be proud that it has advanced in social understanding, that it has attempted to solve the problem of distributing the wealth among its citizens, that it has tried to weld bonds between nations. certainly that it has excelled in scientific and engineering discoveries; by those values and standards they say our nation has become great and powerful. Yet our answer to those arguments is that in spite of them, ours is not a great society, and it will not be one until it has created for itself a more harmonious physical environment: that is, not in isolated instances alone, but everywhere, a more human architecture. It will be great when there will be a fuller flowering of the arts: that is, when man as an individual will have reached the exalted role for which he was predestined.

Is this being too naïve? I am sure many think so. In optimistic moments it might seem that the turbulent era of the pioneer, of the exploiter and of the unscrupulous empire builder is gradually coming to an end and that there are signs appearing in many guises that some day we may reach maturity. The professional magazines of the world are filled with examples of work done here, and students of architecture from everywhere come to our universities. We may detect in many quarters, if we wish to, a rising regard for human values and a greater respect for order and harmony, a thirst on the part of larger and larger groups for visual serenity where they live and work, and a keener appreciation by many people for the creative arts in their infinite variety. Those may be only faint signs but encouraging and important, even if timid and tentative in relation to the whole panorama of what must yet be done.

We may be encouraged, although sometimes I wonder, when we think of the tools we now have to communicate with enormous numbers of people and of the opportunities given us to raise their level of education. Obviously what we need is a large supply of faith—faith that the masses are really capable of growing in awareness and therefore that they are worth saving, faith also that our more creative people will succeed in pro-



ducing the spiritual symbols which may serve to reflect and illumine our civilization.

If we hold to such faith, then we must find the courage to face all tests which are offered to our generation. But, and this is my most important point, with that courage must also go the good sense to see that what we do, that is, the answers we give, are not the quick or the superficial ones. They must be drawn from the deepest spiritual wealth we possess. I mean they must include the contributions of our most distinguished creative artists; they must be bold in showing what we believe in, as human beings born in a difficult and demanding age; but what we say must be felt and real. Only in such a way we shall be heard. We may fail even then and our age may be judged artistically impotent, but our failures may well become sources of future strength; but if we are false, if we retreat or compromise, we shall find it more and more difficult in future years to speak with our own voice. That is why I believe most important that we delay no longer the search of our own measure, the testing of our poetic and artistic potential.

It was Francis Bacon, I believe, who first proposed a scientific era in which society and matter were to be studied until we finally understood the form of things. He could not have possibly guessed the difficulties which would be encountered by the generations of men living after the industrial and scientific revolutions. But it is still true that art is generated by understanding life and that by such a standard it must be the substance of our culture.

Through many centuries of slow and ebbing progress, mankind has tried with various degrees of success to adjust itself to the complex set of natural and created things which is the world in which he must live. It is a test of maturity on his part to free himself of old forms shaped by other societies, which prevent him from understanding the nature of his own struggle, and to try to grasp the structural unity of his own peculiar world. Only when free and searching will he see and

transmit to others the very meaning and spirit of his age; but it takes time and courage and, as I said before, faith to do so.

In recent years we have seen our creative men—our painters, our sculptors, designers and composers—struggling to establish new abstract systems of beauty from which planners and architects may well be inspired to reconcile the practical demands of their calling with new esthetic concepts of form organization. We have seen, in our lifetime, architecture change from a profession serving aristocratic ends to one mainly devoted to democratic endeavors, and with the help of newly developed techniques.

As an art, today it seeks integration, not dominance; it cannot be promoted by unreasonable expenditures; it has set for itself to a greater extent than before the task of transforming and redeeming function-that is, its forms are more than ever rooted in necessity and shaped for a common purpose. Therefore, its work of synthesis is becoming more and more complex, thereby forcing the architect to limit the part which he must play, while needing at the same time greater knowledge as technologist and sociologist, and a greater wisdom as an artist. As a creative man and artist, he must be able to sense an ultimate simplicity, a recurring unity behind the infinity of confusing details which is his world. To carry through this work, he must seek and accept the help of many specialists, but his most important collaborators are the sculptors and the painters who will help him as participants in discovery at the very outset of his more important jobs. Together they will find stimulus in the whole range of created things and the power to satisfy human emotions.

So, in closing, I consider St. John the Divine an important challenge to our profession and one not to be taken lightly. If we believe in man's long-range perfectibility and in his power to work his own salvation, we must face problems such as this without a feeling of inferiority, but with the best which is in us. If many people should judge that we failed, it would still be good for us to have tried. We shall certainly fail if we do not summon the courage to come forth with our own or if we fall back, as we may be tempted to do, on compromise and timidity or on superficiality.

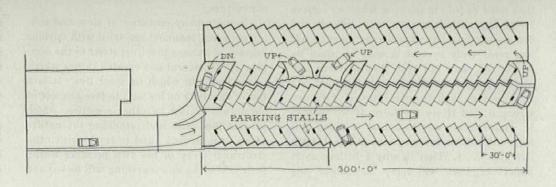
# BUILDING ENGINEERING

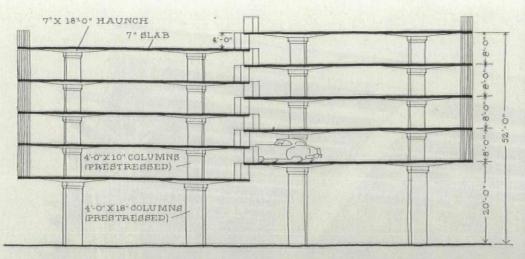
- 1. Fireproof parking decks for \$2.88 per sq. ft.
- 2. Double cantilevers for economical concrete construction
- 3. Interior load-bearing partitions for low-cost brick schools
- 4. Hurricane test for outsize windows
- 5. Package boilers for decentralized buildings
- 6. Engineering notes-brief reviews of six technical developments

Photos: Hal Rumel



Zigzag floor slabs outline car stalls and cut dead load of parking decks. Railings of continuous 1" rods 12" o.c. will stop a 4,000-lb. car traveling 20 mph; ½" rods 4" o.c. and 4' high are to restrain small children.





Transverse section through garage shows staggered parking levels

#### 1. PARKING DECKS BUILT FROM THE TOP DOWN

Prestressed columns for seismic loading and movable formwork produce self-parking garage for \$900 per car

To reduce competition from suburban stores, the Zion Cooperative Mercantile Institute in Salt Lake City has built a 542-car self-parking garage over a cramped 115' x 300' service area behind their downtown building. Because this service area had to be kept open for huge trucks, the five reinforced concrete parking decks were built from the top down, using the same formwork for each floor and winching each 54' x 60' form section down its four 52'-long concrete columns.

This unique construction proved most economical. The open decks were built for \$564,000, a cost of \$1,070 per car, or \$3.04 per sq. ft. excluding the 20'-high ground floor which the store preserves for service use. (Including ground floor parking, cost would be a low \$900 per car, or \$2.88 per sq. ft.) The garage has paid off so well in improved store sales that a 200-car addition is under consideration.

Each floor of the garage is cut longitudinally into two 55' x 300' halves, each with 60° diagonal parking on either side of a circulating driveway. Floors are 8' apart; the halves are staggered 4' apart to shorten the 8% ramps between levels.

The structure is designed to resist seismic loading. Moment distribution in the slabs was analyzed by the Presan technique of photographing loaded plastic models, for the first time obtaining *lateral* loading contours of slab moments as well as vertical loading moments.

Forty 52'-long precast columns, spaced 30' o.c., are positioned diagonally so their long 4' dimension is parallel to the direction of parking and so the columns can carry seismic loading without additional shear walls. To give added strength against lateral loading the columns are prestressed. The upper 32' of each column section is

4' x 10", with ten prestressing cables of seven ¼" wires each, anchored by button-heads held in 1" anchor plates. The lower 20' is 4' x 18" in section with ten additional prestressing cables.

Columns are temporarily braced in groups of four with steel and timber frames (photo below, right) until the upper two floors are cast. The steel frame for the formwork of each four-column, 54' x 60' bay is supported on knee braces fastened to the columns, topped by 2" x 10" wood joists and ¾" plywood sheathing. A plastic paint protects the deck from bond with the poured concrete.

In designing the actual shape of the formwork for each floor panel, the full deflection under load was calculated, again with the aid of photoreflective analysis, for both construction and finished conditions. Factors considered: 1) elastic deformation of the slab; 2) plastic deformation of the concrete during the curing; and 3) deflection of the formwork under its dead load and the weight of wet concrete during placing. Maximum calculated deflection of the slabs came to 1014". By allowing for all deflections the slabs have turned out perfectly flat-except for a 1/8" slope toward the columns left for drainage purposes. Shrinkage panels left in alternative bays successfully reduced cracks in slabs and bending of columns.

Floor slabs are 7" thick with a tapered haunch 18' square thickening to a maximum of 14" for a 5' square around each column. Slabs rest upon projections in the columns, secured by welding dowels projecting from the columns to the floor reinforcing steel. Slab concrete is a 4,000 psi mix, air-entrained to resist spalling from winter freezing, and pumped into place from a ground-level mixing plant. An average of two panels were poured each day. After curing, the formwork for each panel was lowered by eight manual winches.

Engineers: Bowen, Rule & Bowen; contractor: Jacobsen Construction Co.



Movable formwork panel, 54' x 60', is lowered 8' to next floor level by . . .

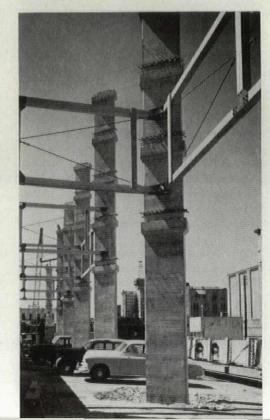


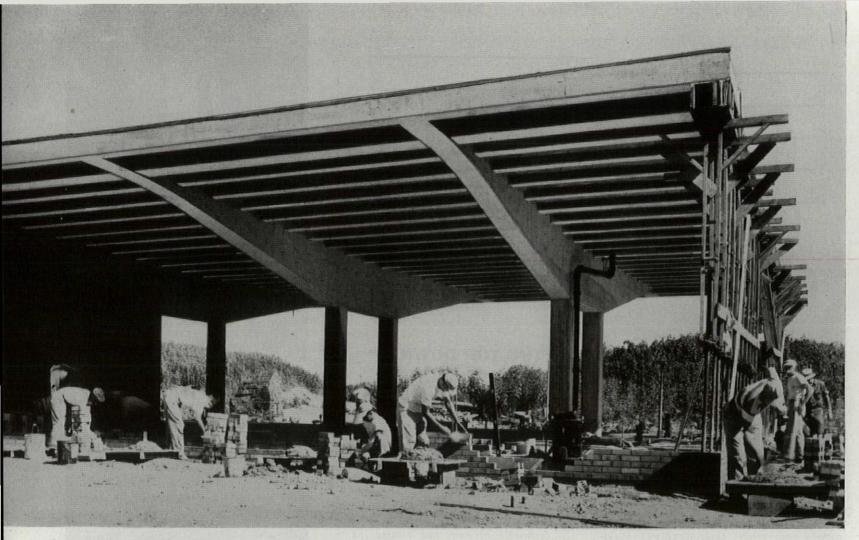
. . . manually operated winches, two to each of panel's four columns.



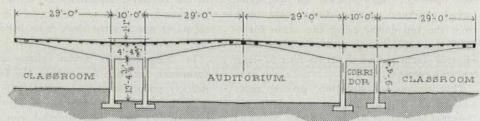
Photoreflective analysis shows reinforcing steel intensity required under loading.

Prestressed columns, 52' long, are braced until upper floors are cast.





Classroom roof projects 29' each side of corridor columns. Adjacent cantilevers (right) roof 58' wide auditorium, where floor is sunk 4' for extra height. Maximum deflection in cantilevers: 5%".



#### 2. CANTILEVERED CONCRETE FRAMING

Reinforced concrete bents atop twin columns provide fireproof school framing for \$2.35 per sq. ft. erected

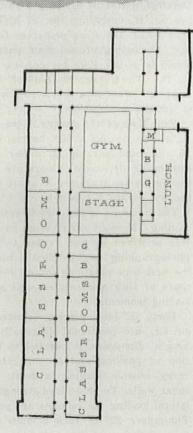
Identical reinforced concrete bents cantilevered 29' each side of pairs of columns 10' apart are being used to frame an entire school in Indianapolis. In the classroom wing these 68' bents frame the central corridor and classrooms on either side. Elsewhere, the cantilvered members are set end to end to roof a 58'-wide sunken auditorium as well as the flanking corridors and classrooms (see plan).

This design requires only two column footings for each bent and permits maximum reuse of framework. These two factors helped hold the cost of the fireproof frame to \$71,089, or \$2.35 per sq. ft., including framing, footings, columns and roof deck.

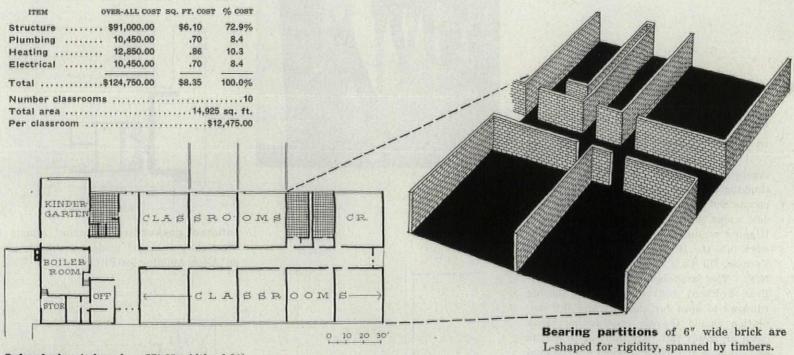
Spaced 17'-2" o.c., the 25 framing bents are

cast in place and joined by 7" x 8½" cast in place longitudinal ribs 32" apart. They in turn support 3" x 32" x 96" roofing panels topped by a standard built-up roof. The panels are of cemented wood fiber and carry design loading of 30 psf. They have a thermal insulation equal to that of 1½" cork and a noise reduction coefficient of 75%. The exposed ribs are covered with ½" fibrous insulating material to guard against condensation. Window frames slide in a steel angle set beneath the cantilevers to allow for plastic deformation.

Complete with steam heating and unit ventilators, the building cost \$451,861, or \$14.90 per sq. ft. The mechanical contract was \$102,908 (23%), and the electrical contract \$31,815 (7%). The Merle E. Sidener Elementary School was designed by Daggett, Naegele & Daggett Inc., architects, and Fink, Roberts & Petrie, consulting engineers. Contractor: Cannon Construction Co. Inc.







**School plan** is based on 27'-6" width of 31'-deep classroom as design module.



School model has wall of glass, made possible by elimination of structural piers.

#### 3. LOW-COST BRICK SCHOOL

Load-bearing L-shaped partitions of SCR brick and modular design hold total cost estimate to \$8.35 per sq. ft.

Designed to bring the advantages of brickwork to school construction at minimum cost, this demonstration building has no columns. Instead, it uses a combination of outsize, lightweight SCR brick and L-shaped bearing partitions. Along with other economies, such as deep classrooms and modular design, these devices lowered the bids on the ten-classroom model to only \$8.35 per sq. ft. (Chicago prices), complete with plumbing, heating and electrical services.

The single-story, double-loaded-corridor school is built with 6" brick interior bearing walls that are L-shaped to support one another against lateral sway. The longer leg

of the "L" runs between the 27'-6" x 31' classrooms and the shorter leg along the 11'-wide central corridor. The roof is built of 8" x 16" timber beams, 8' o.c., spanning longitudinally between classroom walls and covered with 2" V-groove wood decking; corridors are roofed simply with 3" decking spanning directly between corridor walls. Roof decks are topped with standard built-up roofing.

The 6" wide brick walls, laid in common (half) bond with ½" bed and head joints, are well able to support the building and are permitted by the national building codes up to a height of 10' (though the current trend in classrooms is toward lower ceiling heights to give a more homelike scale and to reduce the cost of construction and heating). The SCR modular brick is 11½" x 5½" x 2¼", contains ten 1%" diameter cores, weighs 8.4 lb. (57 lb. per sq. ft. of 6" wall) and has an

average compressive strength of 11,140 psi.

Physical performance of a 6" SCR brick wall is good: it will support a load of 50 tons per foot-run before failure (and failure is due to crushing, not buckling); it has a fire resistance of two hours and 32 minutes by the standard ASTM fire test (after which it successfully withstands the hose steam test); and it provides a sound reduction between classrooms of 51 db.

Cost estimate for the school (table above) includes forced hot air heating by oil-fired boilers. Hot air is supplied to each classroom through a main duct in the upper part of the corridor; return is through classroom door grilles via the corridor back to the fan room.

The school design is developed by Howard T. Fisher & Associates, architects and engineers, for the Structural Clay Products Research Foundation.

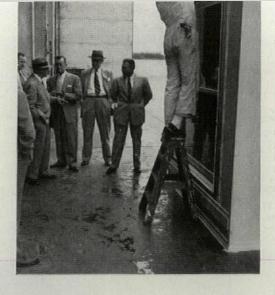
#### 4. WEATHERTIGHT WINDOWS

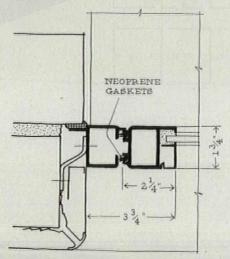
King-size aluminum windows, tested in wind machine, now in production

Competition is a healthy stimulus to new thinking about building materials. Although no one had ever fabricated an operable window wider than 5'-6", Architects Eggers & Higgins required 750 windows 6' x 6' to work into the 18' bay module for Standard Vacuum Oil Co.'s new offices in Harrison, N.Y. The architects, builders (Starrett Bros. & Eken) and owner wanted the big windows to open for cleaning and for ventilation should the air conditioning break down or power fail. Air infiltration had to be negligible and water leakage infinitesimal -two glazing problems that have dogged many window-makers and maintenance men even in standard-size units because of the glass sagging under its own weight. But three manufacturers were willing to develop, for the particular job, 6' window models, and subject them to synthetic superhurricanes. As a result, several types of large weathertight aluminum windows now are available to the whole construction industry-at \$120 to \$280 each.

Each window was mounted in a mock-up masonry wall on a test building facing a 150-hp Wright aircraft engine 20' away. Outsize, the window assemblies had to be set in a special wall extension 1' closer to the engine than usual. Storming up winds of 100 mph, the engine with its clipped triple blade propellor topped the ten-minute gale with two additional minutes of 80 to 120 mph gusts. To simulate a 4" rainfall accompanying such a blow, water was added at 20 gpm to the air blast. Measured at 100 mph, the air infiltration of single-hung models amounted to 0.36 cfm per lin. ft. of sash perimeter, and reversible units ranged from zero to 0.0727. (Standard of the Aluminum Window Manufacturers Assn. for a monumental 5' window is 0.5 cfm at 25 mph.) Under the extremely severe test conditions, water leakage for five of the units ranged from zero to 1/2 teaspoon per hour. Somewhat modified models of the two others which leaked slightly on the test proved to be watertight on a second trial last month.

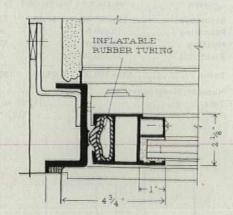
**Hurricane gusts** of 150 hp aircraft engine were taken in stride by big windows which met stringent infiltration standards set up by an architect-builder-owner team.



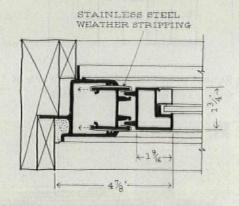


Neoprene seals Reynold's pivoted window.

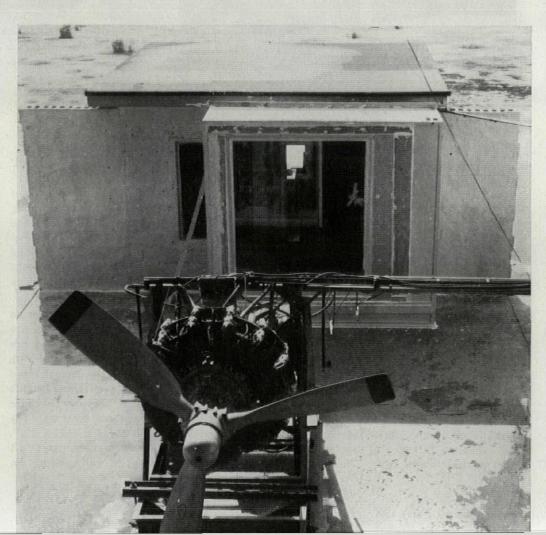
**Test window** in new 6' x 6' dimension was mounted on special extension of test chamber because regular wall opening was designed for conventional, smaller units.



Inflated gasket weatherstrips Adams & Westlake's enlarged model of window used on Alcoa building in Pittsburgh.



Stainless steel is weather protection in reversible retractable unit of General Bronze.



# 5. PACKAGE BOILERS VS. CENTRAL HEATING PLANTS

Eleven residential boilers provide hot water heating for suburban school

Installation of 11 residential-type package boilers has proved cheaper than a single commercial boiler plant at the 700-student Worcester County high school in Maryland. And, although they use more expensive fuel oil, they may prove cheaper to operate because of the school's widely separated wings.

Each of the two classroom wings and the gymnasium wing has a separate boiler room with a battery of three or four 450,000 btu-hour capacity oil-fired boilers. They cost a total of \$17,300 installed compared with a bid price of \$21,400 for an equivalent commercial boiler installation.

Other advantages of the package boiler system:

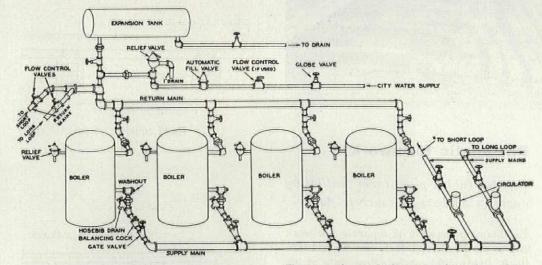
- ▶ The architects believe that zoned control is easier since each wing of the school is separately heated. In the evenings when only a part of the school is in use for special functions, only the boilers serving that part need be in full operation.
- The thermostatically controlled boilers in each bank start up individually as the demand for heat increases and shut down individually as it decreases. On a mild day only one boiler in each wing might be needed.
- ▶ The residential boilers are small, 27½" wide, 53" high, and weigh only 1,000 lb. each. They are therefore easier to install than the larger commercial units and take up less floor space—a total of 200 sq. ft. vs. 500 sq. ft. for equivalent commercial boilers.
- ▶ Outside piping is eliminated because there is a boiler room in each wing.
- From a cold start the small residential boilers provide hot water in 5 to 7 minutes, while most big boilers take 20 to 30 minutes.

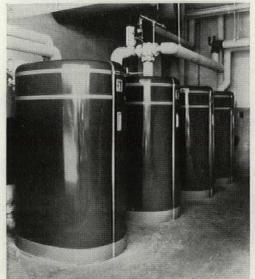
Disadvantages. Fuel costs of residential boiler installations are likely to be higher than those of commercial-type installations. At the Worcester County high school, fuel costs for the first year's heating season came to \$5,658 for 48,942 gal. of No. 2 grade oil. This oil costs 111/2¢ per gal. compared with 61/2¢ for No. 6 grade oil used in commercial boiler installations. Assuming the same volume of oil consumption, the annual fuel savings would be \$3,180 in favor of the commercial boilers. Furthermore, these circulating water-tube, firebox-type boilers are thermodynamically more efficient than the more simple residential flash-type boiler, and the calorific value of the heavier No. 6 oil is 81/2% higher than that of No. 2 oil (152,000 btu. vs. 140,000 btu. per gal.). The commercial boilers should therefore use less fuel.

The Worcester County high school is designed by Finney-Wolcott & Associates, architects; Henry Lee Dodson is the mechanical engineer.



Separate classroom wings of spacious suburban school are heated by small residential boilers, permitting use of short, inexpensive chimneys that do not mar roof lines.

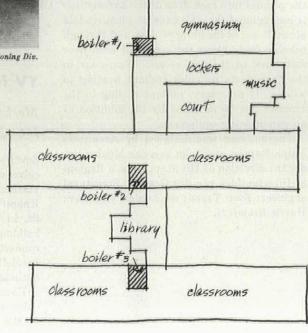




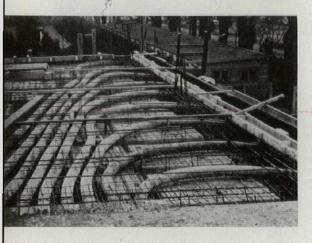
General Electric Co., Air Conditioning Div.

Four package boilers used in first classroom wing are connected in parallel, allowing one or all boilers to be in operation depending on heat requirements. Boilers are easily installed as they are small, 53" high, and light, 1,000 lb. However, piping is necessarily more complex than for single commercial boiler installation.

Three boiler rooms are centrally located in each wing to simplify piping layouts Zoned control is easier with package boilers in this school since each wing is separately zoned.



#### 4. ENGINEERING NOTES



#### **Pneumatic formwork**

Inflated rubber pipes form ventilating ducts in Embassy's concrete floors

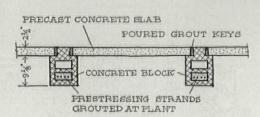
To eliminate the cost of separate ductwork and to save concrete, ducts are formed into the 8" lightweight concrete floor slabs of the US Embassy building in Stockholm. The ducts are made with 4" diameter flexible rubber piping laid between the reinforcing steel in the slabs. The pipes are inflated to an air pressure of about 15 lb. to maintain their shape while concrete is poured and cured around them, after which the pipes are deflated and withdrawn to leave permanent, smooth, ventilating ducts.

The four-story building is ventilated by washed and heated air supplied through riser ducts in the service core and central distribution plenums between floor joists. Ducts at the side of the floor slabs lead the supply air to outlets in the spandrel beams under each window. Balanced air flow is achieved by means of adjustable dampers leading from the plenum into each floor duct. Exhaust air is recirculated through exhaust plenums laid about 7' o.c. in the hung ceiling, and through tubular ducts along the center of each floor slab back to the fan rooms. Warm air in the floor ducts provides radiant heating in winter. If necessary, radiant cooling in the summer can be provided by the addition of air-conditioning equipment.

The building was designed by Architects Ralph Rapson and John van der Meulen under the direction of US State Dept.'s Regional Director Ides van der Gracht. Structural engineer: Sven Tyren; mechanical engineer: Harry Bremfors.



#### Prestressed beams of concrete block



Roof consists of precast slabs

PRESTRESSING STRANDS
GROUTED AT PLANT

Floor has concrete topping

Pretensioned block construction saves 20¢ per sq. ft. in school building

A two-story, 74′ x 122′ high school at Rexburg, Idaho, is framed with pretensioned, prefabricated concrete block beams spanning 30′ between masonry bearing walls. These beams carry precast filler blocks and are made continuous by placing reinforcing steel in a 2″ topping slab cast over the blocks. Similar beams carry precast roof slabs. This fireproof construction was built for \$1 per sq. ft. erected, 20¢ per sq. ft. less than the local cost of nonfireproof steel joist construction.

The pretensioned beams are made by stringing machine-made, 4,000 psi hollow concrete blocks on %" diameter high tensile steel wires, stretching the wires to 140,000 psi and bonding them into place with cement grout. After the grout has cured, the tensioned wires are released, transmitting the prestressing force to the beam through bond and thus eliminating the need for mechanical anchorages at the beam ends. To speed production, two beams are prefabricated end to end, tensioned and grouted simultaneously and cut apart when cured.

The Rexburg high school was built for \$9.70 per sq. ft, including services and equipment. Architect: Norman J. Hamill. Structural engineer: Ross H. Bryan.

#### TV for office tenants

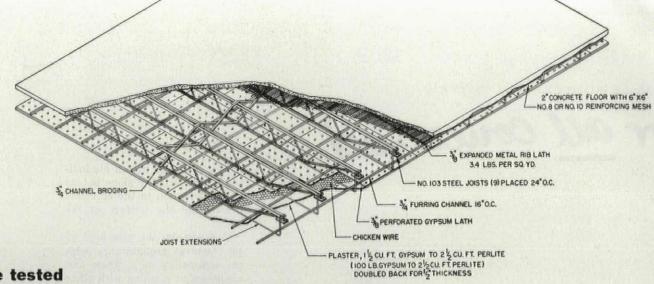
Master antennas improve reception for office building tenants

Seven special antennas, each designed to receive one of New York's seven television stations, are built on the roof of Webb & Knapp's large new office building on 34th St. in New York. Tenants of the 27-story building can switch their television sets to connect with each high-duty antenna that is specially located and adjusted to receive optimum signals from the station selected.

Each antenna is connected by coaxial cable to a seven-channel amplifier located in the elevator machinery penthouse. The

boosted signals are then transmitted by a coaxial cable riser to all 27 floors of the building. Connections between individual television sets and the floor take-offs are made by the building's service staff with only minor modifications and adjustments to the tenants' sets.

Installed cost of the system including antennas and amplifier came to about \$8,000. The service is free to tenants except for a nominal installation fee. The building is designed by Rene C. Brugnoni and Rudolf C. P. Boehler, architects. The RCA master antenna system is engineered by Commercial Radio Sound Corp.



#### Steel floors fire tested

Wire reinforcing of plaster ceilings improves fire endurance of steel joists

Because unprotected steel has little fire resistance, the load-bearing capacity of a thin floor slab on open-web steel joists would be short-lived in a fire. By protecting the joists with a plaster ceiling the fire endurance may be improved—until the plaster is baked dry, cracks and falls away.

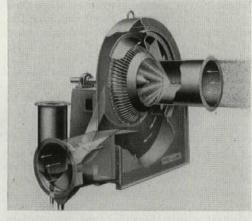
The National Bureau of Standards has now completed 18 standard ASTM fire tests of composite floors constructed of 2" reinforced concrete slabs atop No. 103 steel joists laid 2' o.c. To the bottom chords were attached steel furring channels with lightweight gypsum-perlite plaster on perforated gypsum lath supported by wire sheet metal clips. Conclusions of the study:

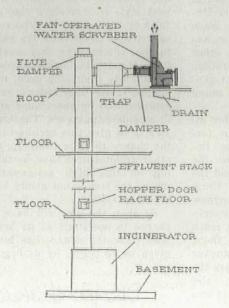
▶ Improved fire resistance up to 1¾ hours can be obtained by increasing plaster thickness up to a maximum of 1". Thicker plaster gives no additional fire protection.

Additional wire reinforcement in the plaster ceiling will increase fire resistance up to 3½ hours (with diagonal wiring laid 2′ o.c.) and up to 4½ hours with hexagonal mesh "chicken-wire" (illustrated in the accompanying diagram).



American Air Filter Co.





**Dirt-free incinerators** 

Water scrubbers remove fly ash and soot from incinerator smoke

The average rubbish output per day in Manhattan is 2.33 lb. per person. Of this, 1.81 lb. goes up in smoke from apartment-house incinerators; only 0.52 lb. is collected by the sanitation department. The fly ash, soot and dust ejected forms a substantial part of the 176 tons of dirt that settles on each square mile of Manhattan every year.

To reduce this dirt problem, the New York Housing Authority, after a two-year study of the problem, is installing fan-operated water scrubber air-cleaning equipment on the roofs of all its new housing projects. The equipment consists of a centrifugal fan exhauster that collects and drains off fly ash, dust and soot by means of a fine water spray directed on a closely vaned fan. This exhauster removes about 75% of all the solids in the effluent gases. Installed cost on the first 14-story, 150-apartment project: about \$5,000.

The Authority also tested glass-cloth filters, but these became plugged with solidified grease during operation in cold weather. Wet collectors give no such trouble, and the water does not freeze (provided exposed water supply lines are adequately drained and protected).

Colored aluminum

Electrolytic dyes create blue and gold facade for Cincinnati office building

Anodized aluminum, coated with an electrolytically produced 0.0001"-thick weather resistant surface of aluminum oxide, is now being colored by introducing a pigment into the sulfuric acid electroplating tank. This pigment permeates the porous oxide surface and is fixed by subsequent dipping in a solution of nickel acetate. Various colors are available-gold, blues, grays, yellows and brown. The technique was used to produce blue and gold colored vertical panels on the outside walls of Alcoa's new office building in Cincinnati. Used on fluted extruded aluminum panels 4' wide and 18' high, the colored aluminum cost only 15¢ per sq. ft. more than the plain anodized metal. The building has gold colored spandrel panels on the front and blue colored panels on the rear. Architect: Paul Schnell.

# for all concerned

#### THE NEW ASSIGNMENT FOR BUILDING

A new kind of work is in prospect for everybody connected with building. It means that the job of architect is rapidly changing, the job of realtor is rapidly changing and so is the job of

lender, builder, owner.

The new kind of work arises out of the joint action of communities. Our cities are on the make. From all across the US. and from abroad too, comes news of organized effort toward the renewal of cities. Big cities, small ones, metropolitan ones, suburban ones, tight ones, sprawling ones, are organizing themselves under the leadership of their businessmen, their professional men, their intelligent labor leaders. News comes in so fast of added cities planning for action that keeping up with them is a race. City renewal is becoming the major building fact of 1955.

The leadership may lie in one man or it may lie in a civic group. In any event it comes from those with the greatest stake in the future of the city. And no matter who starts this new city movement, the significant fact about it is that widely different interests and talents are enlisted which in the past have sometimes been in conflict. Interaction is the key. Big downtown merchants are beginning to find their economic health dependent on that of small downtown merchants, and both of them on access and parking. Office-building owners and managers find their economic health dependent on good entertainment facilities, hotels, stores. It is found that parking cannot be rationally managed apart from a sensible highway program, nor can a sensible highway program apart from a mass-transit system, which itself may provide parking terminals for private cars so passengers can conveniently change over. It is found also that a healthy city core depends on good downtown residential building to replace slums no less than it depends on the cleanliness of new industrial fuels. Other interrelationships are too numerous to mention.

The new kind of joint action is symbolized in voluntary civic associations such as Pittsburgh's Alleghany Conference, the Civic Progress Inc. group of St. Louis, the Greater Milwaukee Committee, and dozens like them. Sometimes the focal element is the planning commission itself, as in Philadelphia where Banker Hopkinson as planning commissioner has been rallying the forces of progress no matter which party runs the city administrations. and is aided by his director of planning, Ed Bacon. Another such energetic man is Cleveland's Ernest Bohn; there are many more. Sometimes the initiative comes from an imaginative developer such as Stevens or Zeckendorf.

In every successful instance there has been initiation by somebody who is aware of the broader need, and then there has been the process of quietly obtaining a minimum of controversy and a maximum of voluntary agreement. The symbol of progress can almost be said to be the conference table.

Meanwhile buildings continue to be built one by one; managed, maintained, occupied, renovated one by one, of course; and a good individual operation is still indispensable to general economic health and survival. Yet anyone in the building industry who thinks only of his one building is henceforth likely to grow into a smaller operator as well as a little man. Progress will pass him by and roll over him, and what benefits accrue to him will be owing really to others, so he can have small pride in them. The way our cities are starting to rebuild, the actual standing in his community of architect and owner, realtor and banker, merchant and traffic man will depend not on his individual productivity alone but on his contribution to the economic health and the welfare of the whole

Accordingly, the new kind of job involves acquaintance with the community as a whole and adeptness at meshing with other enterprise to multiply the benefits. It is a good sign that both the National Association of Building Owners & Managers and the AIA will devote their June conventions to community problems. The essentials of citywide planning and city-wide operations have become the most practical of all studies.

#### TEST OF FAITH

How much longer will the architectural profession delay in picking up the challenge of the Cathedral of St. John the Di-

This is the challenge of finishing a major religious edifice in contemporary architecture. Dean Belluschi of MIT has called it the most serious challenge modern architecture as such has faced in many years. (His full speech before the Architectural League in New York is reported on p. 162.) Eloquently Belluschi asks whether our materialistic age can create a symbolism to put alongside the Gothic forms that we can no longer build but that have expressed man's highest aspirations.

Half a year has passed since the problem was formulated in this magazine with the gracious permission of the Cathedral authorities (AF, Dec. '54). Until now the only response made in full faith and enthusiasm has come from students-in other words from the next generation. The silence of the present generation is beginning to sound like thunder.

Many are the excuses for inaction that have been put forward. One is that the Romanesque choir given to the Cathedral by La Farge and the Gothic nave given it by Cram were not genuine styles anyhow and consequently do not deserve our own efforts, ever so much more genuine, alongside them. This is, however, a sorry answer with which to appear before the congregation. Whatever else could be said of La Farge and Cram, both were passionately sincere men of their own day, and the building they did represented the prevailing conviction of an age that gladly put vast funds at their disposal.

No, today's problem cannot be put off by a debate on whether or not we approve of these dead men. Since Cram's day, architecture has gone through great trials and its most earnest practitioners have achieved what might be called a new religion of architecture. But this has not yet been fully accepted by the public as the right new architecture of religion.

The first necessary step is to convince the public that no age can properly bring to the altar gifts not its own. The notion that religious architecture is a pawnshop where one can handily borrow some appropriate past style is scarcely a sign of faith or high devotion. The second step is to convince the public that the building they accept from Monday through Saturday is basically something good, not evil, no matter how badly it gets compromised by short aims and ill-considered purposes. The third step is to give this architecture the chance to raise itself up, as other architectures have, by taking on this high assignment, where the test is not utility but high expression.

So then the age will have a chance to see itself at its best. And since the chance has been given us to begin, let us begin.

Douglas Haskell



The Standard Oil Company of Ohio, Cleveland, Ohio. Architects: Garfield, Harris, Robinson and Schafer

# Sohio transforms garage into modern offices made permanently efficient with Mills Walls

Faced with the necessity of expansion in office space, The Standard Oil Company of Ohio converted a downtown Cleveland garage building into attractive, efficient, modern offices with interiors of Mills Movable Metal Walls. While other remodeling work on the building was in progress the interiors were fabricated at the Mills factory, permitting Sohio to take early occupancy of its new offices.

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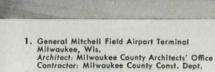
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Central Office Bldg., Dept. of Employment
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Architect: Calif. State Dept. of Public Wks.,
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Contractor: George A. Fuller Co.

General Telephone Co., Santa Monica, Calif.
Architect: Albert C. Martin & Assoc.
Contractor: George A. Fuller Co.

City. County Blda. Detroit Mich.

Contractor: George A. Fuller Co.
4. City-County Bldg., Detroit, Mich.
Architect: Harley, Ellington & Day
Contractor: Bryant & Detwiler
5. Ford Motor Administration Bldg.
San Jose, Calif.
Architect: Albert Kahn Associated Architects
& Engineers, Inc.
Contractor: J. H. Pomeroy
6. State Office Bldg., Pittsburgh, Pa.
Architect: Altenhof & Bown
Contractor: Navarro Corp.
7. Office Building for the Norfolk Division

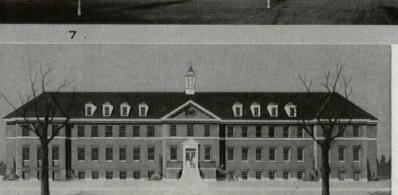
7. Office Building for the Norfolk Division of The Texas Co., Norfolk, Va. Architect: E. Bradford Tazewell Contractor: Doyle & Russell

Standard-Thompson Co., Vandalia, O. Architect: Lorenz & Williams Contractor: Maxon Construction Co.

Pennsylvania Thresherman & Farmers Insurance Co., Harrisburg, Pa. Architect: Edmund G. Good Contractor: Ritter Brothers
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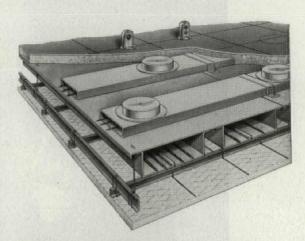
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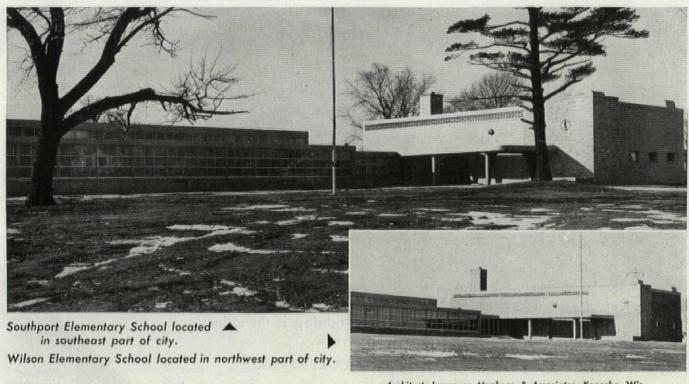
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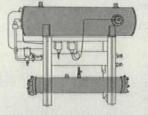
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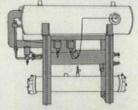
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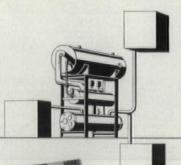


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You asked for a smaller, more compact cabinet. And the new UniTrane's got it! The smallest cabinet in UniTrane history. A scant 24 sq. ft. floor area for the smallest unit. All models are surprisingly compact . . . save space, allow greater design freedom.

You asked for a new "slim look." And the new Uni-Trane's got it! The vertical model over-all depth— 9 inches slim! Or 25% slimmer than previous models. Hugs the wall—for clean, modern room design.

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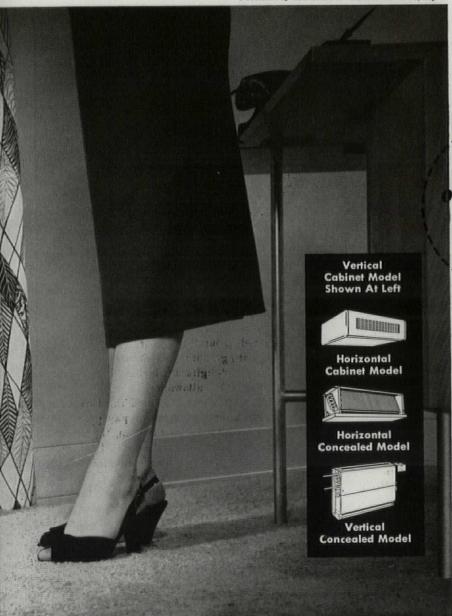
You asked for even greater flexibility. And the new Uni-Trane's got it! Round-edge end panels on cabinet model may be removed to facilitate butting unit to shelving. Rubber seal bonds unit to wall . . . gives free-standing models that built-in look. And the 4 new models—each in 4 sizes—that means you fit the air conditioning to the building . . . not the building to the air conditioning!

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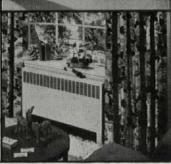
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Field and maintenance painting are unnecessary with either the aluminum or the porcelain enameled decking. Both give a highly attractive ceiling that lasts for years, contributes to lighting efficiency. Aluminum deck has thermal insulation value.

The highly corrosive-resistant porcelain enameled steel decking is double coated with chemically inert porcelain enamel. It is designed for use where moisture, acids, etc., damage ordinary decks. Also excellent in dairies and other places where its gleaming look is desirable.



Accessories accommodated without cutting load-bearing members. The photo above shows how sump pans, ventilator bases, and other accessories fit into place with no cutting of subpurlins or panels and without special cross bracing.

**Exceptional strength** of these decks is shown in Pittsburgh Testing Laboratory reports. They will be promptly submitted on request.

#### Investigate now!

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#### **MORTGAGES**

Continued from p. 129

Here the crucial crossing of the depreciation and debt service lines occurs seven years earlier, the amount of tax-free money is reduced, the corporate income tax eats more rapidly into residual income and, toward the end of the mortgage period, comes perilously near taking the whole amount.

At least one conclusion may be drawn from these two graphs: the longer the period of amortization (other conditions remaining the same), the greater will be the amount that can be taken out of the corporation tax-free and the greater also will be the amount available each year for dividends.

This conclusion may do violence to the principles of prudence and frugality, but it stands nevertheless. It may be argued that the investor should consider that the shorter mortgage maturity brings him sooner to the time when the property will be debt-free and all the income not taken by taxes will be his. The fact is, however, that the investor is not likely to consider this seriously. His concern is with how to live through the period of the mortgage, not with how comfortable he may be afterward—in case he should live through it. And his chances of survival are likely to appear better with a longer than with a shorter maturity.

#### Other depreciation formulas

What happens when the equity investor chooses either of the two other depreciation formulas specifically provided for in the Internal Revenue Act is shown on the other two sets of graphs.

In both these cases, the amount of income obtainable in the form of tax-free return of capital is enormously increased. The amount of income payable as ordinary dividends (and hence subject to individual income tax in the hands of the recipient) is reduced. The point at which the investor must pay taxes on the part of income (marked by the crossing of the 30-year amortization line by the depreciation line) is about the same in the second case as in the first, but is deferred about three years in the third case, indicating another advantage in the sum-of-the-years'-digits method of calculating the depreciation allowance.

In both the second and third cases, however, after amortization payments become in part exposed to taxation, the amount of income after corporate taxes that is available for dividends declines much more rapidly than it does in the first case where the constant-rate depreciation formula is used. This aspect of the investment becomes very critical if the period for amortizing the loan is shortened-again demonstrating that, on this consideration at least, the longer the corporation stays in debt the better it may be for the stockholders. In fact, an attempt to get out of debt quickly, as shown in the second and third 25-year graphs, might lead to disaster.

#### The investor's dilemma

The investor is faced with two possibilities, heither of which may seem attractive:

1. He may live with the property to the prospective happy day when the mortgage is paid off, taking only a meager dividend or perhaps putting in new capital to cover taxes. The latter expedient, in particular, could only be justified by the unlikely possibility of future capital gain.

2. He could apply part or all of the taxfree income of the early years to prepayment on the mortgage, thus bringing the amortization line more closely parallel with the depreciation line. The same result could be obtained by changing the loan pattern from one of a constant periodic payment for interest and amortization combined to one where the amortization payment is constant and the interest payment, and consequently the combined charges, decline year by year.

These choices, however, assume that the venture investor is in for the long pull and is willing to forego the quick recapture of his capital for reinvestment in new ventures.

This is a farfetched assumption.

What then does he do? He might, if the going gets really tough, simply decide to let the mortgagee take over, on the theory that, having got back his capital and a consider-able amount in addition, the rest of the game is not worth the candle. Such an eventuality need cause the mortgagee little or no distress, since, with the loan paid down to a considerable extent, he would likely be in a position to sell the property at a favorable price, take a purchase money mortgage on it and await future eventualities.

The investor, however, would be unlikely to follow this course, since it would reflect on his business standing, especially when it came to negotiating other transactions. Instead he will probably try to sell at the point where he has obtained the maximum possible net income from the property and thenceforward faces a less and less satis-

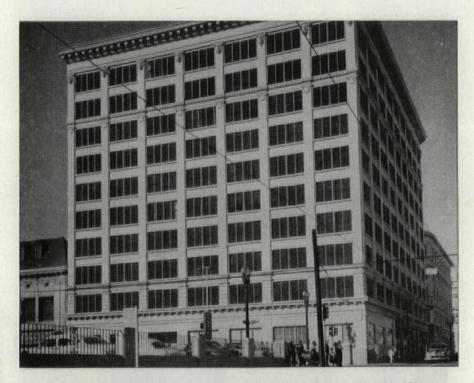
factory income situation.

The estimation of this

The estimation of this point is too complicated to go into here. Moreover, the timing will vary widely with the investor's individual surtax position, the possibilities of capital gain or loss, the amount of tax to be encountered at sale, the price a second investor would pay and other considerations.

#### The second investor

The assumption that the property might be advantageously sold implies finding a sec-ond investor whose motivation may be dif-ferent from the first or who may establish an investment and tax status not available to the original owner. In any such transfer the advice of an expert is needed to minimize the tax impact on the seller. It is safe to say, however, that after a three-year continued on p. 190



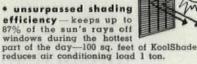
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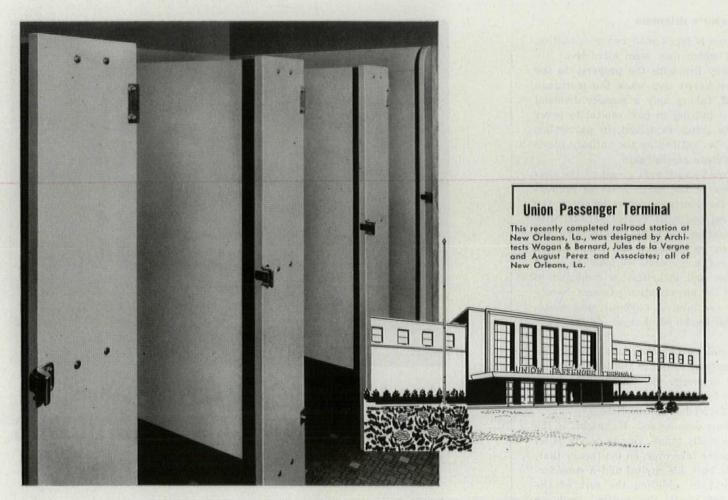
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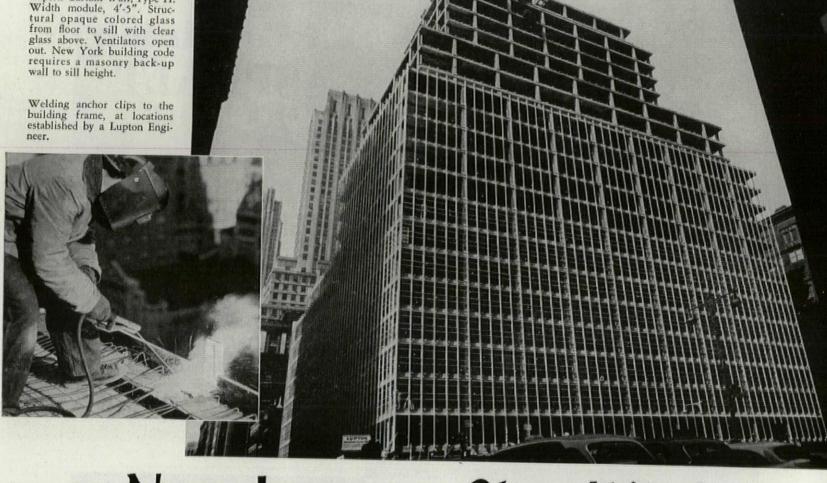
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300 PARK AVENUE, NEW 300 PARK AVENUE, NEW YORK. Arch: Emery Roth & Sons. Contr: Uris Brothers. Lupton Curtain-Wall, Type H. Width module, 4'-5". Structural opaque colored glass from floor to sill with clear glass above. Ventilators open out. New York building code requires a masonry back-up



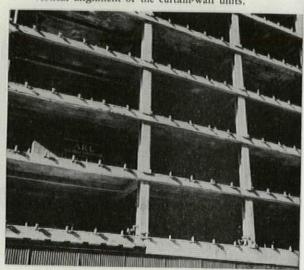
## New Lupton Simplified Curtain-Wall System

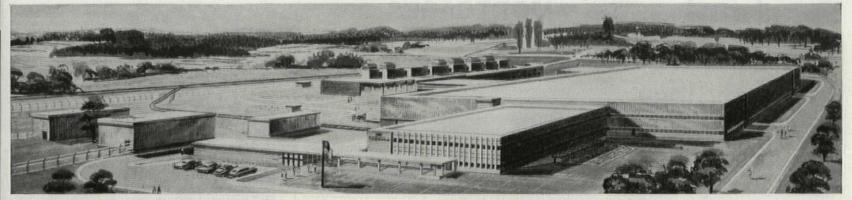
Lupton-Engineered. Lupton-Made . . . Lupton-Installed

NEW JERSEY STATE TEACHERS' COLLEGE, MONTCLAIR, N. J. (2 bldgs.) Arch: Emil Schmidlin. Contr: Martin Infante Co., Inc., Lodi, N. J. Lupton Curtain-Wall System, Type H. Width modules 3'-9" & 4'-1". Fixed glass and projected-in ventilators. Opaque areas are ½" thick embossed, fluted aluminum, alumilited. Special features: Heavy aluminum sub-



Exterior view of building frame showing anchor clips in position. Clips provide for horizontal and vertical alignment of the curtain-wall units.





FAIRCHILD ENGINE & AIRCRAFT COMPANY, DEER PARK, LONG ISLAND, N. Y. (3 bldgs.) The Austin Company, Designers and Builders. Lupton Curtain-Wall System, Type H in office building. Width module

5'-0". Fixed glass, no ventilators. Opaque areas are ½" embossed fluted aluminum sheet with 1" thick insulation and galvanized steel sheet on inside. Lupton steel industrial windows in factory.

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This new exterior wall system offers new flexibility of design, aesthetic appeal and decided economies.

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Through standardized factory operations the Lupton System of construction offers custom-designed units at reduced costs. The design elements and construction features incorporate Lupton's more than 40 years experience in the production of metal windows. Now, you can specify type of fenestration, choice of wall unit materials, texture and color - and get what you specify. Your problems are simplified because Lupton Curtain-Walls are manufactured, shipped and installed by one responsible organization.

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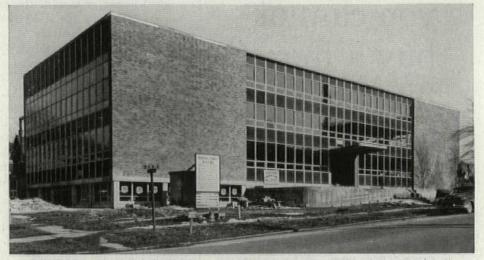
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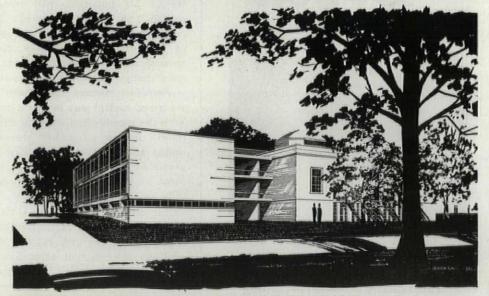
KANSAS CITY

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NIAGARA COUNTY BUILDING, NIAGARA FALLS, N. Y. Arch: Charles F. Obenhack, Contr: Walter S. Johnson Building Co. Lupton Curtain-Wall System, Type G. Width module, 4'-0". Double glazing, 1" thick fixed lights, ½" thick in ventilators. Ventilators open in. Opaque areas are double panel construction. Outside face is greenblack porcelain enamel laminated with honeycomb core, galvanized back. Inside face is galvanized steel sheet covering 1" thick insulation. Back-up wall to sill height.



SCHOOL OF DESIGN, NORTH CAROLINA STATE COLLEGE, RALEIGH, N. C. Arch: F. Carter Williams. Contr: Dickerson, Inc. Lupton Curtain-Wall System, Type H. Width module, 5'-8". Fixed glass and ventilators are inside bead glazed. Ventilators open out. Spandrels and column faces are covered by aluminum sheet .102" thick,

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#### **MORTGAGES**

Continued from p. 185

period (following the rule on collapsible corporations) the stockholders of the original corporation can usually sell out with the assurance of having their profit on the sale taxed only as a capital gain and of being burdened with only a single capital gains tax. In this illustrative case it will be assumed that this can be done, so that our attention may be given to the position of the second investor.

First, he must recognize that the accelerated depreciation plans provided in the 1954 act do not apply to him. As other than the original owner or user of the property, he has available only the straight-line method for calculating depreciation. This obviously means that he will have less opportunity for a quick recapture of capital from tax-free income than his predecessor. Hence he has to be more concerned with the long-range earning prospects of the property than the original investor. He will take into account the fact that the risks of construction and establishment are behind and that a tenable level of income has been attained - that, in other words, he is dealing with an asset of more or less proved value.

Such investors exist, although they are likely to be of a somewhat different class from those who are willing to take wide chances and to incur heavy risks in the hope of a quick return. Nevertheless, the differences in motivation can be easily exaggerated by the theorist. Any canny second investor, despite the going-concern character of his purchase, will recognize that serious risk has by no means been eliminated and that ahead are still the hazards of increased property taxes, rising maintenance and modernization costs, neighborhood change and uncertain income.

Therefore, though the chance of a quick return of capital may be less a consideration with the second than with the first investor, it will not be altogether absent from his mind; and he may be equally anxious to obtain as high an income leverage on investment as possible, especially in early years.

In acquiring the property, the second investor consequently will seek the following objectives. He will, of course, want as low a price as he can get. He will not want to continue the original corporation with its dissipated depreciation allowance, but will create a new one with a new capital base set in relation to the purchase price. He will ordinarily not be interested in carrying the existing, partially amortized mortgage but will want a new loan as high in relation to the purchase price as the earning prospects and the accommodating art of appraisal may let him obtain.

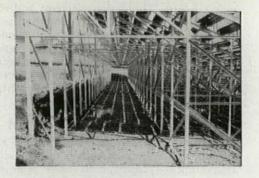
Next month we will see how governmental policies create obstacles or inducements to investment and how they help to shape the motivations and objectives of investors.



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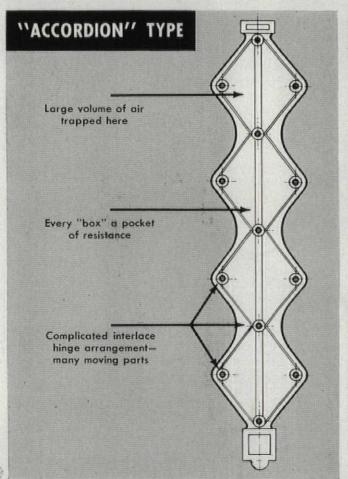
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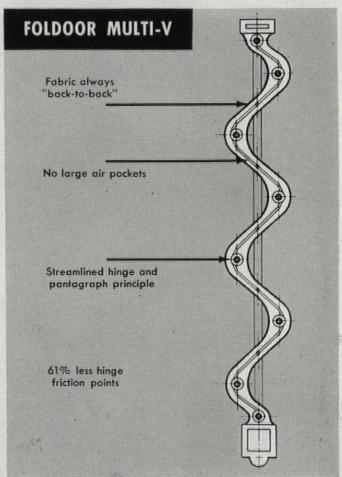
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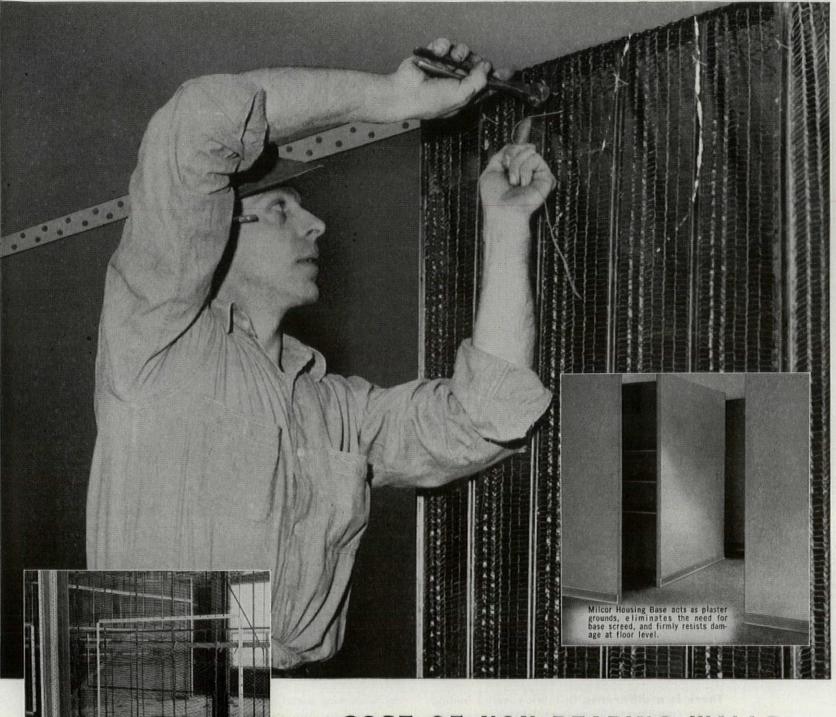
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For further information see: Sweet's Catalog; Foldoor installing distributors in every principal city; or Holcomb & Hoke Mfg. Co., Inc., 1545 Van Buren St., Indianapolis 7, Indiana. IN CANADA: Foldoor of Canada, Montreal 26.





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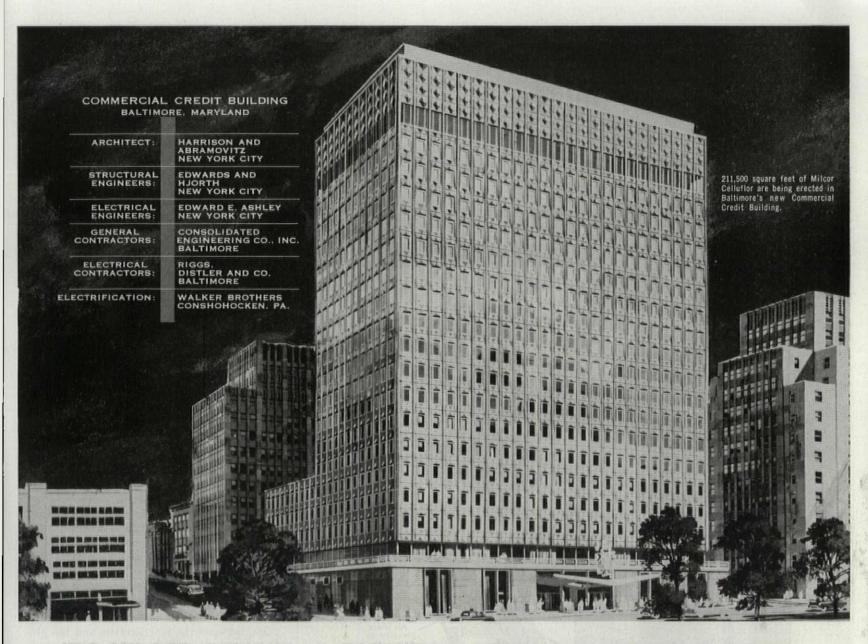
Milcor studless, 2-inch, metal-lath-andplaster construction offers the same fireresistance provided by 2-inch walls with channel reinforcement. Light weight and efficient sound insulation are other important characteristics.

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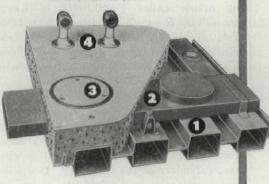
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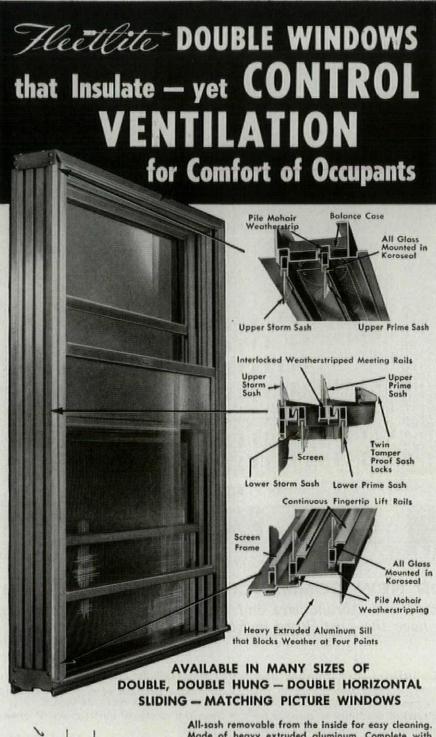
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#### **EXCERPTS**

Continued from p. 155

Vanderbilt, a new style of American architecture was born. It was called "Adaptation," and as an architect named Joy Wheeler Dow, who called Ruskin "an old fogy," said: "It was as if some angel had descended in the night while Hunt slept, and had whispered one magic word with which he was ever after to immortalize himself, namely 'Adaptation!'" Adaptation to the men who looked up to Hunt as a great innovator was to become a new kind of honesty, an honesty that was based on the honest use of all that was great from past styles. But there were dissenting voices, and the most intelligent of them was Louis Sullivan. You will remember his comment about Hunt's house for Vanderbilt. "Must I show you this French château," he said, "this little château de Blois, on this street corner, here in New York, and still you do not laugh? . . . Have you no sense of humor, no sense of pathos?" Another architect of the day, Charles F. McKim, thought differently; he often walked up Fifth Ave. in the evening to look at Hunt's building late at night because, he said, he slept better after feasting his eyes on it.

In our own time, of course, we have had still another kind of honesty in architecture, and another kind of battle of the styles. The fight has been between the defenders of Adaptation and those who have wanted to clear the decks for new kinds of materials and for a new era of man. It has been called a number of things-the dispute between the traditionalists and the functionalists, between the reactionaries and the progressives, the defenders of the past and the modernists. As a battle it was an excellent one with large philosophical and social questions at stake. The fight did not receive a great deal of publicity until the days of the depression when there was more time to argue about architecture than there was money to build it. It would be most impossible now to get into the kinds of arguments one used to find almost routine in those days. Even as late as 1946 I wrote a rather teasing article called "Architects in Glass Houses" for Harper's Magazine. I teased the architects of the new faith for being doctrinaire, but said in conclusion that if I were to build a house I would want it in the idiom of my own time. An interesting thing happened. I was lambasted with letters complaining of my philistinism. But the letters did not come from architects, who mostly seemed amused at my remarks. They came from editors and writers and critics who were defenders of the new faith. One telegram came to Hurper's from the editors of an architectural magazine. [Not this one-ED.] It said that my article was "biased, inaccurate and against the public interest." For a moment I enjoyed the sensation of being a public enemy without portfolio.

continued on p. 198



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It is flooring made of BAKELITE Brand Vinyl Resins. It is lustrous and rich in bright color. And five, ten and more years from now it can still be just as beautiful. That's because time and traffic do not take their toll with this type of flooring.

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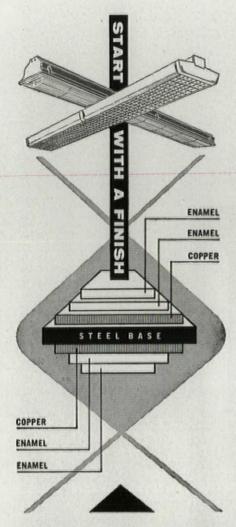


DETAILS FROM THE DUN AND BRADSTREET BUILDING, NEW YORK CITY . REINHARD, HOFMEISTER, AND WALQUIST, ARCHITECTS . PHOTO: TOM CAFFREY, GLOBE PHOTOS

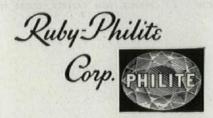
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#### **EXCERPTS**

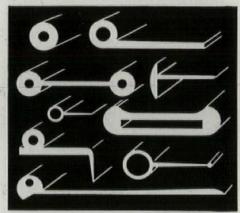
Continued from p. 194

I doubt very much if one could get into such fights about architecture today. It seems a pity. It always makes me uneasy about the arts when artists begin to agree about what the truth is. I like it better when they choose up sides, when they run in packs and have a vision which is to them the only true vision, whether their clients or patrons will let them realize it or not. It worries me to see modified modern and modernized tradition as something like a norm which is generally accepted by the profession of architecture. The old-line moderns, if I may use that phrase, seem to me, a layman, to be stuck with the clichés with which they so astonished us a couple of decades ago, and the traditionalists have given a little here and a little there, a cornice here and a pediment there, and have come up with a gentlemanly new look. To a considerable extent, even the vocabulary of argument is no longer lively. It is hard now to think what would be fighting words among architects. Don't ask me what I want a new architecture to be; that is not my business. I am uncomfortable only because I feel there must be a fight going on somewhere in architecture and I can't find it. Even Frank Lloyd Wright hasn't said anything outrageous recently, except about his Wisconsin taxes. The last I heard he was living in the Hotel Plaza, a building designed by Henry J. Hardenberg around 1905.

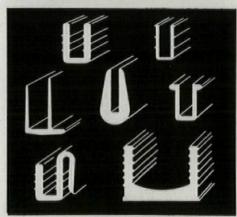
There must be some way of explaining this peace, this eye of the hurricane, in which architecture now finds itself. The winds of controversy surely have not blown themselves out; they never do in the arts. It may be that the wave of architectural invention and philosophizing that started late in the last century and which was hard to swallow has just now been regurgitated and architecture is chewing its cud. It may on the other hand be one of those periods during which the public taste is allowed to catch up with yesterday's avant-garde. But more likely, it seems to me, it is a period of building rather than of theorizing. During the depression, as I have said, there was plenty of time to argue; only a few architects had enough work on their drafting boards to keep them busy, and architecturally the thirties was a prolonged bull session. The war stopped that. The architects who weren't busy as architects were busy as military men or consultants, and when the war was over they emerged to discover a tremendous demand for housing, for schools, for office buildings. There was a demand too for panaceas, for dreamers who could solve vast problems. There were problems of land use, there were problems created by new kinds of suburbs needing new kinds of services and shopping centers. There were indeed enough problems to absorb the minds of everyone . . . problems of getting things continued on p. 202

### ESTRUDED

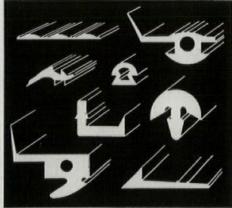
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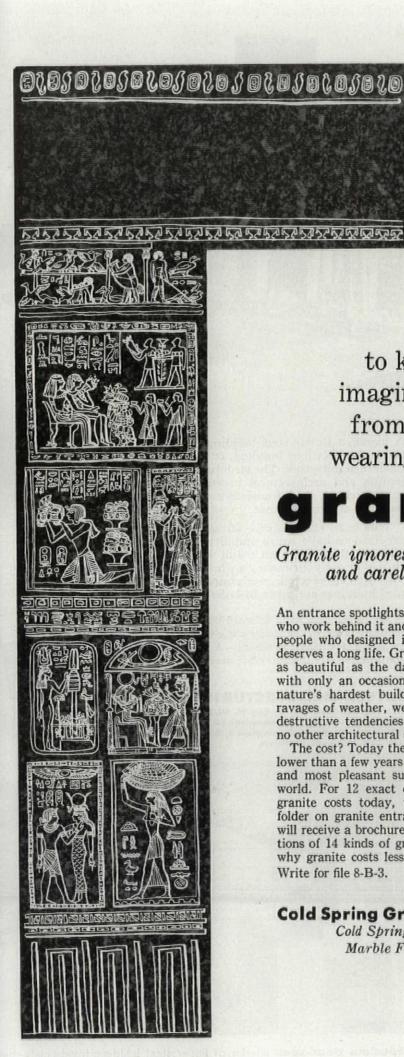
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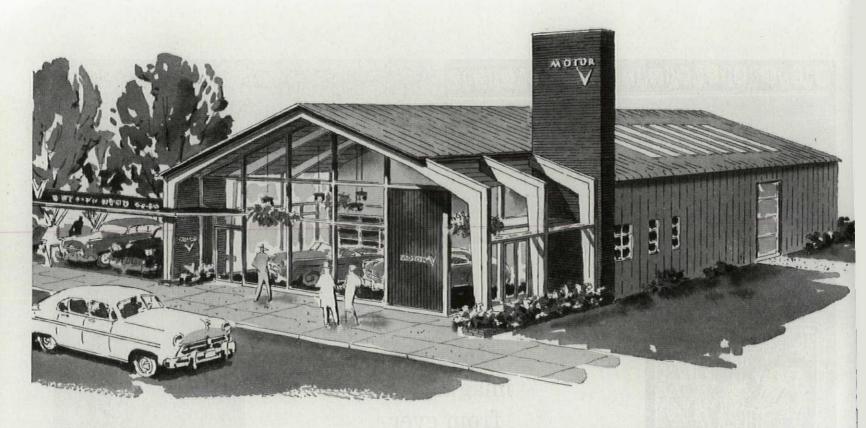
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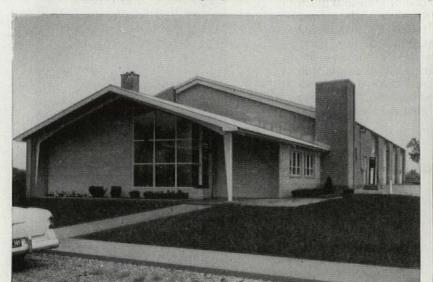
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#### **EXCERPTS**

Continued from p. 198

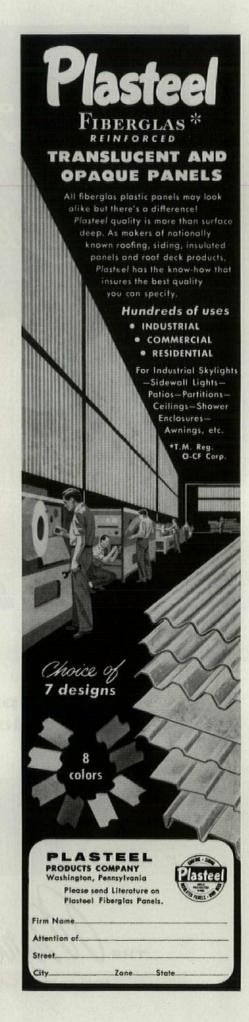
built in which there was little room for battles about style. That is not to say that style was not a primary concern of the designer; it always is. But it was style applied to demand, not style applied to hope.

Demand for building has created a new set of problems. It has created pressures for haste. It has created pressures for standardization. You who are in the profession know what architect built what building, but for the layman it is hard to remember who is responsible for what. The personal hand, the individual invention and excitement, seem to have been lost in conformity to what in today's terms constitute "commodity, firmness and delight." If you look up Park Ave. today at the buildings just built and the ones under construction, the precipices of glass among the encrusted façades of the old apartment houses and Renaissance palaces and Gothic fortresses are exciting, but one is fearful that for every old building that comes down a new sheet of glass will replace it, until Park Ave, will have lost its quality of romantic landscape and become a ditch in a glacier.

A couple of summers ago my daughter went to the county fair in Great Barrington in the Berkshires, and won a little glass dish that was scalloped at the edges and partly pink. She brought it home and with some disgust gave it to her mother. "Here," she said, "do you want this?" and her mother said, "Why? Don't you like it?" and the child said, "No, not for me. Give me good old modern." Not long after this I was driving down Fifth Ave. with my son and we went past the site on which the Frank Lloyd Wright Guggenheim Museum was to be erected. "There," I said, "is where they are planning to put the new Museum of Nonobjective Art." "What's the matter," my boy said, "doesn't anybody object to it any

Between them, it seems to me, they had marked the passing of an era. Good old modern, indeed. Nobody, it almost seems, objects to it any more.

I wish I knew what was going on in the back rooms of architecture. I wish I knew what was cooking. I wish I knew who was dreaming up a style or a concept that was going to start a new battle, that was going to make adrenalin course through the veins of architecture again. The only slight indication I have seen of a revolt was in New Haven a couple of years ago where I participated in a conference on city planning. There was a little seething going on underneath what appeared to be a placid glass and stainless steel surface of agreement. The architectural students who attended the conference seemed to me to be in perfect agreement with the established generation of architects. But between them was a group of young men who were slinging around continued on p. 206





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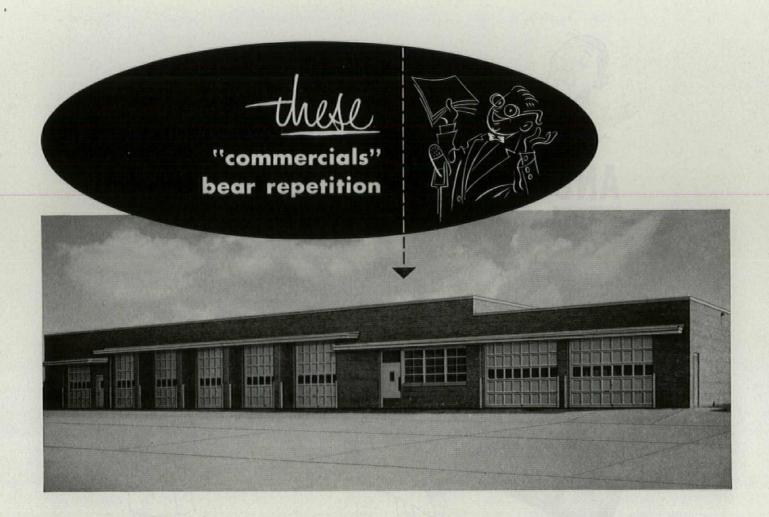
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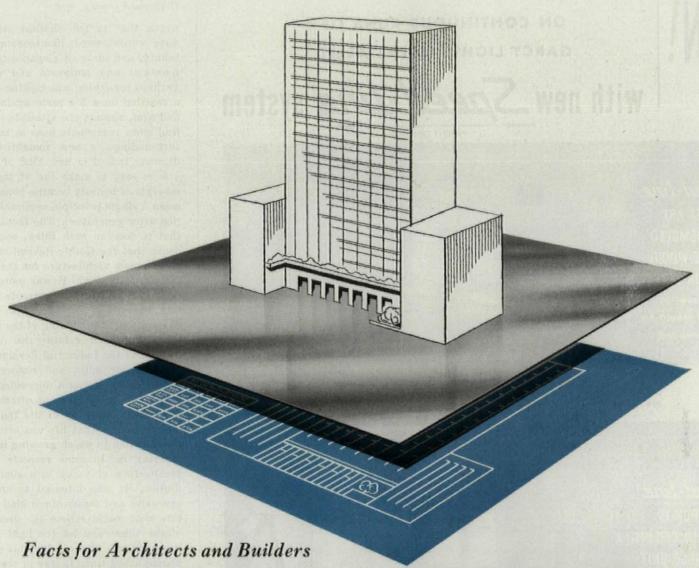
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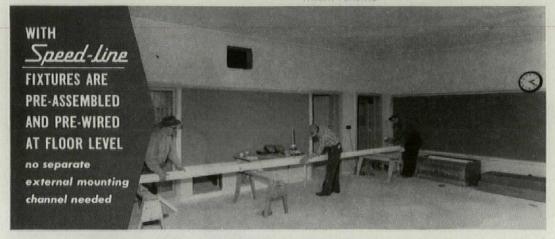
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#### **EXCERPTS**

Continued from p. 202

words that to the shocked students were dirty words—words like monumentality and beauty, and ideas of elegance that included fountains and sculpture and wide plazas. Perhaps something was cooking after all... a reaction on a big scale against the clean and neat, against the attempts to make men lead more reasonable lives in more rational surroundings, a new romanticism, a new illusion. Indeed, a new kind of honesty.

It is easy to make fun of the architect's concepts of honesty because honesty ought to mean a single principle applicable to generation after generation. The fact is, of course, that it does no such thing, and I have no doubt that the Gothic Revival was indeed a more honest architecture for the 1840's than the Greek Revival. It was more honest because the intellectual currents of the day were running in directions that were trying to counteract the passing of the handicrafts, were trying to reform the dreadful inequities of the Industrial Revolution and the dark satanic mills, and restore dignity to work. To us it was a misguided try, but it was a nice try. It was an attempt to create an illusion of a way of life that was quite different from what life was actually like or the direction in which growing industry was carrying it. In some respects the modern architecture of today is a similar kind of illusion. It was intended to create an inexpensive and standardized kind of architecture that would relieve the dreadful gloom of the slums and let the light into dreary lives, and to a very considerable extent it has accomplished this. It was in that sense certainly a better try than the Gothic Revival, and it was honest. But now we are fearful that it has created another evil, the evil of standardization, of replacing gloom with a fixed smile behind which there is little real

Architects talk about honesty, they talk about function, but essentially they are dealers in illusion, and the illusions they create are the illusions the rest of us live with. We all live in a land of the architect's imagination. We live in an illusion that architects have made for us, the unnatural habitat that has been created for us by their pencils. What more romantic illusion can you conceive than the all-glass building in the era of aerial warfare and bombs. Sense dictates that we should build underground, that instead of piling skyscraper on skyscraper in a huddle we should be spreading our building far and wide. It is an illusion, but it is also a vote of confidence in the survival of the race. It is a dream to which we mean to make reality conform. And if we miss the vitality that comes from a battle of the styles, we should probably remember that we are engaged in a somewhat more important battle in which architecture is a measure of our strength—the battle of confidence against despair.



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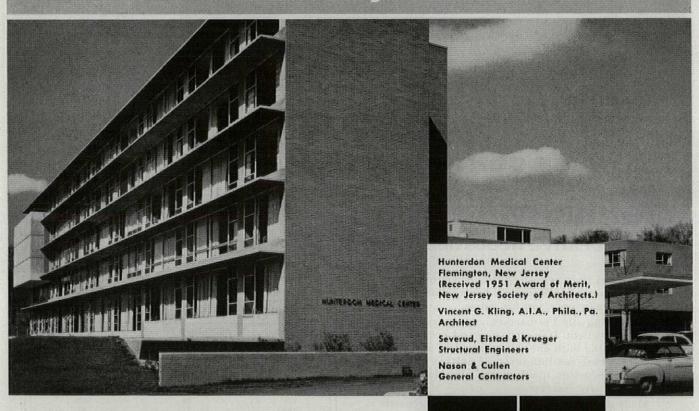
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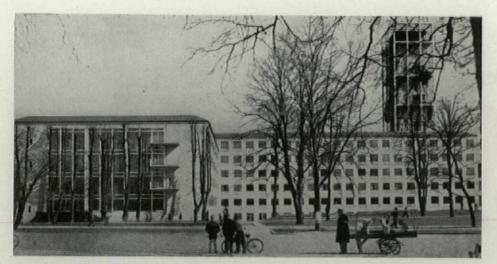
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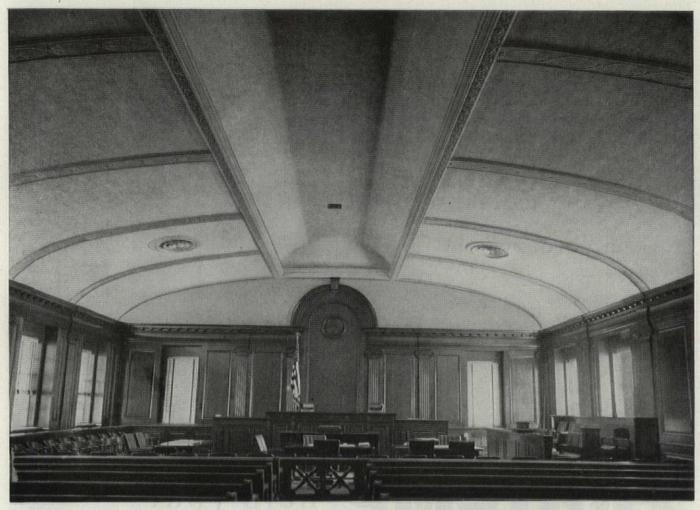
Housing at Jaegersborg Allé-1952



"Chain houses" in Soholm-1953

continued on p. 214

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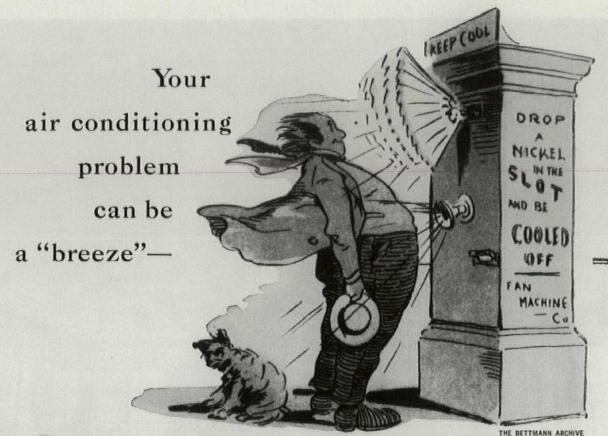
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For complete details on how Airtemp can be of service to you, write to:

Airtemp Division, Chrysler Corporation, Dept. AF-5-55, Dayton 1, Ohio.

# STUART INVESTMENT BUILD-ING, Lincoln, Nebraska. Contractor: Sidles Com-pany. Built in 1937.

SOUTHWEST AMERICAN PUBLISHING COM-PANY, Ft. Smith, Arkansas. Contract-or: Harry G. Barr Company.

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TRUSTED name in lighting since 1902

#### BOOKS

Continued from p. 210

HOUSING DESIGN. By Eugene Henry Klaber. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 247 pp. Indexed. 81/2" x 103/4". Illus. \$8.50

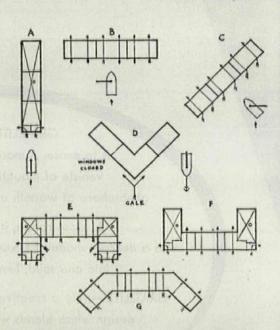
This is a textbook so fascinating it is hard to put down. The information in it comes straight from life—from observation of people, from close and shrewd study of housing plans and buildings and from working bull sessions with their designers. The way the material is presented gives readers

the closest possible substitute for a working bull session with the author—one of the country's most experienced consultants and designers on housing and redevelopment projects, governmental and private. The hundreds of plans, diagrams and sketches are so well integrated with the text, so pointed and so well analyzed, that it is almost possible to imagine Mr. Klaber is drawing them in front of your eyes to explain his points.

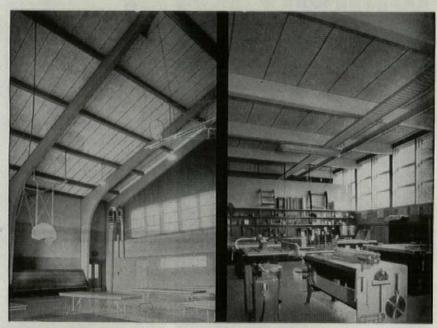
The book is two volumes in one, the first

on buildings, the second on site planning. Very little escapes the author's analytical eye and pencil-from the startling effects of "inch-pinching" on potential occupancy and rentals, to the difference between actual and nominal orientation to a view. (One surprising omission in his thinking, however, is the problem of child safety at windows in high-rise apartments. This is a standard architectural blind spot and a particularly serious one where casement windows are used, as the history of Stuyvesant Town attests, for example. All housing designers and consultants should be required to spend one hot day in a high-rise apartment taking care of the place and assuming full responsibility that a two-year-old will not fall to his death.

Anyone concerned with elevator apartment design, rental or investment should not miss the author's chapter called "Building Units," which analyzes the pros, cons and representative interior arrangements for strip buildings, ells and combinations of ells, double and single tees, Y buildings, straight and offset crosses, square, radial and gallery units. A designer would need either an extraordinary private file of apartment material or something like the author's own unusual experience in criticizing and passing upon hundreds of proposed buildings, continued on p. 218



"In capturing the wind, the same principles apply as in salling a boat. In A, the building will get very little advantage from the breeze and the boat can't make much headway with the boom lashed to the tiller. In B, the building is broadside to the wind, as is the boom of the boat. At a given wind velocity the building will have a maximum of circulation and the boat attain its greatest speed. C shows an intermediate condition. D presumes a gale. The boat has its bow toward the wind and a sea anchor out to keep it off a lee shore; the building also points into the wind which slides along its sides. The shape of a building may also affect the circulation of air inside it. Obviously E and G are better than F when the wind is from the direction indicated."



Junior High School, Keene, New Hampshire 31/4" Composite Porex Architect: J. A. Britton Gen. Contractor: MacMillan Co.

### POREX ACOUSTICAL CEILINGS

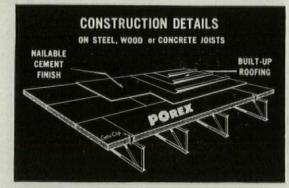
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Type of POREX	Thic	Thickness Slab Finish		Safe loads lbs/ sq. ft. span 1'4" 2'8" 3'4" 6 8'				
Plain	2"	1/4"	7	100	60	_	-	
Plain	3"	1/4"	10	-	90	50	_	_
Composite	3"	1/4"	14	-	-	-	100	60

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Precast lightweight concrete products since 1920

## MITCHELL Lighting chosen

#### for the Imperial Camera Shop



HAROLD SOFFER, owner

Mr. Soffer's many years of experience as a store owner has made him well aware of the influence of proper store design on increased sales and properly directed store traffic.

"In my opinion," states Mr. Soffer, "the single most important element in a well-designed store is the lighting. Mitchell 'Polaris' fluorescent units were chosen for my store because of their modern design and their economical adaptation to pattern lighting installations. I have found that these fixtures provide a soft lighting effect with no disturbing glare upon glass showcases and displays."

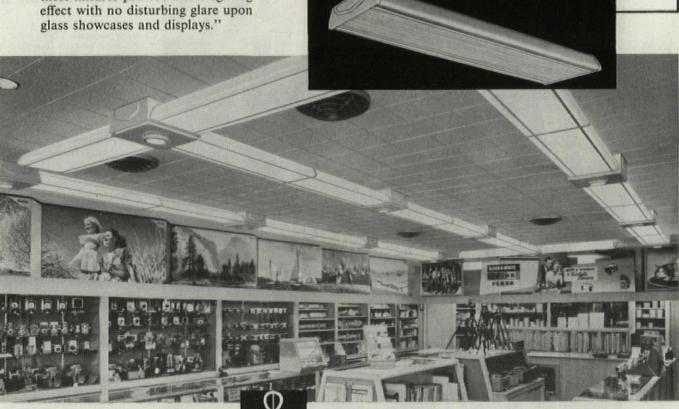


#### MITCHELL LIGHTS ANOTHER STORE

Imperial Camera Shop Berwyn, Illinois

Architect: Nerad and Carlson, Clarendon Hills, Illinois Electrical Contractor: M. G. Electric, Cicero, Illinois Distributor: Standard Electric Supply Co., Chicago

**INSTALLATION:** Flush-mounted MITCHELL "Polaris" two-lamp luminaires. Twelve incandescent downlights highlighting displays and major working areas. An average of 75 footcandles is maintained.

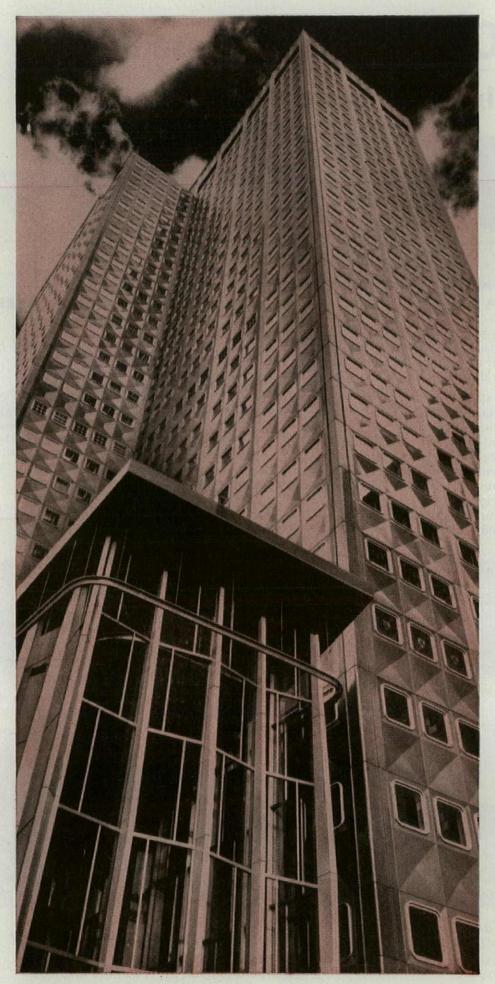


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## who

Alcoa Building, (left), Pittsburgh, Pennsylvania Architects: Harrison & Abramovitz Associate Architects: Mitchell & Ritchey Altenhof & Bown General Contractor: George A. Fuller Company Date of Adlake Window order: January 25, 1951

North Central Home Office Prudential Insurance Company of America, Minneapolis, Minnesota Architects and Engineers: Magney, Tusler & Setter General Contractor: C. F. Haglin & Son's Co.

Date of Adlake Window order: October 19, 1953

Prudential Insurance Company of America, Chicago, Illinois Architects: Naess & Murphy General Contractor: George A. Fuller Company Date of Adlake Window order: November 12, 1953

Shelby County Hospital, Shelbyville, Kentucky Architects: Nevin & Morgan General Contractor: Otho Tapp Date of Adlake Window order: June 24, 1952

City County Building, Detroit, Michigan Architects: Harley, Ellington & Day General Contractor: Bryant & Detwiler Date of Adlake Window order: January 12, 1953

Freeport Motor Casualty Company, Freeport, III. Engineers and Contractors: The Austin Company Date of Adlake Window order: June 2, 1952

East Unit, Baptist Memorial Hospital, Memphis, Tennessee Architects: Office of Walk C. Jones, Jr. Consulting Architects: Samuel Hannaford & Sons General Contractor: Harmon Construction Company Date of Adlake Window order: June 23, 1953

Rockford Memorial Hospital, (right), Rockford, III. Architects: Hubbard & Hyland Perkins & Will General Contractor: Security Building Company

Date of Adlake Window order: December 26, 1951

## originated aluminum eversible windows?

Anyone can claim to—but ADLAKE can show installations sold as early as these!

There's a lot of talk these days about companies "developing" aluminum reversible windows—and we're rather flattered. For we like to think the sudden rash of "new" windows proves that a lot of people looked at the Adlake Aluminum Reversible Windows (that we sold 'way back in January, 1951) and liked what they saw.

Take a look yourself—at the outstanding buildings listed here. They're all equipped with Adlake Aluminum Reversible Windows. (And just to keep the records all straight, we've put in the dates when the orders were placed with Adlake for the windows.)

As with all Adlake products, these windows had to

undergo extensive testing before they were offered for sale, so the windows were designed and *devel*oped several years before the first order was placed. We believe Adlake was first with aluminum reversible windows, and until we see some installations that were sold earlier, we'll keep right on thinking so!

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA New York • Chicago





#### BOOKS

Continued from p. 214

to duplicate the concise information in this one chapter. If, by the time he finishes discussion of the common units, the reader's fingers are not already itching to pick up where others have left off, they will be when he sees the come-on at the end, and an atypical strung-diamond plan in which corner- or through-ventilation is achieved for all of ten apartments per floor, with less outside wall per room than in an apparently more compact offset-cross example.

For maximum benefit from this chapter,

the reader should go back to the author's discussions of room and apartment planning and forward to his discussions of orientation and density. This should be a pleasure because it is seldom that a writer on any subject manages to put so much good sense, good writing and good will into one package.

THE SPECIALTY SHOP, a guide. By Jose A. Fernandez. Published by Architectural

Book Publishing Co., 112 W. 46th St., New York, N.Y. 304 pp. 81/4" x 111/4". Illus. \$12.50

This potpourri of shops (some good, some not so good) designed within the past dozen years should serve the purpose of convincing backward merchants that they too can blossom out. Architects will find it an interesting picture book but hardly the "guide" its title promises. The text is platitudinous and overgeneralized, captions are not very informative, and there is little attempt to analyze what has worked or what has not and why. The book contains 35 pp. of detail drawings, some of them so special it is difficult to understand by what criteria they were selected.

MATERIALS OF CONSTRUCTION. By Adelbert P. Mills, Harrison W. Hayward and Lloyd F. Rader, Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 650 pp. 6" x 91/4". Illus. \$7.50

In its sixth edition, this widely used book has been expanded by 15% and revised to reflect the latest available data. Several new chapters have been introduced, but the approach to the subject remains essentially the same. Fundamentals are treated in the early portion of the book. Then, individual materials of construction are described in detail in separate chapters.

PLANT AND PROCESS VENTILATION. By W. C. L. Hemeon. Published by The Industrial Press, 148 Lafayette St., New York 13, N.Y. 437 pp. 61/4" x 91/4". Illus, \$9

Data and procedure for engineers and students. Subjects covered include: behavior of contaminants in air; materials handling; enclosed processes; hot processes; general and local exhaust; air cleaning; duct, hood and booth design. This book differs from all others on ventilation in that emphasis has been placed on estimating ventilation quantities required in various industrial situations. Duct design, a well-understood technique, has been simplified by condensation of design data in order to free the engineer from unnecessary detail.

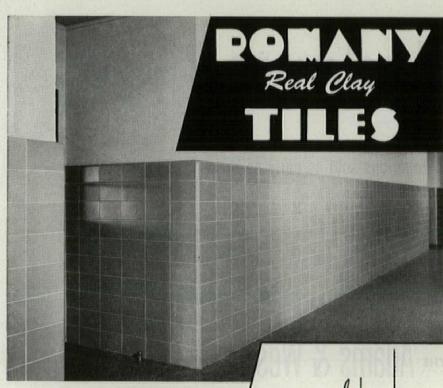
The author is engineering director of Industrial Hygiene Foundation of America, Inc., Mellon Institute, Pittsburgh, Pa.

THE COMPLETE AIRBRUSH BOOK. By S. Ralph Maurello. Published by Wm. Penn Publishing Corp., 221 Fourth Ave., New York 3, N.Y. 159 pp. 834" x 111/4". Illus. \$7.95

Illustrated with more than 400 photographs, drawings and diagrams, this book presents information for the beginner and professional needs for mastery of the airbrush, both as a working tool and as an art.

The material is presented simply and in full detail, answering specific questions and problems with illustration and explanatory text, including examples of airbrush work by leading artists in the field.

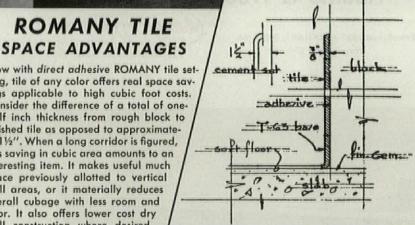
A ten-page chapter covers the subject of architectural rendering.



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this saving in cubic area amounts to an interesting item. It makes useful much space previously allotted to vertical wall areas, or it materially reduces overall cubage with less room and floor. It also offers lower cost dry wall construction where desired.



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No lost time or motion in handling the alloy . . . no difficulty in getting full penetration of the alloy regardless of the position of the valve or fitting . . . no guessing whether the joint is made right . . . the fillet of silver brazing alloy that shows up when the Walseal joint is completed, comes from the inside! And, whether you've made the joint yourself, or are inspecting the work of another, you know that if the silver alloy fillet is visible, and the valve or fitting is Walseal, you have full penetration. That's why nobody guesses when you use Walseal!

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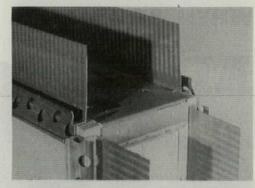
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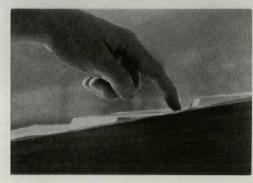
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Functions follow form (p. 230)

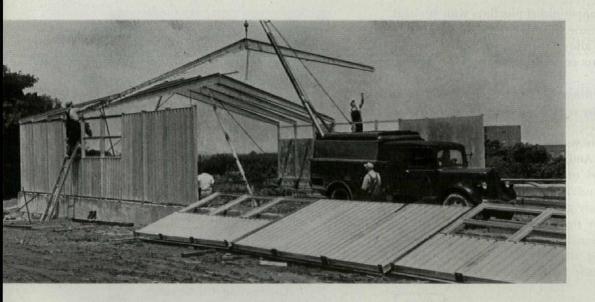


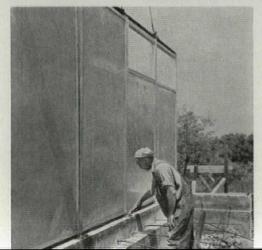
Casingless door frame (p. 234)



Flat ribbed plastic (p. 226)

#### Aluminum-faced insulated wall panels with built-on framing hold up roof loads





3'-11'/4" - 3'-11'/4" -

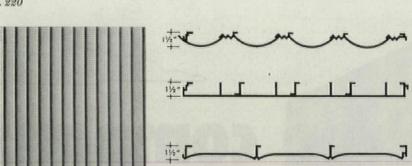
Notches in extruded panel members for 1-connectors are serrated to allow for metal expansion.

As population shifts and new school-agers join high costs in pacing the construction race, the need grows for a mobile, prefab, self-sufficient, structural wall that can meet building urgencies head-on. If such a wall carried roof loads as well as its own weight, it could be put together and taken apart easier and faster than panels with separate framing. Some designers draw up their own schemes; a few have them custom-built for specific jobs. Pittsburgh Architects Schell, Deeter & Stott devised this one, the W-A-E Load Bearing Wall System, originally for a small church in the expanding suburb of Bethel Brogue, Pa. The building had to go up in a hurry on rented land, and stretch with the parish by being reshuffled on a larger site later. The structural panels themselves have an outside facing of extruded ribbed aluminum and an interior skin of galvanized steel around a glass-fiber insulating middle. All are planned on a 4' x 8' module, some glazed, others with doors. Each holds its own aluminum load-carrying members.

Perceptive fabricator Herman Hennessey, whose firm, Aluminum Structures, Inc., made up the insulated sections, was impressed by the potentials in such a load-bearing system for other kinds of buildings as a five-man crew erected the entire shell for the 128' x 40' church in three days. Hennessey hired the Pittsburgh architects as consultants to modify the wall units



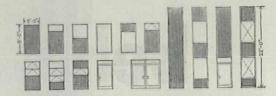
Continued from p. 220



Actual-size view of extruded facings which are stocked in above profile patterns

and make them practicable for mass production with market to match.

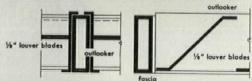
Standard single-story W-A-E (weather-expansion-anchor) Load Bearing Walls developed by Schell, Deeter & Stott are stocked in complete wall, window and door units (see below) in a fine assortment of extruded facing profiles or with exterior skins of architect's own design. Prices average about \$4.10 per sq. ft. F.O.B. plant.



Two-story panels up to 22' high, pre-engineered for greater carrying capacity, are made on order.

Another packaged item by Aluminum Structures that reveals architectural logic is the splendidly simple Solar Shade. With



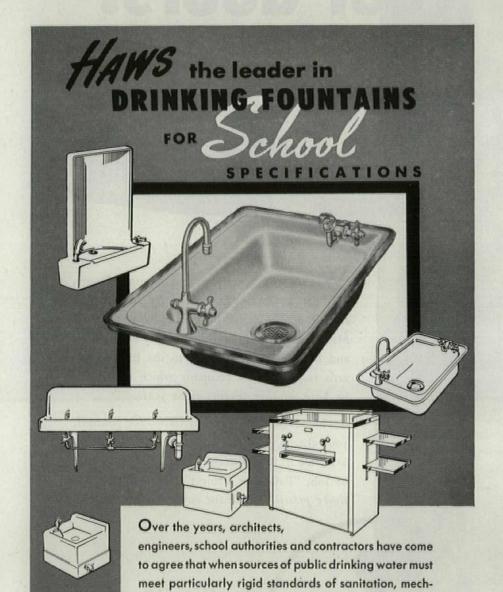


its extruded sleeve extensions anchored solidly to the building structure, the all-aluminum, modular window brow thrusts seven sloped blades on a 4¼"-high Z-mounting 5' out from the wall. Except for the piercing arms 4' or 8' o.c. there is a wide clearance between building wall and the shade's back which visibly expresses the cantilever. The shade costs about \$5 a sq. ft. Manufacturer: Aluminum Structures, Inc., 633 Washington Rd., Pittsburgh 28, Pa.

#### SPRAYED INSULATION foams up and sets as rigid blanket

Poly-Cell insulation can be sprayed directly on any surface—dry or moist, flat or irregular. As it lands, it looks like a heavy coat of varnish, but within two hours foams up to a thick, airy, rigid cushion. Noncombustible, the material has been tested to resist temperatures ranging from -40° F. to 225° F. Although Polly-Cell requires an additional vapor or weather barrier, it does offset this by eliminating a tackcoat.

continued on p. 226



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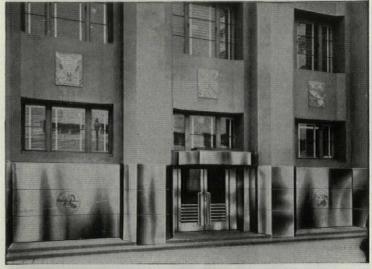
pendable, completely sanitary. Always specify HAWS!

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a beating

outside

or inside





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- "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
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- 3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods, A1A File No. 15-H-1.

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You have to design for maximum attractiveness in those areas of buildings which have most traffic—such as building fronts, marquees, entrances, lobby details, railings, etc. Yet those same places are exactly the locations where you need maximum utility,

What's the best material to use? Just remember that stainless steel—and only stainless steel—gives you the nearest-to-perfect combination of satiny beauty and rugged toughness. No other material is as good-looking and at the same time as

strong, hard-surfaced and resistant to rust or discoloration. No other material requires as little maintenance, cleans as easily and lasts as long.

In short, whether you're considering Allegheny Metal for just the "hard-wear" spots or for an entire curtain-wall design, keep this fact in mind: no other material costs as little over the long pull as stainless steel.

Let us give you any information or technical assistance you may require.

Allegheny Ludlum Steel Corporation,

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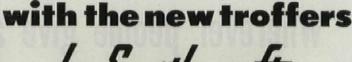
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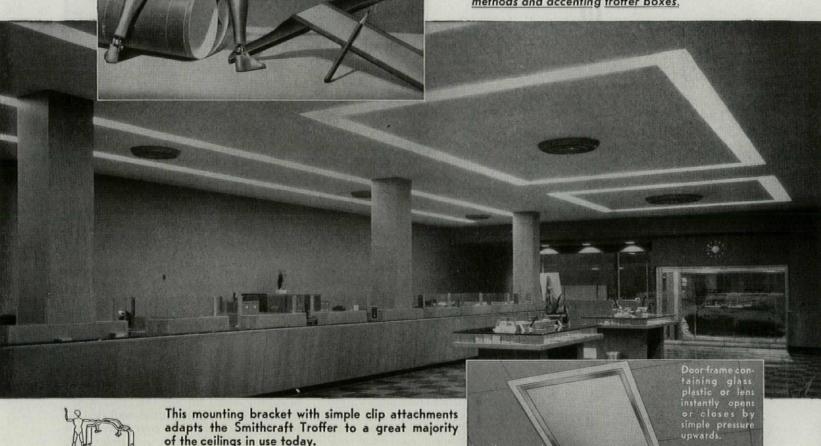


## your ceiling planning comes to life



## by Smitheraft

From drawing board to reality is now a simple transition in the creation of architecturally beautiful ceilings with recessed lighting. The new Smithcraft Troffer presents a clean, trim, uncluttered appearance because for the first time in troffer lighting there are no visible catches, latches, bolts or screws. Perfectly straight, trim, in-line rows free from light leaks or blemishes are formed with new Smithcraft Troffers which are <u>architecturally precise modules</u> for exactly 12" openings. Adaptability to today's ceiling constructions is virtually universal (a single simple clip adapts the Smithcraft Troffer to most ceiling conditions and simple provisions are made for all others.) A new flexibility of design is provided through the widest possible choice of shielding media, pattern lighting methods and accenting troffer boxes.





adapts the Smithcraft Troffer to a great majority of the ceilings in use today.

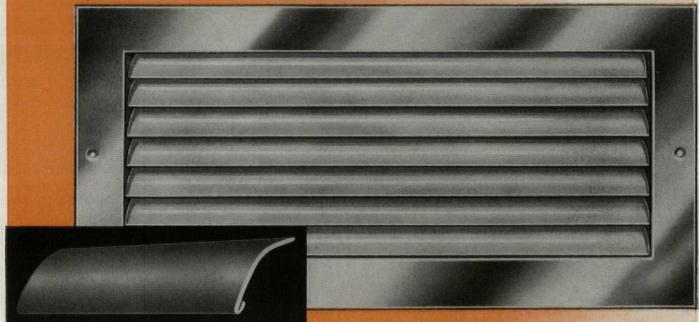
The new Smithcraft troffer-in-plaster frame method assures perfectly square plastered openings and is unbelievably simple to install.

Write today for the new Smithcraft Troffer Book illustrating and describ-ing the new Smithcraft Troffers in detail.

"BUY LIGHTING" - NOT FIXTURES - INVEST IN AMERICA'S FINEST FLUORESCENT LIGHTING

In louvered units, louvered units, louvered hinge from either side and are removed without tools or loose parts.

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INCH. Makes it possible for a smaller grille to give superior performance...at

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Matches design of supply grilles Curved outline of fins add beauty . . . at the same time make it easy for maintenance personnel to keep grilles clean.

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The curved hemmed fin design adds rigidity and durability to resist lower wall abuse. There is no see-thru due to the special positioning of the fins.

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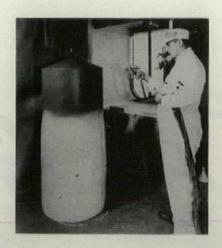
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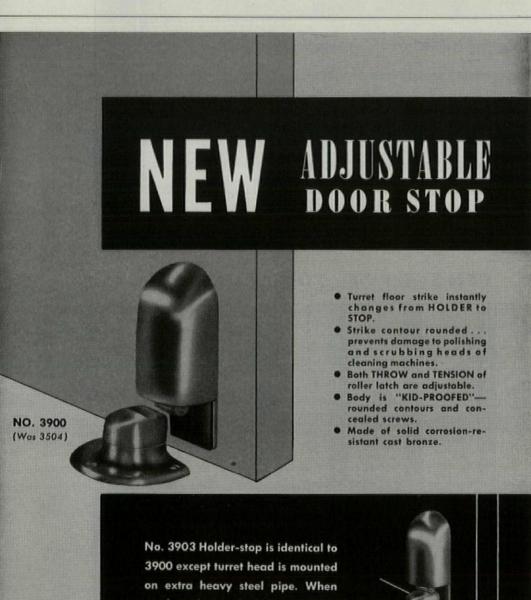
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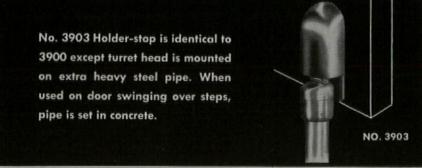
Continued from p. 222

Formulated primarily for insulation of valves, fittings, and similar devices with irregular surfaces, sprayed Poly-Cell also would be applicable for large-scale construction-particularly on sheet metal industrial buildings and in prefab curtain walls. Applications are made by the company's licensed contractors at a cost of about 47¢ per sq. ft., plus labor.

Manufacturer: Insul-Master Corp. of America, 1141 Oliver Bldg., Pittsburgh, Pa.







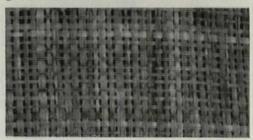


#### SARGENT & GREENLEAF INC.

ROCHESTER 21, NEW YORK

#### **PLASTIC LAMINATE** uses fibery weaves for light diffusion and strength

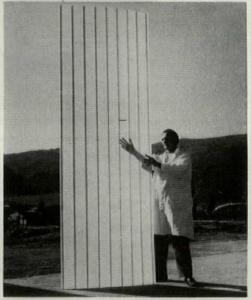
Burlap sacking takes on a glamorous mien in Rend-O-Lite translucent plastic. Sandwiched in a sheet of polyester and glass fiber, the material is available in corrugated or flat panels 10' and 12' long, 30" and 34" wide. Laminates also are available with other textural fibers dear to naturalist designers-jute, osnaburg, and Philippine grass cloth-and all are handled in their



original neutral colors. Price of each type is \$1.10 per sq. ft. except the grass cloth, which sells for \$1.35.

Manufacturer: Commodore Industries, 754 Warrington Ave., Redwood City, Calif.





#### WIDE RIBBED POLYESTER made with heat-stopper chemical

A variation on the corrugated plastic theme, Steplap is a translucent glass-fiber reinforced plastic laminate molded in a series of 5" steps. While it bears a family resemblance to wood clapboard, the new shape developed for partition and sunshade applications has design advantages. At the base of each ridge a 1"-wide flat area is provided for nailing purposes. Another feature

## Enhance the value of your property with a USS AMBRIDGE Steel SWIM



Holiday Motor Hotel, Gettysburg Interchange, Pennsylvania Turnpike

#### No other recreational facility gives so much pleasure at such low cost!

Whether you're designing or building a single home or a residential development; a suburban office building or a manufacturing plant; a hotel or a motel, go one important step further and include a pool in your plans. A modern swimming pool adds glamor, increases the value of your property or project, and makes it an enviable showplace.

#### **New USS AMBRIDGE STEEL POOL** is the most durable type

Because of its all-steel construction, the revolutionary, new USS Ambridge Pool is the most durable type on the market. It is the result of more than a decade of research, experimentation, and testing by American Bridge, the

world's largest fabricator and erector of structural steelwork. The copperbearing, rust-resistive steel sections fit snugly and easily together. Prefabricated sections are permanently welded watertight. It will never crack or be troubled by freezing or frost action. And, except for an occasional coat of paint, it requires no maintenance.

The USS AMBRIDGE STEEL POOL is available in the following standard "Pleasure and Regulation Pool" sizes: Pleasure Pools, 20' x 40', 50' and 60'; Regulation 42' x 82'6", 35' x 75' and 35' x 105'. You can also obtain Special Sizes, as well as Regulation "T" and "L" shape pools. We welcome an opportunity to help you select and install the pool best suited to your needs. Write or phone the nearest office for more in-

#### USS AMBRIDGE STEEL POOL Installations

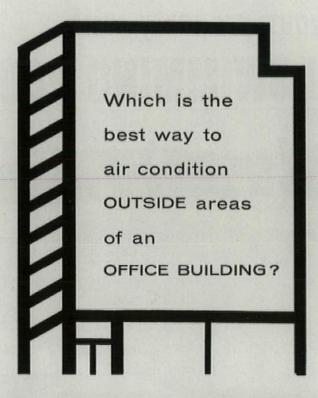
Holiday Motor Hotel, Mechanicsburg, Pa. Braidburn Country Club, Madison, N. J. Country Club, Gary, Indiana Gary Boy Scouts, Gary, Indiana Hollywood Shores, Maryland Country Club, Butler, Pa. Valleyvue Apartments, Pittsburgh, Pa. Coral Reef Beach Club, Lido Beach, Long Island, N. Y. Laird, Rock & Small, Baltimore, Md. Monaca, Pa. Danherst Corporation, Fairless Hills, Pa. Community Park, Albert City, Iowa City of Tullahoma, Tennessee Hotel Brickman, So. Fallsburgh, N. Y. Orinoco Mining Co., Venezuela, South America (2) Lions Club, Algona, Michigan ✓ COSTS LESS TO BUY

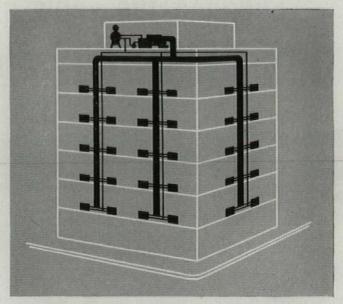
✓ COSTS LESS TO INSTALL ✓ COSTS LESS TO MAINTAIN

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION . GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA. Contracting Offices in: AMBRIDGE - ATLANTA - BALTIMORE - BIRMINGHAM - BOSTON - CHICAGO - CINCINNATI - CLEVELAND - DALLAS - DENVER - DETROIT - ELMIRA - GARY MEMPHIS · MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE · ST. LOUIS · SAN FRANCISCO · TRENTON

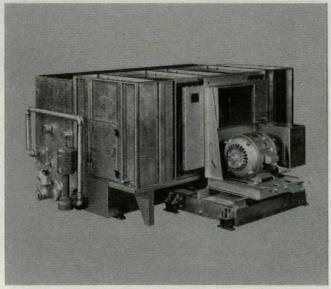
### RIDGE POOLS







Carrier's Weathermaster\* System brings perfect climate to each outside office in all seasons and under all conditions. It is the most flexible air conditioning system you can install. You have wide choice of room units, air handling equipment and refrigeration machines—absorption, centrifugal, reciprocating.



Carrier Conduit System Weathermakers are compact central station primary air conditioning units for the Weathermaster System. Designed for high-velocity air distribution, fan-coil units include insulated fan and coil casing, DX or chilled water coils, sprays, high-pressure fan. Capacities from 6500 to 21,000 cfm.



Carrier Weathermaster Room Units are of 4 different types and 20 sizes. Each type is designed to deliver different quantities of cooling, ventilation or heat as required by rooms of different size, use and location. Weathermaster room units have no moving parts. Base unit may be furred in or installed in cabinet.

#### Carrier is the quickest way to the right answer

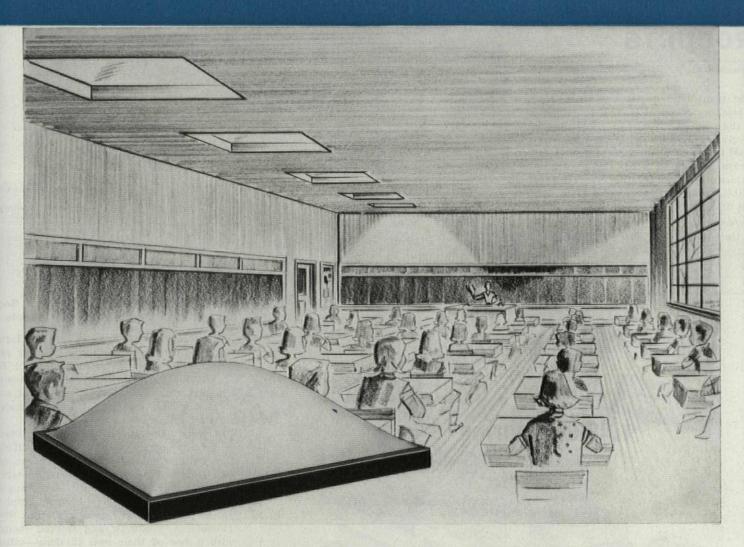
JUST 1-2 AND THE

Carrier has all the ways to air condition any job—and all Carrier equipment is engineered to the same uniform standard. So short-cut hours of selection by (1) using the Carrier line as your shopping guide and then (2) comparing values.

For more information on Carrier products, call your Carrier office for the catalog, "Air Conditioning for Office Buildings." Or write direct to Carrier Corporation, Syracuse, New York.



air conditioning · refrigeration · industrial heating



#### Uniform daylighting with

#### domed PLEXIGLAS skylights

The most practical way to provide an even level of daylight throughout a room is to use skylight units equipped with PLEXIGLAS domes. Installed over areas farthest from windows, they bring the amount of daylight into balance, reduce electric lighting costs, permit lower ceiling heights.

By specifying skylights with domes formed from Plexiglas acrylic plastic, you obtain:

One-Piece Construction—The entire opening is covered by a single leak-proof dome. Joints, sealing compounds and opaque cross members are eliminated.

**Durability**—The structural rigidity of the dome shape, plus the strength, resilience and proven weatherability of PLEXIGLAS, result in safety overhead and trouble-free service.

**Easy Installation**—Skylight units are prefabricated, complete with weather-proof framing for the dome. They are installed quickly, economically.

PLEXIGLAS is a trademark, Reg. U.S. Pat. Off. and in other principal countries in the Western Hemisphere.

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

Daylighting Efficiency—White translucent domes transmit and diffuse 60%-75% of the daylight. Clear material transmits 92%. Glare is minimized because domes are overhead, recessed in ceiling.

**Self-Cleaning**—Dome shape keeps snow and dirt from accumulating. Light transmission remains high without maintenance.

Domed PLEXIGLAS skylights are available in a number of sizes and shapes. We will be glad to send you the names of sources of supply.

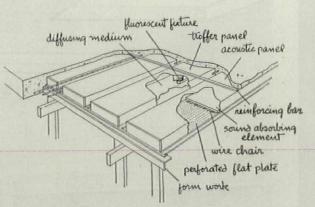


Continued from p. 226

of the translucent panel is Filtron 25, a heat-blocking chemical ingredient mixed in with the polyester resin. This additive and Steplap's highly reflective gloss surface are claimed to cut off about 75% of solar infrared rays. Weighing 8 oz. per sq. ft., the .06"-thick 10'-4"-long sheeting comes in 41½" and 31½" widths. Price ranges \$1 to \$1.20 per sq. ft.; according to quantity.

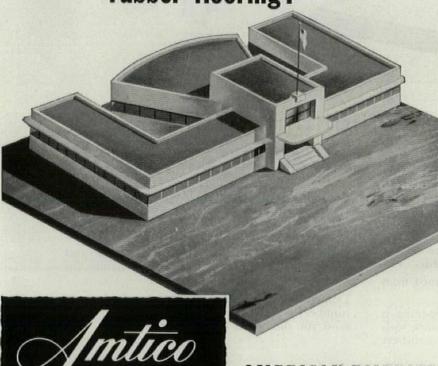
Manufacturer: Alsynite Co. of America, 4654 De Soto St., San Diego 9, Calif.





#### Perfect for that new school...

America's most beautiful rubber flooring!



Imtico RUBBER FLOORING

AMERICAN RILTRITE

RUBBER TRENTON 2,



COMPANY NEW JERSEY

In Canada—American Biltrite Rubber Co. (Canada) Ltd., Sherbrooke, Quebec

- Lifetime Economy
- Easy Maintenance
- Sound-Deadening
- e Cushioned Resilience
  - Fire-Resistant

Luxurious Beauty

26 COLOR SAMPLE KIT...YOURS ON REQUEST



AMTICO, Dept. AF-3, Trenton 2, New Jersey Gentlemen:
Please send me free box of 4" x 4" samples of Amtico Flooring is standard 1/4" gauge and all 26 stock colors—also illustrated literature
NAME
FIRM
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CITYSTATE

#### FLUSH-FACED FORM for roof or floor has recessed lights, acoustic panels

Here in a panel package is concrete formwork, an acoustical ceiling, a lighting system and air-conditioning ductwork all for \$1.50 per sq. ft. It is not only an economical integration of building parts, but also a commendable example of architect-manufacturer collaboration.

Architect George Schultz and the Detroit school board were intrigued by multifunction ceilings but restrained by budget and code from using existing systems. Researching their problem, they found many applicable features in the load-bearing building panels of their good neighbor, Detroit Steel (Fenestra) Products, and worked themwith a few of their own thinking-into a long-span semistructural pan for reinforced concrete joists that could meet city fire regulations. Fire-resistance ratings for such construction could be based wholly on the concrete because the 16-ga. steel forms would carry no building load once the concrete above them had cured. (To offset concrete dead weight during the pour, shore



supports would be necessary only at the ends and middle of the pan forms.)

Detroit Steel agreed to fabricate the panels for two schools experimentally (and later for 21 more) as the big advantage of the permanent pans became evident: unlike reuse formwork or sound-insulating decking, this product could create a finished, flush, acoustically treated ceiling with integral lighting fixtures. Now the project is proving so satisfactory, the TAC (troffer-acoustic) panels will be available nationally.

Running \$1.50 per ft. in place, TAC pans not only cut construction time but are less expensive in straight materials costs than basic wood forms (which Architect Schultz estimates at 60¢ per sq. ft.), separate acous-

## VERSATILE Gold Bond Acoustimetal



Gold Bond Acoustimetal is the most versatile and practical sound conditioning product for almost every type of ceiling installation...it adds quiet and beauty wherever it is used. Each fireproof 12"x 24" metal casing contains a specially wrapped mineral wool pad -1%" thick to assure a noise reduction coefficient in the .80 to .90 range.

The perforated casings have a white baked enamel finish that can be washed or repainted without affect-

ing their sound absorption qualities. Installation is quick, and each unit can be easily removed for maintenance purposes. Over the years Gold Bond Acoustimetal is the most economical acoustical product

For complete technical data on Gold Bond Acoustimetal and other Gold Bond Acoustical products, call your Gold Bond Acoustical Contractor today - or write to Acoustical Division Dept. AF 55:

BUFFALO 2, NEW YORK NATIONAL GYPSUM COMPANY .

**Build** better with Gold Bond





GYPSUM BOARD



PLANKS AND TILES





ACOUSTICAL



ASBESTOS ROOFING TILES AND SIDING

ACOUSTICAL PRODUCTS



16 oz.C. R.

Now

For the first time
you can tell, at a glance,
that you are getting
the exact copper
you specify!

**ALL STANDARD SIZES OF** 

#### REVERE

SHEET, STRIP AND ROLL COPPER now come marked with gauge and temper

Effective with current production each sheet or strip of Revere Copper will be marked as to gauge and temper. All coils of Revere Copper will be marked on the outer copper wrap. Sample marking (actual size) is shown above. These markings also apply to LEADTEX, Revere's Lead-Coated Copper. The ink used for marking is water-soluble so that it is readily removed by a damp cloth or by water alone.

Now, you can be sure, at a glance, what gauge and temper copper you are getting, when you specify Revere. Also included is the Revere Seal (shown above) which identifies the manufacturing source of the copper as American. This seal and the line, "A QUALITY PRODUCT BY REVERE U.S.A." also appears on all shipping cases.

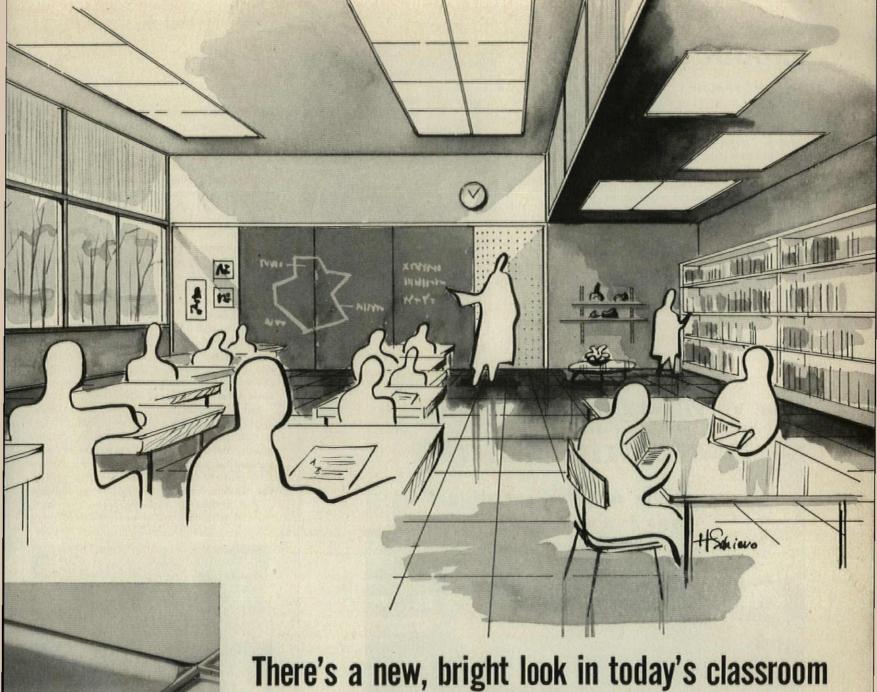
So in order to make sure that you get the gauge and temper of copper you specify, make certain the sheet, strip and roll copper you order, or use, bears the Revere stamp.

#### REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801 230 Park Avenue, New York 17, N. Y.

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



More pleasant, more effective lighting with fixtures of extruded Du Pont LUCITE® acrylic resin

What makes a balanced, economically lighted environment? Diffusing luminaires must transmit optimum light without specular glare or shadow. Panels and sheetings need the shapes and colors to harmonize with wall, furniture and floor designs. And these fixtures should have the properties to assure long, trouble-free service.

Du Pont "Lucite" meets all these requirements. Modular units and sheeting of extruded "Lucite" have high lumen output while virtually eliminating glare and shadow. "Lucite" can be formed readily into desired shapes and is available in a wide range of transparent and translucent colors. Fixtures made from "Lucite" are strong, durable, free from discoloration and dimensionally stable . . . maintain their efficiency and beauty for many years.

For further information on "Lucite" acrylic resin, write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 295, Du Pont Building, Wilmington 98, Delaware.

#### **Good Lighting Is Good Business**



Fixtures of "Lucite" acrylic resin are lightweight for easy assembly. They resist discoloration. Even broad sections are readily fabricated to precise tolerances. Above is the popular 4' x 4' modular unit for luminous ceilings.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



This corrugated panel, widely used for light-diffusing walls and ceilings, has great strength, excellent color sta-bility. Beautiful "Lucite" acrylic resin can be made in many sizes—and in clear as well as translucent colors.

Continued from p. 230

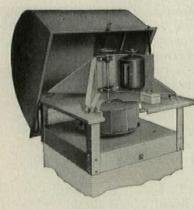
tic treatment (about  $65\phi$ ) plus lighting. In a TAC ceiling, therefore, classroom lighting could be figured at  $25\phi$  per sq. ft. And, as labor becomes familiar with the new system, installation costs should come down.

In structural behavior, the new pans are comparable to standard rib-slab or metal pan construction: 24" o.c. spacing accommodates 6" joists across 16' to 18' lengths and 8" joists over 22' to 24'. On the job, conduit boxes are attached and sound ab-





The Airlifts in the photo above are but seven of a total of twenty installed on a large hospital



Here's measurable effective exhaust capacity at very low noise levels! Quietness alone in duct exhausters isn't enough; you want the capacity needed for the job without wasteful size and cost. Airlift is guaranteed to deliver cataloged capacities — determined in accordance with the test code adopted by NAFM and ASH&VE. Design features include dynamically-balanced nonoverloading fan wheel, low fan tip speed, oversize outlet opening. For quick reference see our catalog in Sweet's Architectural or Plant Engineering File — or write for Bulletin AL-O.

The State Euclid Avenue, Cleveland 12, Ohio

**Roof Ventilators and Ventilating Louvers** 

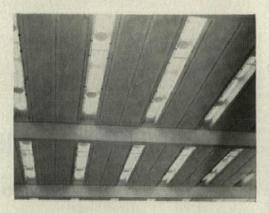
POWER PLANT EQUIPMENT . PROCESS INDUSTRY CONTROLS

sorbent batts inserted before TAC sections are hoisted up on supporting shelves and secured to panel support bars on the main beam forms. Welding, placement of main conduit lines and necessary drilling are done from the top of the panels. Main beam steel reinforcement is connected to the extended column steel, and reinforcement in the panel voids is tied and interlocked to form T-beam sections. Suspension bars welded across the sections become transverse support for the panels once the concrete flows around them and cures. When rudimentary formwork and shoring are removed, the ceiling is painted, including a reflective coat inside the troffers.

Panels with blank or punched faces and recessed troffers can be combined in whatever way best fits the lighting and acoustic situation. Another of *TAC*'s potentialities: the holed pans could serve as plenums and outlets for conditioned air.

For classroom lighting, the Detroit team used diffusers of crimped white plastic, and is now trying out an aluminum honeycomb which matches surface grayness of unlit panels but reduces illumination efficiency a fragmentary 3%. Wire mesh strips protect the troffers installed in *TAC* gym ceilings.

The architects and engineers who have worked with the troffer-acoustic permanent



pan ceiling feel that it will be appropriate for many kinds of structures besides schools; it has a decided advantage in multiple-story buildings where the absence of lost space between structural floor and suspended ceilings would add up to a significant hunk of cubeage.

Manufacturer: Detroit Steel Products, Building Panel Div., 2250 E. Grand Blvd., Detroit, Mich.

#### METAL PLASTER GROUND is flush molding for doors and windows

Behind many a simple inconspicuous door or window casing is concealed a lot of architectural design effort. Usually the designer must settle for a bulky standard casing or else design his own trim.

To those who take the latter course, the new Dor Win Frame Seal will be a welcome standard item. A zinc coated steel strip selling for about 16¢ per lin. ft.. Dor Win makes unnecessary regular casing around



A special-design application in a midwestern plant office. Upper wall is Consoweld 10 in Dusty Green Echo. Wainscoting is Gray Holiday, with Twin-Trim moulding. Movable partitions are faced with Consoweld wood grain in Harvest Brown Birch. Baseboard is a ¾" thick strip of Consoweld, available on special order. Desk top is Consoweld Gray Echo. Wall materials are applied directly over cement block.

## How **Consoweld** can be used for specially designed interiors

Consoweld is a melamine-surfaced plastic laminate available in 46 patterns, color-tuned by Color Research Institute of America.

Exceptionally fine effects can be achieved with planned applications of Consoweld to walls, desks, tables, and counter tops. Consoweld comes in two thicknesses—the standard Consoweld 6—1-16", for shop-fabricated tops; and Consoweld 10—1-10"—for on-the-job application. It may be applied directly over cement blocks, gypsum lath, or sheathing-grade plywood. Consoweld Twin-Trim matched mouldings provide large areas of unbroken color. Get complete details and data file folder—mail the coupon or write.

Window detail: the sill is post-formed of Consoweld Dusty Rose Irish Linen, made to order for this application.

#### CONSOWELD

the nation's finest plastic surfacing ... good for a colorful lifetime

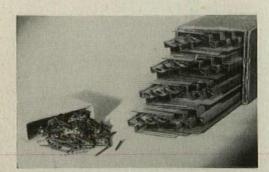
Consoweld Corporation, Wisconsin Rapids, Wisconsin Please send me free data file folder and name of nearest distributor.		
Name		
Company		
Address		Description of the second
City	State	

WAKEFIELD GEOMETRICS a modular plane LIGHT

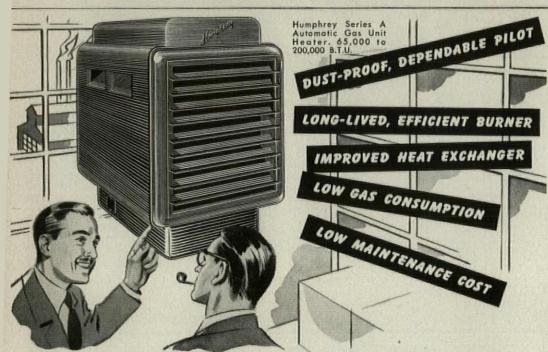
### CASE STUDY TWO WAKEFIELD GEOMETRICS BETA (recessed) OMEGA (on surface) with Rigid-Arch Plexiglas diffusers in four sizes 4'x4' 4'x2' 2'x2' 1'x4' contemporary architecture WRITE FOR CATALOG 55 The Wakefield Company VERMILION, OHIO Wakefield Lighting Limited LONDON, ONTARIO

AMERICAN NATIONAL BANK, AUSTIN, TEXAS . ARCHITECTS: KUEHNE, BROOKS AND BARR

Continued from p. 234







#### What's the most important feature

#### of a good GAS UNIT HEATER?

Sounds like a tough question to answer, doesn't it? Actually, when you buy unit heaters, you want every good feature that will contribute to efficient, economical performance and lasting service life. Burner, pilot, heat exchanger, fan, motor, and controls—all should be of the latest and finest design.

Humphrey engineers have always realized this. Since Humphrey first introduced the Gas Unit Heater, they have led the way in providing heaters that are the newest and best in every construction detail. Because of this, we suggest the most important feature to look for, in the Gas Unit Heaters you buy, is the "Humphrey" name-plate on the front.

When you buy a Humphrey you can be sure that every part of it is well made—because the Humphrey is truly the world's finest Gas Unit Heater.



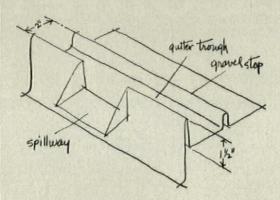
GENERAL GAS LIGHT CO. . KALAMAZOO, MICH.

Originators of Gas Unit Heaters



framed openings. Anchoring the uncased wood frame to a wall, the metal stripping also provides a locking groove for rock lath and its perforations help bond the plaster. Dor Win Frame Seal is supplied in precut lengths for standard openings, and fastened to studs and frames in the roughing-in stage; no mitering is required. Combining the insulation benefits of wood frame with rigidity and straight trim of a steel seal, the convenient stripping will also be furnished attached to precut wood frames.

Manufacturer: Dor Win Frame Seal Co., 710 W. Rockside Rd., Cleveland 9, Ohio.



#### **GRAVEL STOP** doubles as gutter

A miniature parapet for flat and inclined roofs, the G-S Gutter sets up a ¾" barricade to prevent gravel from rolling, and channels rainwater to spillways every 20' or 30' along its simple, fluted metal edging. Sold in 10' lengths (20 to a package) G-S galvanized edging runs 27¢ a ft.—a few cents more than an unguttered gravel stop. Spillway sections and inside and outside

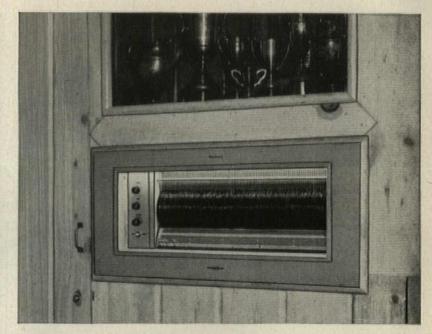


corners are stock items, and all G-S units are made in copper as well as steel. In installation, the sections may be overlapped 2" and bedded in mastic. Grooved wood driving blocks are provided for pressing sections into a good mechanical bond. As an alternate technique, joints can be butted and soldered. G-S Gutter extends 3" over the fascia; it may be painted or left as is.

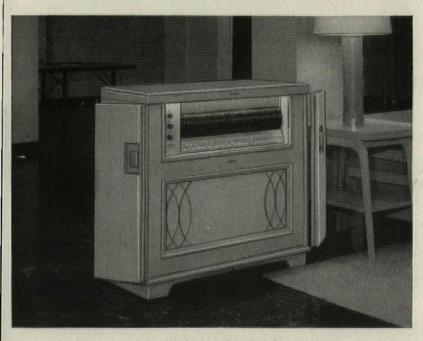
Manufacturer: Agar Mfg. Co., 390 N.E.

Manufacturer: Agar Mfg. Co., 390 N.E. 71 St., Miami 38, Fla.

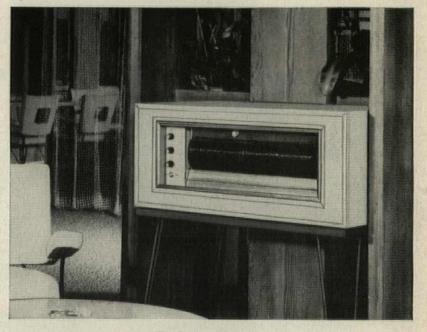




The Seeburg Custom Unit for built-in installations.



The Seeburg Console.



The Seeburg Library Unit.

### It's so easy to include Seeburg music!

Homes, Apartments, Hotels and Clubs take on new appeal, added value when they include a Seeburg Music System.

The Seeburg Select-O-Matic is that last word in high fidelity. It's truly automatic . . . select your favorite record programs at the flick of a finger. There are no records to handle, no albums to fuss with. That's because the Select-O-Matic holds 100 records, plays up to 400 selections of 45 RPM music when extended play records are used.

For Business and Industry. Whatever the plans on your boards may be, Seeburg will work with you and your client to bring the acknowledged benefits of music to his business. For this purpose Seeburg has developed a work and atmosphere music library specifically designed for industrial and commercial use.

Write. There's a Seeburg Distributor nearby to tell you all about Seeburg High Fidelity Music Systems, the new Seeburg Music Library and the revolutionary Seeburg Plan.



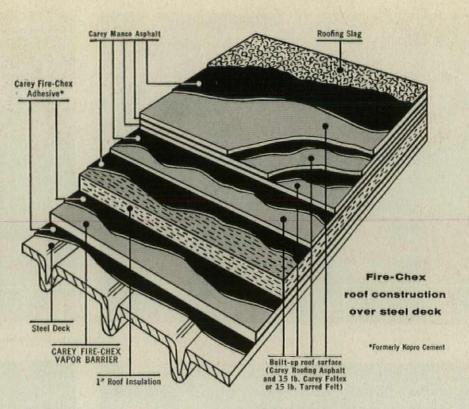


Seeburg Background Music Library. Work and atmosphere music. Monthly refresher service. Manufactured for Seeburg by RCA-Victor Custom Record Division.

J. P. Seeburg Corporation, Chicago 22, Illinois

COPR. 1955 SEEBURG MUSIC LIBRARY, INC.

Removes all doubt about the fire-safety of built-up roofing!



#### Carey Fire-Chex Asbestos-Plastic Vapor Barrier



Application is Easy—
Simply apply Carey Fire-Chex Adhesive\* with brush or spray over entire deck. When adhesive becomes tacky...



Apply a full 36" wide sheet of Fire-Chex Vapor Barrier, sanded side to deck. Allow 3" side lap, 6" end lap.



Seal both ends securely with Fire-Chex Adhesive. Continue application, lapping each sheet 3". Now apply insulation and built-up roofing.

In Carey FIRE-CHEX, you have a vapor barrier that does not contribute to fire and cause it to spread! Even when installed over a standard steel deck that becomes red-hot in a fire, FIRE-CHEX remains intact—does not release melting asphalt and excessive gases! Product of over a million dollars invested in development, tests prove FIRE-CHEX removes all doubt about fire-safety in built-up roofing.

Serving Industry, Farm and Home Since 1873

Why take chances with ordinary, hazardous vapor barriers that have been responsible for multi-million-dollar industrial plant fires? FIRE-CHEX assures you priceless protection for your buildings—and is available for just a few cents more per square than the conventional type.

Write today for a sample of this Carey dependable product, and for your copy of the FIRE-CHEX Specification Sheet. Or, request a Carey Industrial Sales Engineer to call, Address Department AF-5.





Asbestos-Plastic

#### Fire-Chex Vapor Barrier

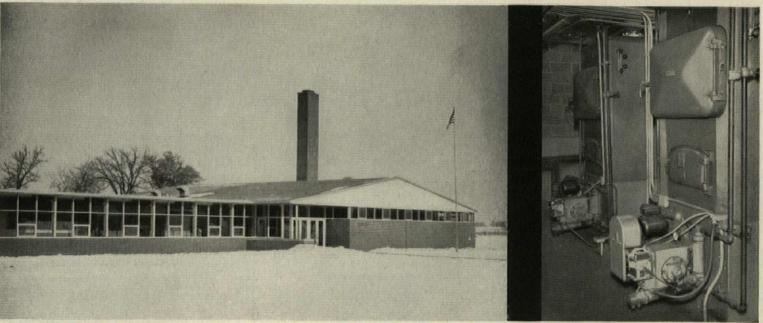
... does not contribute to fire!

THE PHILIP CAREY MANUFACTURING CO. Lockland, Cincinnati 15, Ohio In Canada: The Philip Carey Co., Ltd., Montreal 3, P. Q.

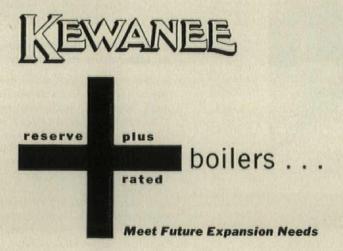
Built-up Roofs ● Asbestos and Asphalt Saturated Felts ● Roof Coatings and Cements ● Fiber-Flex Glass Roof System Careystone Corrugated Asbestos-cement Roofing & Siding ● Thermal Insulations

How a school

an extra boiler



Architect: Warren W. Kane, Austin, Minnesota; Engineer: Richard W. Evans, Minneapolis, Minnesota; Heating Contractor: P. J. Gallagher & Sons Company, Faribault, Minnesota.



Architect Warren W. Kane and R. W. Evans, Consulting Engineer, faced two heating problems in designing the Brownsdale Consolidated School, Brownsdale, Minnesota:

- (1) Providing enough heat for health and comfort during rigorous winter days;
- (2) Assuring sufficient reserve power to heat 4 additional classrooms a census study indicated for the future.

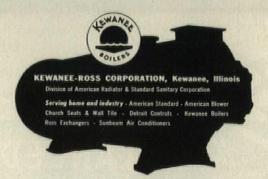
Solution: 2 Kewanee Reserve Plus Rated Boilers with 50% extra power built in to meet the emergencies of today and the demands

Present Result: The first Minnesota winter passed with adequate heat, even though windows were single glass without storm protection.

Future Result: No need to install an extra boiler to heat 4 additional classrooms, since Kewanee Boilers are rated against nominal capacity with reserve to meet expansion needs.

Moral: To school systems-Avoid selecting boilers rated against maximum capacity. They lack reserve for future growth.

Moral: To anyone concerned with the specification of boilers-Don't be lured by false promises of economy or "first cost" of under-powered boilers . . . those adequate to meet only average needs. Select Kewanee Reserve Plus Rated Boilers with sufficient reserve to provide for fluctuating loads, emergencies and expansion.

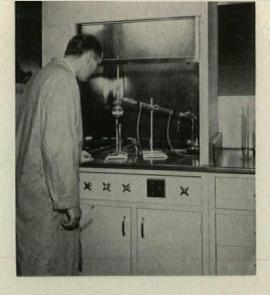


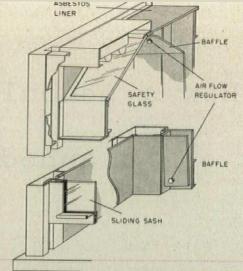
YOU can depend on KEWANEE engineering

Continued from p. 238

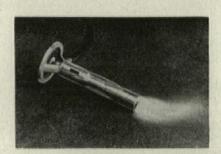
#### ROOMY FUME HOOD rids labs of poisonous gases

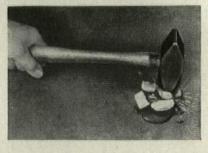
Metalab's chemical fume hood is more mechanically inclined than it looks. The firm's latest addition to its cleanly planned, tastefully hardwaored *Metal-Aire* line of laboratory equipment is housed in an enameled steel chamber lined with impregnated asbestos fiber sheet. Allowing for the proper evacuation of obnoxious gases and bad air, the chamber is completely vaporproof where necessary. The upper part contains a slop-





ing, laminated glass roof, fluorescent fixture, and baffles for radial air-flow adjustment. The safety-glass sliding sash is operated by means of concealed ball-bearing sheaves. Made in 8' and 10' heights, the 2½'-deep chamber comes in widths up to 6'-2". Approximate price of model pictured: \$700. Manufacturer: Metalab Equipment Corp., Hicksville, Long Island.





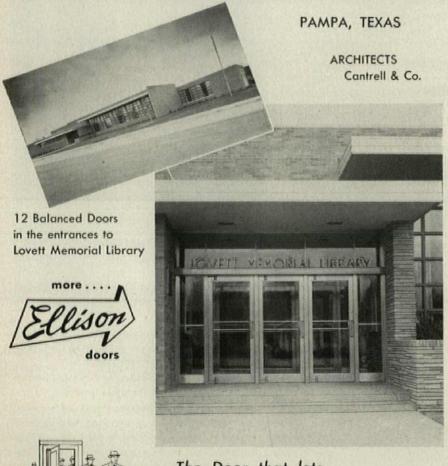
#### SATIN SHEEN STONE withstands abuse as laboratory countertop

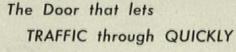
Eyeing the rugged work-surface requirements of industrial and school laboratories, Johns-Manville engineers have produced Colorlith, a pleasant colored, waxy surfaced composition that even a lab novice would have trouble damaging. The new stone topping (also suitable for some wall treatments) is a blend of Portland cement and asbestos fibers formed under tremendous hydraulic pressure into a dense homogeneous board with high tensile, compressive, and shear strengths. Easily machined with metal working drills and routers, Colorlith has good screw holding properties. Most chemicals cannot stain it, and it defies abuse from heat and impact. Made in 4' x 8' sheets in six thicknesses from 4" up to 14", Colorlith is produced in a flannel-suit gray tone and in cocoa brown. Price (around \$1 per sq. ft. in large orders for the thickest) is somewhat lower than slate.

Manufacturer: Johns-Manville, 22 E. 40th St., New York 16, N.Y.

continued on p. 246

#### LOVETT MEMORIAL LIBRARY





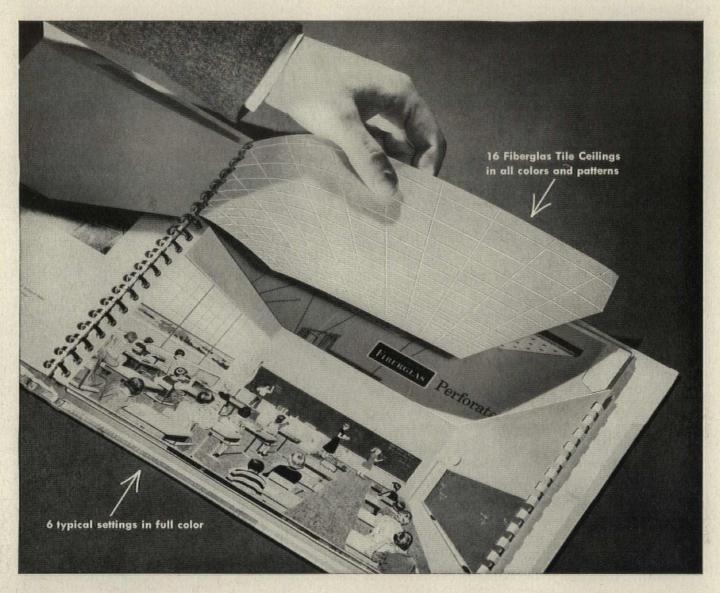
Ellison

ELLISON BRONZE CO.

Jamestown, New York

representatives in 73 principal cities in the United States and Canada

the BALANCED DOOR



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#### all in one helpful book!



Now—a client service never before available to architects! The ingeniously-designed Fiberglas\* Sound Control Ceiling Selector that enables you to show your clients every Fiberglas Acoustical Tile Ceiling in every type of interior—before they build!

Settings include a school room, office, hospital lobby, supermarket, modern shop and cocktail lounge. You simply select the room you want and turn the ceiling pages until you find the most suitable ceiling design and color.

This fascinating new book also gives all the

details about every type of Fiberglas Tile Ceilings . . . tells about their efficiency, fire-safety, permanence, low cost and easy maintenance. You'll find it the most convenient and complete presentation in the field.

You and your clients will enjoy seeing this outstanding book. Just call your nearest Fiberglas branch or Fiberglas Acoustical Contractor (see the Classified Telephone Directory), or write: Owens-Corning Fiberglas Corporation, Dept. 171-E, Toledo 1, Ohio.



#### SOUND CONTROL PRODUCTS

Textured, Perforated, Sonofaced\*, Stria\* Acoustical Tiles • Textured, Sonofaced Ceiling Board • Noise-Stop\* Baffles.

architectural FORUM / May 1955



## AMWELD EASI-FOLD is a SAFER bleacher!

You can make your next school job absolutely safe with Amweld Easi-Fold Bleachers. A triumph of engineering skill, these folding bleachers cannot collapse. Open supports are braced and locked cannot fold in use. Special design eliminates danger of pinched fingers or legs.



#### SEND FOR INFORMATION

Amweld Easi-Fold Bleachers are ideal for all indoor spectator seating. Write for details today or see our catalog in Sweets' Architectural File No. 22.

TIONAL PRODUCTS DIVISION

AND MANUFACTURING COMPANY

534 DIETZ ROAD

WARREN, OHIO

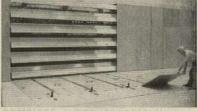
#### EASIER SWEEPING

Under structure is simple and unclutteredmakes "after game" clean-up quick and easy—plenty of room to push a floor brush.



FOLDS FLAT AGAINST WALL

When not in use, Amweld Easi-Fold Bleachers fold up—out of the way—yield an extra bonus in usable floor space.



COMPLETE FLOOR PROTECTION

Floor protected when Bleacher is opened. Casters and vertical supports rest on protective cover—cannot mar expensive wood floors.



ONE MAN CAN OPERATE

Easi-Fold Bleachers roll out smoothly—are perfectly balanced for easy one-man opening and closing.



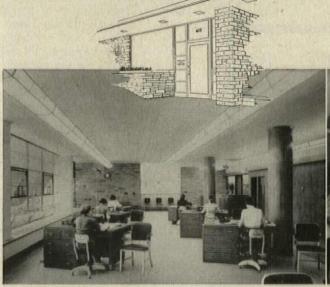
### Automatic Controls

at Wisconsin Bell, it's

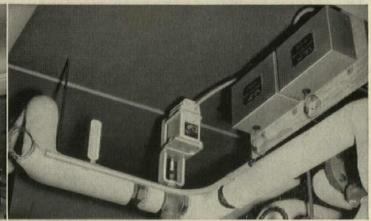
"better control . . . electrically"

Telephone engineers, keenly aware of speed, accuracy, and dependability of electrical equipment, are using electric-electronic controls for heating, ventilating, cooling, and humidifying their buildings. New structures, additions, and modernized exchanges are getting "better control . . . electrically" as the telephone industry's huge expansion program moves ahead. Here, in Beloit, Wisconsin, is a typical all-electric installation, utilizing the very latest in control developments to guard sensitive telephone equipment from moisture damage, plus providing indoor comfort for employees and visitors. Similar systems are being installed in exchanges throughout the nation.

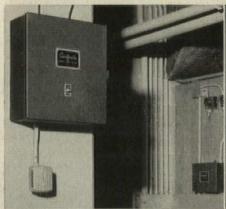
Architects: Grassold-Johnson & Associates. Consulting Engineer: Joseph H. Volk (deceased). Heating & Ventilating Contractor: Thos. E. Hoye Heating Co. Sheet Metal Contractor: Louis Hoffman Co., Inc.—all from Milwaukee, Wisconsin.



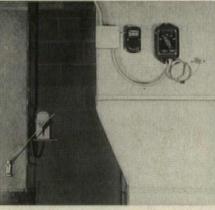
Attractive, modern offices — electric controls provide comfortable atmospheric conditions which encourage continuing employment, clerical accuracy. Desired temperature and humidity are maintained "on the nose."



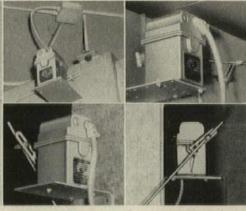
Adjustable ratio outdoor reset controls in cabinets actuate two 3-way valves. One valve controls water temperature for ceiling panel heating system. Other valve controls temperature for hot water radiation system.



Control Center cabinet serves as central junction box, houses prewired accessories, numbered terminal strips. Humidity control panel at right.



Remote bulb Microtherm on return air duct, operates proportioning valve on coil. Damper motor (left) positions return air damper.



Dependable, powerful, electrically operated Control Motors provide positive positioning of dampers in supply and return air ducts.

Flexibility and economy of electric-electronic control systems are well illustrated in this application. Two outdoor reset control systems assure maintenance of even, comfortable temperatures inside, with minimum waste of heat. One system controls ceiling panel heating, the other, hot water radiation. A small overhead heating unit in the basement has its own set of controls. Ventilating equipment and humidifiers are likewise equipped with individual control systems. Availability of power lines throughout the building simplified installation, decreased costs.

Every building, large or small, can be provided with similar flexibility and reliability at costs often lower than anticipated.

Check with your nearby Barber-Colman Field Office (consult phone directory) for expert engineering counsel, latest literature, and prices. Join the modern trend to "better control . . . electrically!"

#### Barber-Colman Company

Dept. Q, 1335 Rock Street, ROCKFORD, ILLINOIS, U. S. A.

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Automatic Controls • Air Distribution Products • Industrial Instruments Aircraft Controls • Small Motors • Overdoors and Operators • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

Continued from p. 242



#### CALL SYSTEM with multiple stations made for patient-nurse conversations

A nurse whose duties take her to the end of a long corridor or into a utility room or pantry can spot any of her patient's calls by a chime and light on the *Multi Audio-Visual* board and carry on a two-way conversation without returning to the hospital floor's main desk. Providing for any number of control stations along a corridor or in different wings on the floor, this new

electronic nurse-call intercom should allow for more flexibility in monitor assignments as well as save many time-precious nurses' footsteps. A call is registered at all stations as well as the main desk; once answered, signals go out and the system resets automatically for the next one. On the patient's end, a red lamp indicates when the nurse's station is open and a white lamp shows his call has registered. Volume on the system's sensitive voice pickup can be regulated to transmit a slight whisper or weak breathing of a very ill patient. Incorporated in the Multi Audio-Visual is an emergency signal circuit for toilets which activates a chime and flashing light, and can be turned off only after the nurse has gone to the patient's assistance. Price on equipment for a Multi Audio-Visual set-up for a hospital floor with 20 semiprivate rooms would run about \$1,850, not installed. This includes two nurses' call stations and one duty room station, which is designed to receive calls only.

Manufacturer: Executone, Inc., 415 Lexington Ave., New York 17, N. Y.

#### NEW GIANT OF THE INDUSTRY

## Caldwell HELIX



#### HEAVY DUTY SPIRAL SASH BALANCE

Pretensioned at factory. Easy to adjust on the job.

Locking piece holds spring out of tube during installation.

Seamless, rustproof aluminum tube.

Durable, oil tempered high carbon spring.

Bracket arm is separately attached to speed installation.

Cadmium plated spiral torque rod with graduated twist. SPECIFICALLY DESIGNED FOR INSTITUTIONAL AND COMMERCIAL SASH WEIGHING UP TO 70 LBS.

#### CHECK THESE BIG ADVANTAGES

- Requires no head or side room, no mortising of frame
- 2. 25% less wood is removed in routing.
- Specially designed for quick and easy installation.
- Tension can be adjusted after balance is installed.
- Allows modern window appearance through narrow trim.
- Assures smooth, effortless window operation throughout travel of the sash.
- 7. Guaranteed for LIFE of the building.

WRITE TODAY FOR COMPLETE INFORMATION!

Caldwell

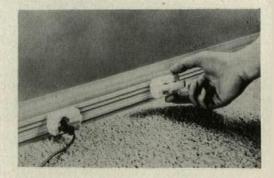
Specify Spirex spiral spring sash balances for up to 30 lb. sash.

Caldwell clock spring sash balances available for up to 105 lb. sash.

CALDWELL MANUFACTURING CO., 69 Commercial St., Rochester 14, N. Y.

#### FLEXIBLE OUTLET updates building current sources

No utility provided in older buildings is being outgrown so fast as wiring. By turning sparse, poorly spotted wall plugs into series of useful outlets in usable places, and eliminating tanglefoot extension cords, Bulldog Electrostrip continuous outlet is in itself a modest modernization program for a hotel, hospital, school or store. No wall cutting or line fishing is necessary as the UL-approved power source connects to any existing outlet box with a feed-in device, and its prewired plastic strip attaches neatly along baseboard or wall. Semirigid, the ivory colored vinyl can be bent around corners. In new construction it may be recessed. Patented receptacles-each fused



to prevent circuit overloads—are snapped over any point along the *Electrostrip*'s groove. Lifting a little lever on the plug releases it for duty elsewhere when furniture is rearranged or new appliances need current. The strip is available in 250' rolls. *Manufacturer:* Bulldog Electric Products Co., Electrostrip Div., 7610 Joseph Campau Ave., Detroit 32, Mich.



# ONLY ARCHITECTURAL PORCELAIN ENAMEL GIVES YOU COLOR COLO

that adds dramatic warmth and beauty to any building. TEXWALL, the porcelain enameled steel insulated architectural panel by Texlite, gives you the widest choice of lifetime shades.

## ONLY ARCHITECTURAL PORCELAIN ENAMEL GIVES YOU ELECTRICAL PORCELAIN ENAMEL GIVES YOU ELECTRICAL

for variety of effect and visual interest. TEXWALL excels in surface textures.

# ONLY ARCHITECTURAL PORCELAIN ENAMEL GIVES YOU ONLY ARCHITECTURAL PORCEL

that is fresh and individual. TEXWALL can capture your ideas for interesting contrasts and dominant motifs.

is America's most versatile, most beautiful building material for use in thinwall construction. Such outstanding new buildings as the Statler-Hilton Hotel in Dallas and the Mile-High Tower in Denver use TEXWALL insulated architectural panels for exterior beauty, space saving, faster erection and many other advantages. For the complete story on all the advantages of "TEXWALL BY TEXLITE" see the Texlite section in Sweet's Architectural File, or write direct.

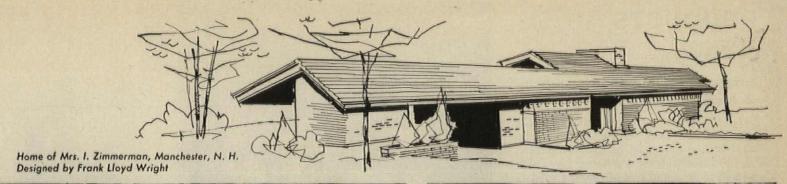
ARCHITECTURAL PRODUCTS DIVISION

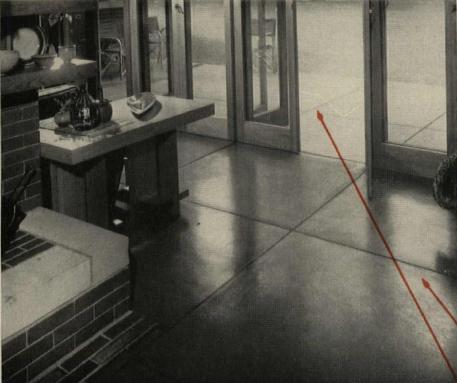
TEXLITE

3305 Manor Way DALLAS, TEXAS

In our 76th year of progress

Offices in New York, Chicago, Los Angeles, Houston, Atlanta, Denver, Tulsa









"From the first rough sketches . . .

## Frank Lloyd Wright specified Colorundum floors for their warmth of color and beauty."

Mrs. I. Zimmerman, Manchester, N. H.

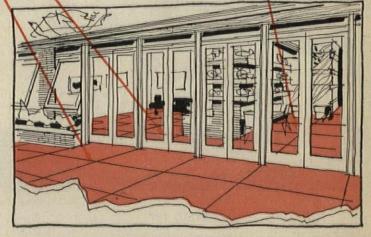
"Look at these photographs of our exciting new home and you can see why we just wouldn't consider drab, colorless concrete. From the first rough sketches," writes Mrs. Zimmerman, "we planned attractive, luxurious Colorundum for the patio and the service areas... especially when we found out how little it cost!"

Colorundum is the ideal solution to the problem of exposed or uncarpeted areas of plain concrete. It provides colorful, wear-resistant floors at just a fraction of the cost of tile.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, metal or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.





Fused color. Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.

A. C. Horn Co., Inc. Dept. H12-516, 10th Street	& 44th Ave., Long Island City 1, N. Y.		
☐ Please send me complete information on COLORUNDUM.			
Name	Title		
Firm Name			
Address			
City	State		

DIVISIONS OF SUN CHEMICAL CORPORATION

HORN • HUDSON • WILLEY (paints, maintenance and construction materials, industrial coatings) • WARWICK (textile and industrial chemicals) • WARWICK WAX (refiners of specialty waxes) • RUTHERFORD (lithographic equipment) • SUN SUPPLY (lithographic supplies) • GENERAL PRINTING INK (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • MORRILL (news inks) • and ELECTRO-TECHNICAL PRODUCTS (coatings and plastics)

Continued from p. 246

#### CONCRETE AIR-GUNNING RIG has builton aggregate blender

It takes only one gunning machine but many mixes to do the sundry new-building and restorative jobs calling for air-placed concrete. So the makers of the *Bondactor* have augmented their compressed air gunner with an aggregate proportioner-mixer-elevator in one packaged, portable rig, the *Airplaco*. Useful for fresh-coating masonry encasements, walkways, flooring and retaining walls, as well





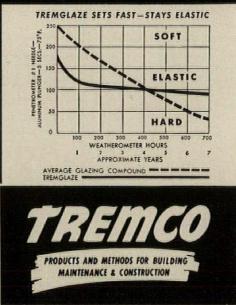


#### The Safe Specification for Modern Glazing of Modern Windows

Combining fast setting with long elastic life, TREMGLAZE is the safe specification for modern glazing of modern aluminum, galvanized—bonderized and stainless steel windows. In several weeks, TREMGLAZE sets as firmly as do other glazing compounds in I-I/2 years—then provides safe, long lasting protection. For complete assurance when writing glazing specifications—specify TREMGLAZE.

THE TREMCO MANUFACTURING CO. CLEVELAND 4, OHIO

THE TREMCO MFG. CO. (Canada) LTD. TORONTO, ONTARIO



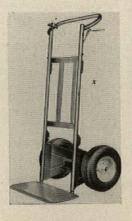
as for applying cementitious insulations, waterproofing and stucco, and for wet and dry sandblasting, the conmunation equipment is available in models with % up to 6 cu. yd. per hour placement capacity. The 4 cu. yd. model pictured costs about \$5.000 complete.

In operation, the dry materials are poured through a proportioning chute and blended by an auger. A bucket conveyor lifts the uniform mix, deposits it in a reservoir on top of the *Bondactor*. As the premixed aggregate is needed it is released into the hoppers and fed under pressure into the hose. An atomized spray thoroughly hydrates the aggregate at the gun nozzle. Thus doused, adequately but not sloppily, the low water-ratio mix is said to assure an extremely dense and lasting bond.

Manufacturer: Air Placement Equipment Co., 1011 W. 24 St., Kansas City, Mo.

#### HAND TRUCK totes heavy loads up and down stairs and ramps

A novel materials handler, the Stair Cart helps a workman roll a 250 lb. lead up steps without strain and lets him ease twice that weight safely down stairs or a ramp. As the operator pulls a cable drive, a ratchet gear takes the cart up over the hurdles. During descents, two-wheel brake controls guard against runaways. Featuring 4" x 12" pneumatic tires and interchangeable platters, the tubular steel hand trucks come in six power-drive models for handling various





types of industrial equipment and building materials. Prices range \$95 to \$125, F.O.B. Manufacturer: Valley Craft Products, Inc., Div. of O'Neil-Irwin Mfg. Co., 750 Jefferson, Lake City, Minn.

# NOTICE

new bulletin board material adds pleasing color to any classroom

# CKBO

# PASTEL TONES

\* PUEBLO GRAY - No. 754

\* CORK TAN - No. 756

\* CORAL - No. 758

\* SAGE GREEN - No. 752

O matter what color scheme you choose for a classroom, you'll find a shade of Armstrong Tackboard to harmonize with your choice.

Armstrong Tackboard colors won't fade or wear off because they go all the way through. And the restfully colored, fine-textured Armstrong Tackboard surface is specially designed to help reduce eyestrain and nervous fatigue.

Tacks are easily removed from this resilient new material, yet it will stand up under years of constant use without need for painting or other refinishing. Most soil spots can be easily removed with art gum or other soft rubber eraser.

Armstrong Tackboard is stocked by leading school supply houses. It comes in continuous roll form, 48 or 72 inches wide, and in 1/3" and 1/4" gauge. Bulletin boards up to 85 feet long can be installed in one piece, reducing installation time and resulting in a more attractive job.

We'll gladly send you samples of Armstrong Tackboard. Just write to Armstrong Cork Company, Industrial Div., 8305 Drake Street, Lancaster, Pennsylvania.

Armstrong TACKBOARD



# The PROOF of a building's age is behind these doors!

Five seconds behind these doors, and you know your building's age!

Notice the plumbing fixtures. If they are off-the-floor . . . your building is new forever. If not . . . it is obsolete when the doors first open.

Off-the-floor fixtures installed today will never give away the age of your buildings. Year after year, they will continue to contribute to the desireability—and marketability—of your investment. They add spaciousness. They free washrooms of litter-traps and breeding grounds for bacteria. They do away with obstacles to easy cleaning and hospital-like sanitation.

In today's major buildings, more than 800,000 such fixtures are supported on the ZURN SYSTEM. You should look into the reasons why. You will find, among other things, that Zurn-engineered, patented features simplify installation and alignment. The entire stress is on the Zurn fitting—not on the wall. And ZURN SYSTEMS never interfere with future alterations, but often make them easier.

Buildings age fast enough. Do not give yours a running start by designing washrooms that are obsolete when the doors first open.

Before planning your next building, be sure to write for the helpful new booklet, "Behind Closed Doors." It is your guide to modern, sanitary washroom decor. 110-1

J.A. ZURN MFG. CO.

PLUMBING DIVISION

ERIE, PA, U.S.A.



The ZURN ZERO ZONE is created by mounting off-the-floor plumbing fixtures on behind-the-wall ZURN SYSTEMS. This permits the highest degree of rest room sanitation to be attained and maintained. All major plumbing manufactures make fixtures to fit the ZURN SYSTEM.

See our catalog in Sweet's Industrial Construction File, 13a.

COPYRIGHT 1955 - J. A. ZURN MFG. CO.

# ALUMINUM WINDOWS by GENERAL BRONZE

Selected for Standard-Vacuum Oil Co. Building after University of Miami "Hurricane Tests"

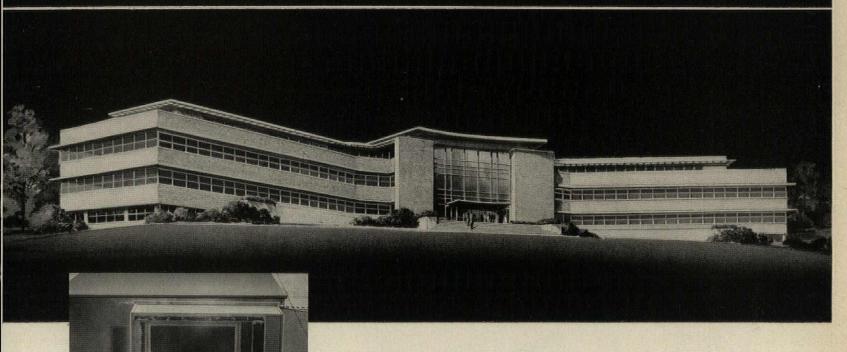


Photo above shows actual testing of 6' x 6' aluminum window at the University of Miami, Florida. This was a wind and water test to determine air and water leakage of entire assembly with winds of 100 mph accompanied by the equivalent of 4" of rain per hour, sustained for 10 minutes against the surface of the window.

Top photo: Standard-Vacuum Oil Co. Office Bldg., Harrison, N. Y. Archifects: Eggers and Higgins Contractor: Starrett Bros. & Eken, Inc. When performance is one of the major requirements, you'll find more and more jobs calling for aluminum windows by GENERAL BRONZE.

It's no surprise to the building industry, therefore, that General Bronze's single-hung aluminum windows were selected for the new general office building of Standard-Vacuum Oil Company at Harrison, N. Y.

The selection of General Bronze windows, after extensive "hurricane tests" conducted by the University of Miami Testing Laboratory for air and water leakage, is another tribute to the design, engineering and fabricating skill of General Bronze.

The General Bronze single-hung window selected by the architects, Eggers and Higgins, and the builder, Starrett Brothers & Eken, Inc., is a new type window developed by General Bronze engineers and is proving extremely popular in many new installations. It is the same type window that has been selected for use in the New York Coliseum.

If you have a fenestration or curtain wall problem, it will pay you to consult with our sales engineers. They are anxious and ready to serve you at all times. Our catalogs are filed in Sweets.



#### GENERAL BRONZE CORPORATION . GARDEN CITY, N. Y.

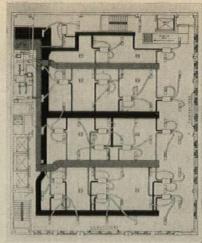
PERMATITE DIVISION—Custom-built Windows, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in steel and iron.

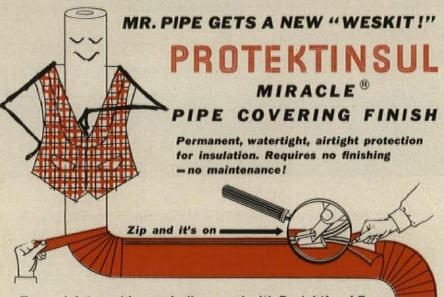
#### **PRODUCTS**

Continued from p. 250

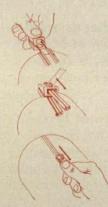
AIR MIXER maintains even room temperatures at steady delivery volume

Constancy of both room temperature and conditioned air volume is boasted by Dual Duct proportioning chamber for high-pressure delivery systems. Engineered for independent control of air temperature and supply rate, the new unit maintains room temperatures within 11/2° variance, and keeps delivering air at whatever quantity it is set for-regardless of how tempera-





Turns, joints and laps spirally wound with Protektinsul Tape, brushed with Vinyl Sealer.



PROTEKTINSUL, new thermal insulation pipe and duct covering finish, is a .012" thick, prefabricated, poly-vinyl chloride outer finish that effectively protects insulation against weather, abrasion, chemicals, and mildew. Prefabricated to exact size, PROTEKTINSUL zips on and locks in place, requiring no cutting, fitting, sewing or painting in the field.

Never before a pipe and duct covering finish to give this combination of protection and beauty so important to institutions, hospitals, schools, where cleanliness is such an essential factor. Available in standard colors, or color combinations, for identification.

Method of applying Zipper to covering.

> FREE: PROTEKTINSUL brochure gives vital information for architects on this unique development for insulated pipe and duct coverings, complete with details, properties, and specifications. Write for your free copy today.

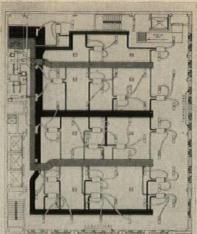


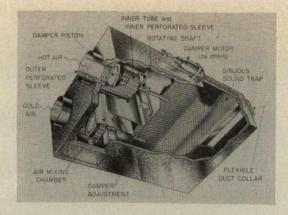
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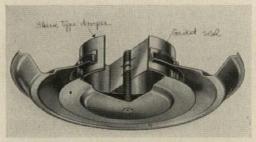


tures of the air-mix must change from minute to minute to meet different cooling or heating loads.

Each Dual Duct box preblends air for up to four outlets. Its damper consists of a pair of perforated pistons which glide back and forth over two fixed inner sleeves, also holed. Air flow proportion from each of the fixed cylinders-one for hot air, the other cold-is governed by size of the openings created as the moving slots pass over the stationary ones. Either duct can be blocked off entirely without altering over-all quantity, as the cam arms on both perforated outer pistons are operated by a single thermostat: one zigs when the other zags. (To compensate for different static pressures in hot and cold air ducts, the engineer who balances an installation adjusts the damper pistons individually. In the cutaway diagram (above), the chamber is set for half-and-half delivery, but fewer rows of holes are exposed for hot air then cold to equate maximum air volumes of each while maintaining constant total flow.) Serving actually as a valve as well as a reducing chamber, Dual Duct units are made in capacities up to 1,000 cfm operating at static pressures up to 6".



Another Connor product, the ABC dampered diffuser is reported to thwart telltale smudge rings as well as drafty delivery. The new ceiling assembly of spun steel has an integral antismudge cone



which deflects the high induction air stream just below the ceiling so that as supply air mixes rapidly with room air there is no shadowy trace of delivery deposited on ceiling surface. List prices range from \$21.50 for an ABC with 4" neck diameter up to \$50 for a 12".

Manufacturer: Connor Engineering Corp., Danbury, Conn.

continued on p. 260

## For high quality concrete work...

# high quality

American Welded Wire Fabric



PREFABRICATED ROLLS of American Welded Wire Fabric wound on large mandrels can be unrolled continuously from beam to beam, making installation easy and assuring continuous reinforcing.



LEVER HOUSE contains American Welded Wire Fabric Reinforcement. American Fabric often exceeds the new ASTM Specification A185-53T; it puts an extra margin of safety in your designs.



Reinforcement is the backbone of your concrete structures, so it pays to specify the best wire fabric for walls, floors, roofs, and concrete ground slabs. And the very best is American Welded Wire Fabric.

American Fabric not only meets the new ASTM Specification A185-53T, it often exceeds it. We make a concerted effort all along the line, in making the steel, in drawing the wire, and in fabricating and testing the fabric, to see that American Welded Wire Fabric is the best it's possible to make.

This pays off for you, because you can use it with confidence in your designs, knowing that it will give your concrete more than the calculated strength and resistance to cracking.

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UNITED STATES STEEL

Glidden Announces: New commercial and institutional painting service

# PAINTING ANALYSIS



Demonstrations of new latex, alkyd and vinyl paints can save your company thousands of dollars, help you train men in application of new paint products.

tion analysis of any commercial and institutional painting problem. This new service can be as comprehensive as you wishanything from stain for a paneled office to special paint formulations to end corrosion on a water tower. A Glidden Painting Analysis can help you train personnel, work out safety markings, make color efficiency tests or work out complete office and plant redecoration! Pictures at left show a few of the ways a

Now Glidden offers a no-cost, no-obliga-

Glidden painting analysis can help you. For more information or for specific helps, fill in coupon below.



offices.





New catalog includes complete specifications and product guide, selector charts, color chips, information on surface preparation, special finishes of all types-this book is a must for reference; training of personnel; purchasing guide.

# Glidden Professional Finishes



The Glidden Company **Maintenance Finishes Division** Cleveland 2, Ohio



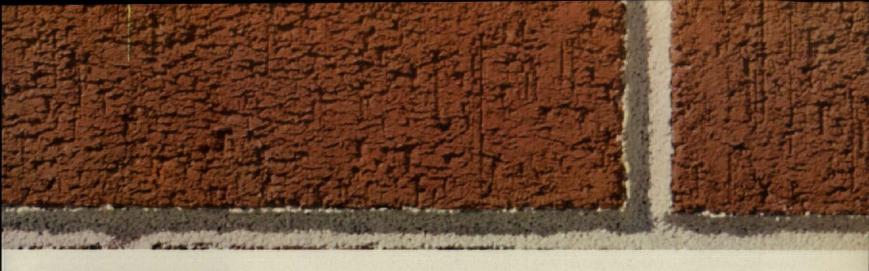
Fill in	and Mail t	o The (	Glidden Co	o., D	ept. Al	-555
11001	Madison	Ave.,	Cleveland	1 2,	Ohio	

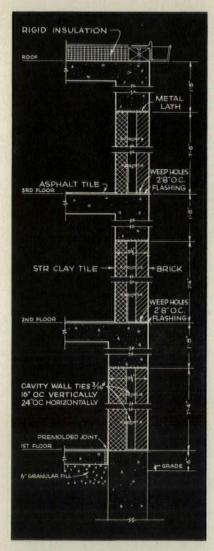
I am interested in complete details of Glidden Painting Analysis. I am particularly interested in: Product demonstrations for training purposes. Color Studio Service Safety marking Anti-corrosion finishes New Glidden complete line catalog

Title\_\_\_

Company\_ Address\_

Zone





# High in beauty...low in cost

Lowest bid on 40 of 48 U.S. Air Force Dormitories is for Brick and Tile Construction

Here is proof that natural beauty and structural stability can be combined with lowest construction costs.

This load-bearing brick and tile cavity wall proved to be less costly than skeleton frame in 40 of 48 bids for U. S. Air Force Dormitories at seven different bases.

Whether the need is for cavity walls, single-unit masonry, or reinforced brick masonry, the proper use of structural clay products can pay your clients lasting dividends—in initial and long-term savings, in appearance and permanence.

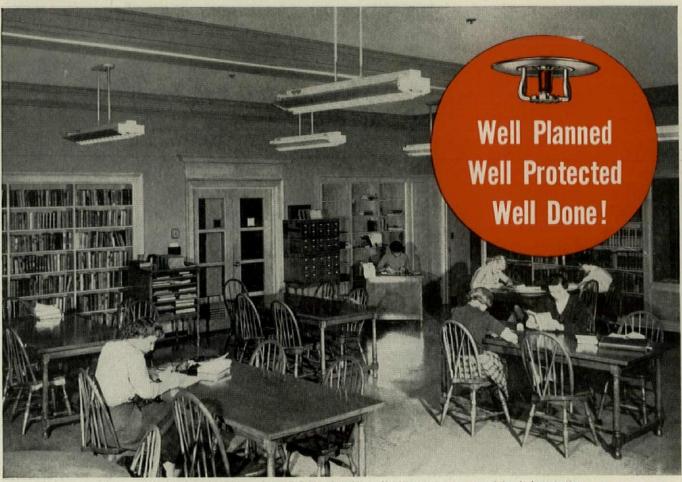
#### Structural Clay Products Institute

1520 18th Street, N. W., Washington 6, D. C.



Brick's natural beauty and variety are suggested here by only a few of the hundreds of types available.





Library at Westbrook Junior College. Grinnell Ceiling Sprinklers afford inconspicuous, around-the-clock protection.

#### Westbrook Junior College looks to



Arts and Crafts room has more than the average number of fire hazards. Here, too, Grinnell Sprinklers are constantly on guard.

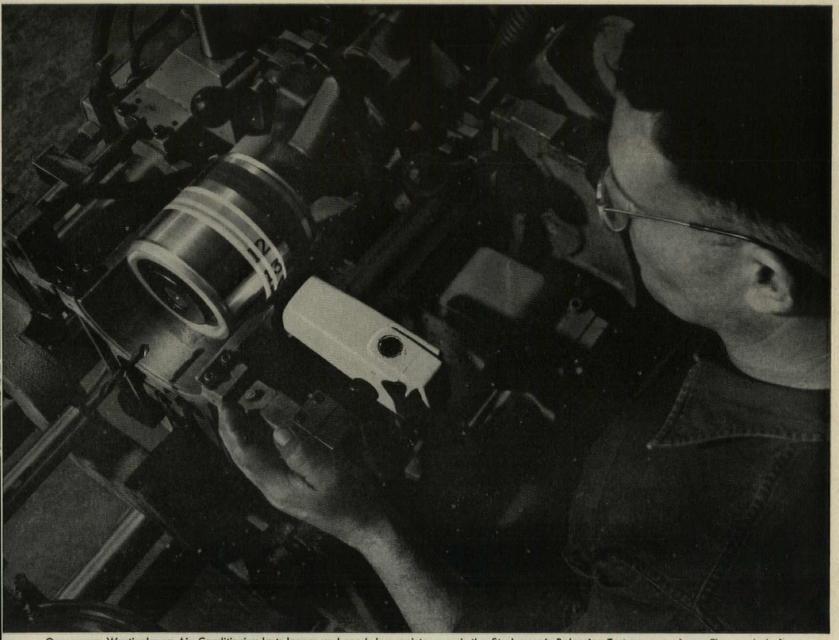
## GRINNELL SPRINKLERS

To make them completely fire-proof, Westbrook Junior College, Portland, Maine, installed Grinnell Sprinklers in many of its older buildings. The work was done so efficiently, and with such minor interruption to normal campus life, that Grinnell Sprinklers were again specified when a new building was planned in 1951.

Of interest to everyone concerned with smart, modern interiors is the functional way in which the new Grinnell System was handled. Where rooms had to appear particularly attractive and uncluttered, such as the library, Grinnell flush-type Ceiling Sprinklers — extending only a scant inch below the ceiling — were used. But where emphasis could be somewhat less on looks, regular Grinnell Sprinklers served. Either type, of course, is equally effective in quenching fire — quickly, automatically — at its source.

Most architects today are aware that there is a moral obligation to see that the buildings for which they are responsible are *completely* fire safe. So call on Grinnell when planning your next school, hospital, theater, office building, factory. There is a Grinnell System for *every* fire hazard. Write for literature on Grinnell Sprinklers. Grinnell Company, Inc., 292 West Exchange Street, Providence, R. I.





One reason Westinghouse Air Conditioning lasts longer and needs less maintenance is the Stroboscopic Balancing Test you see above. The crank-shaft-assembly of every compressor is inspected under the penetrating stroboscopic beam. This beam spots the minutest out-of-balance surface, and highlights it, by number, for correction. This is the type of testing that results in:

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## REYNOLDS

#### Pacific Mutual Life Insurance Company Building, San Francisco

Architects:

Loubet and Glynn, San Francisco, Calif.

**General Contractor:** 

MacDonald, Young and Nelson, San Francisco, Calif.

**Architectural Metal:** 

The Kawneer Company, Berkeley, Calif., and Niles, Mich.

Windows:

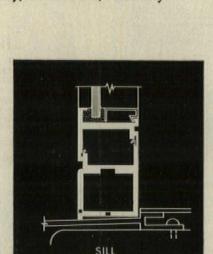
Reynolds Metals Company, Louisville, Kentucky

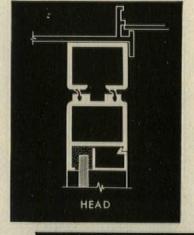
#### **Aluminum Applications In This Building:**

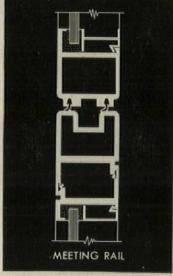
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#### **REYNOLDS ALUMINUM SERVICE TO ARCHITECTS**

Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, on applications of standard aluminum mill products, and on the use of commercially fabricated aluminum building products. They can help to coordinate varied aluminum requirements for procurement efficiency and economy. Please address inquiries to . . . Architect Service, Reynolds Metals Company, Louisville 1, Kentucky.

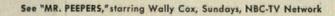




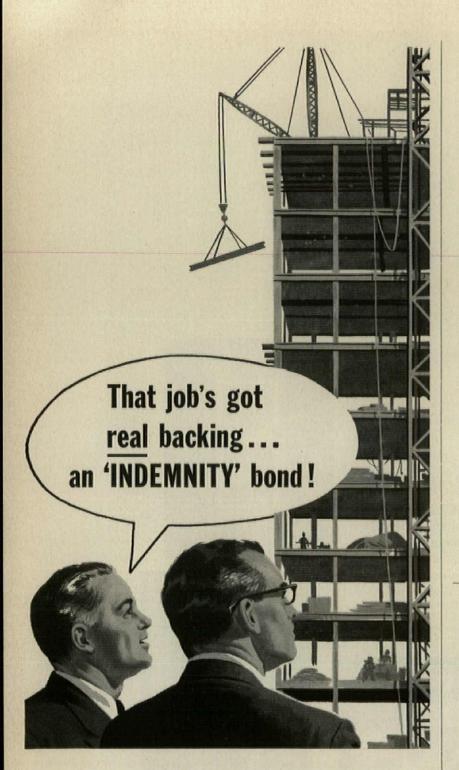




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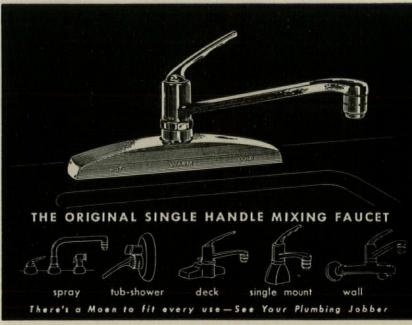
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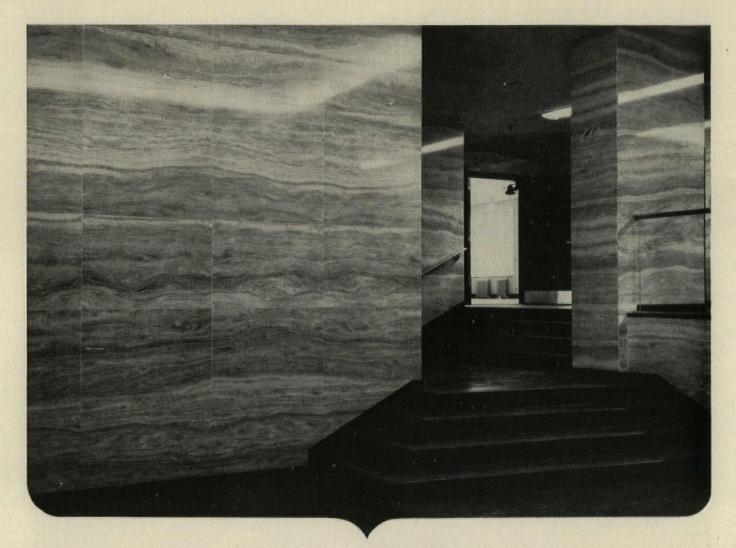
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#### MOEN VALVE COMPANY

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# marble

Vermont State Office Building, Montpelier, Vermont Freeman, French, Freeman, Architects



recommended because it was most economical

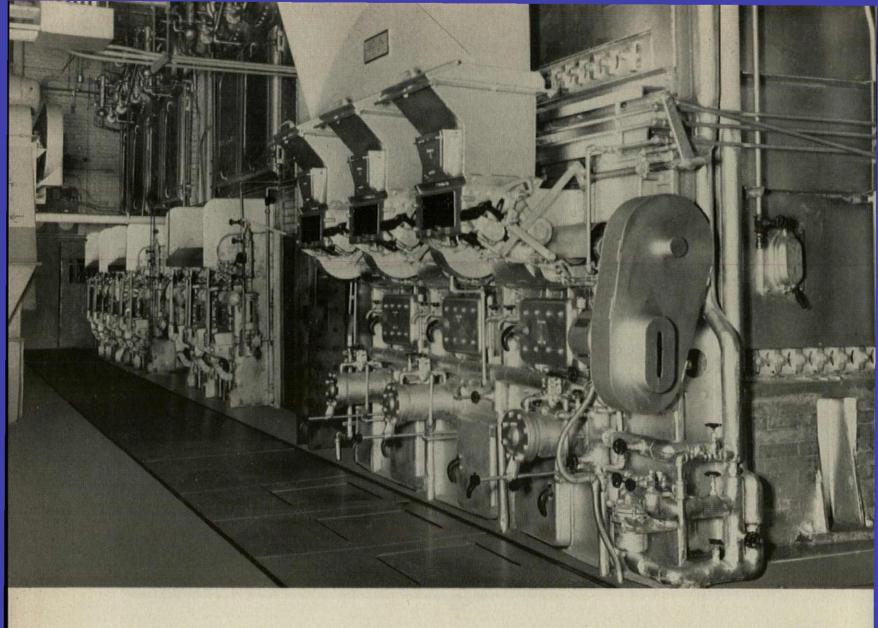
Writes Architect W. W. Freeman: "After careful analysis, we recommended that marble was the most economical from the long range point of view. The cost of interior marble ran only 3.2% of the total cost of the building.

"Marble on this project was used not only for the exterior but throughout the entrance lobby, all elevator lobbies, as floor tile throughout the first floor corridors, and as toilet partitions in all toilet rooms.

"We are most pleased with the results and the economy of maintenance experienced during the past 4 years."

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The results have been extremely gratifying. The boiler plant now maintains constant pressure under high steam demand, the steam coal rate has increased 4.1 and there have been no operating difficulties. In addition, other benefits include reduction of labor, satisfactory air pollution control and improved performance records.

#### **Investigate Your Fuel Costs**

If you're planning to modernize your plant or build a new one—or if you are just interested in cutting fuel costs—find out how coal, burned the modern way, compares to other fuels. Talk to a consulting engineer or your nearest coal distributor. Their advice may save you thousands of dollars every year.

#### facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available.

Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar.

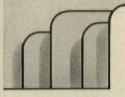
Automatic coal and ash handling systems can result in a virtually labor-free plant.

Coal is the safest fuel to store and use. No dust or smoke problems when coal is burned with modern equipment.

Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION Southern Building, Washington 5, D.C.



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deserve a place, we believe, in your files . . . .



The Easily Cleaned Bakeshop



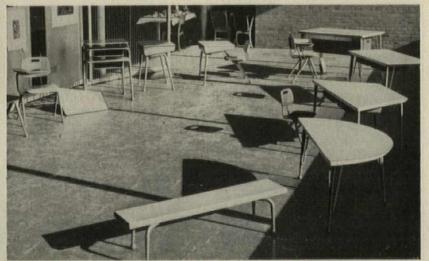
The Classroom of the Future



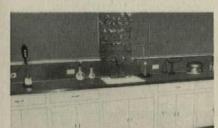
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Scuff Proof for Wainscoating



Never Dulling Brightness of Color

for you can count on it in many applications where color and design must *last*.

Since architects are constantly concerned with eye-appeal, they are interested in *durable* materials that endow their work with appropriate color and pattern. Work-surfaces in homes and institutions, for example, can be enhanced through the use of colorful, long-lasting plastic laminates . . . such as St. Regis Panelyte.

The underlying requirement of permanent protection of such surfaces is advantageously met by St. Regis Panelyte. It equals or excels the NEMA\* standards for Class I Laminates.

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Address Architects' Consulting Service Department, Panelyte Division, St. Regis Paper Company, 230 Park Avenue, New York 17, New York.



<sup>\*</sup> These are the performance standards set for the industry by the National Electrical Manufacturers' Association for thermosetting decorative laminates.



# speed dining service

IN MANY PROMINENT SCHOOLS



DINING ROOM SIDE

The Peelle standard single section, slide-up pass window can be made in any size. It is an adaptation of the Peelle dumbwaiter door unit. The pass window has an integral hollow metal frame; flush cup lift and barrel bolt

latches on kitchen side. Can be equipped with fusible link closing device for fire prevention. Door unit may also bear Underwriters' label. Many architects specify stainless steel for permanent cleanliness and low maintenance cost.

Standard architectural details and specifications furnished on request. For further description, refer to Sweet's Catalog 32C—Pe, page 10.

#### A FEW OF MANY SCHOOL INSTALLATIONS

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East Dover Elem. School Dover, New Jersey Hicksville High School Hicksville, Long Island, N. Y. Jr.-Sr. High School

Cattaragus, New York Penn's Creek Elem. School Authority Center, Penna.

Ritter School Allentown, Penna. Walt Disney Elem. School Tullytown, Penna. ARCHITECT

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MOBILE BANQUET TABLES PERMIT FLEXIBLE SERVICE In the main kitchen, hot food is loaded into these tables which are then wheeled directly to banquet serving areas. Waste steps in serving are eliminated. All stainless steel construction assures long service life and a high degree of sanitation with minimum labor.

# eliminating waste motion at Statler Hall, Cornell University

• Cornell University's Department of Hotel Administration is prominent for its educational leadership in the field of scientific hotel management. In its food service installation, functional stainless steel equipment plays a vital role in eliminating waste motion. The equipment is employed both for training purposes as well as for serving students, faculty and guests. The problem of integrating students' work areas with the main kitchen was solved by careful layout to permit smooth work flow. Significantly, the equipment is Blickman-Built . . . selected for its work-reducing, time-saving efficiency, low maintenance cost and high sanitary standards.

When you specify Blickman-Built stainless steel equipment for your mass-feeding projects, your installation will look right and work efficiently for many years to come.

#### MOBILE BINS ELIMINATE WASTE MOTION

In the bake shop, mobile stainless steel bins below baker's tables are wheeled directly to the supply section for filling. Rehandling is avoided — waste motion eliminated. Since there is no fixed enclosure, there are no hiding places for vermin. With bins removed, area below table is easily cleaned.

This attractive illustrated folder gives more information about Blickman-Built food service installations. Send for your copy.

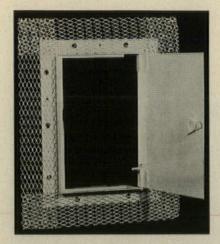




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#### **PRODUCTS**

Continued from p. 254

#### STEEL DOORS made for access to sundry wall-set utilities

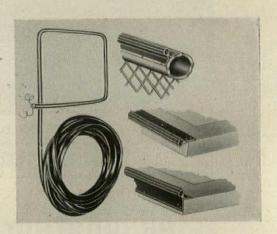
Providing entree to anything from electric switches and plumbing valves to laundry chutes, Philip Carey has opened up its steel access door line to offer 20 models in five sizes including lock types and basic units for masonry, plaster and dry-wall construction. The 14-ga. doors feature a hinge lift for quick removal. Flush frames and edges make for clean installation.

Coated with a rust inhibitive paint, the doors are shipped ready to put in their places. Prices, not installed, range from \$4.86 for the 8" x 12" model to \$11.14 for the 19" x 31" size.

Manufacturer: The Philip Carey Mfg. Co., Cincinnati 15, Ohio.

#### SAFETY SWITCH responds to touch on fluid filled tube

The Hydratube electrical switch has a longranged hydraulic antenna of vinyl tubing. Light contact at any point on the fluid-filled tube extension puts the switch into action. Useful as a safety edge on elevator, garage and fire doors as well as on machinery, Hydratube can be adjusted to react to pressures of 1 oz. up to 8 oz., and the perma-



nently sealed ½" diameter tubing can be bent more than 90° without impeding the switch's operation. A special rubber extrusion is available for mounting the tube on flat, round or uneven surfaces. Hydratube standard lengths are 6' and 12'; and it also can be obtained in runs up to 300 ft. for conveyor application; list price is \$9.00 for a 12 ft. length, F.O.B. Chicago.

Manufacturer: The Recora Co., 56 W. 103rd St., Chicago 28, Ill.

#### TECHNICAL PUBLICATIONS

#### CELLINGS

An Engineering Report on Wakon, The F. W. Wakefield Brass Co., Vermilion, Ohio. 8 pp.

#### CEMENT AND CONCRETE

Data on Vermiculite Concrete Panel or Spandrel Walls, AIA. File No. 4-E-13. Vermiculite Institute, 208 S. LaSalle St., Chicago 4, III. 68 pp.

High Early Strength Portland Cement, Medusa Portland Cement Co., 100 Midland Bldg., Cleveland 15, Ohio. 4 pp.

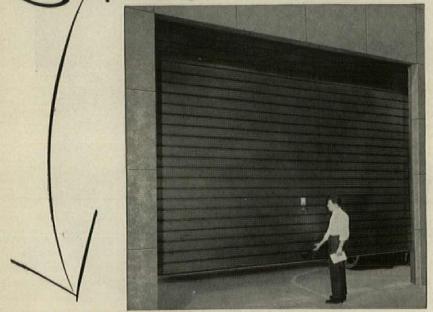
#### FLECTRICAL EQUIPMENT

Chester Plasticord-Plasticote Neon Sign Wires & Cables. Chester Cable Corp., Chester, N.Y. 2 pp.

Continental Unit Substations. Bul. 102. Con-

continued on p. 266

Cimplicity... the keynote of modern design



MORRISON

BOUDD Steel sectional doors

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that blends with all types of architecture is the hallmark of Morrison Roly-Doors.

SIMPLIFIED DESIGN ensures safe, easy, trouble-free installation and operation . . . manual, electrical and by remote control.

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BONDERIZED, ALL-STEEL, WELDED CON-STRUCTION provides lasting good looks and a durability that defies the weather and years of hard use.

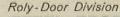
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OVER 100 STANDARD SIZES ready for immediate delivery and facilities to produce special sizes to individual specifications provide a Roly-Door for every overhead door requirement.

prompt delivery and expert installation service are offered by Roly-Door Distributors and Dealer-Installers located in the principal cities of the U.S. and Canada. They are listed in classified telephone directories.

Complete Roly-Door Specifications are available in Sweet's Architectural File or from:



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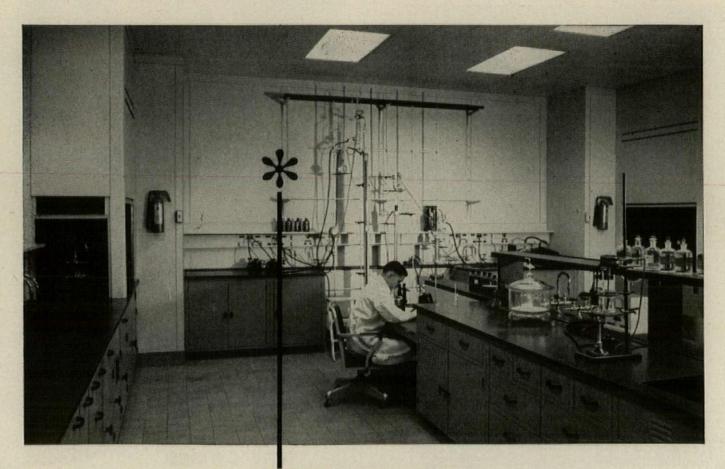
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UALCO ALUMINUM AWNING WINDOW FEATURES: Exclusive Strip-Proof Operator with heavy-duty torsion bar built-in cam lock. • Completely weather-stripped with Koroseal. • Vents open and lock in any position up to 90 degrees. Integral fin surrounds windows; takes brick fin and fin trim. · Jiffy-Quick Sill Clips slide in channel from each side, use as needed.

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architectural FORUM / May 1955

#### **PRODUCTS**

Continued from p. 262

tinental Electric Equipment Co., Box 1055, Cincinnati 1, Ohio. 16 pp.

Metal-Clad Switchgear with Plus Valves. General Electric Co., Schenectady 5, N.Y. 52 pp.

Kaiser Aluminum Bus Conductors. Kaiser Aluminum & Chemical Sales Inc., 1924 Broadway, Oakland 12, Calif. 10 pp.

Scotch Electrical Products for Construction and Maintenance. Dept. E5-26, Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn. 12 pp.

#### FIRE PROTECTION

Metal Lath Membrane Fireproofing for Steel Buildings. Technical Bul. 3. Metal Lath Mfrs. Assn., Engineers Bldg., Cleveland. 16 pp.

Wasco Pyrovent-Wascolite Pyrodome—automatic fire-venting protection. Wasco Products Inc., 93P Fawcett St., Cambridge 38, Mass.. 4 pp.

#### FLOORING

Electrified Concrete Joist Floors. Concrete Reinforcing Steel Institute, 38 S. Dearborn St., Chicago 3, III. 16 pp. Specification for Vinyl Asbestos Floor Tile. Asphalt Tile Institute, 101 Park Ave., New York 17, N.Y. 11 pp.

#### **FURNITURE**

Report of the Conference on Latex Foam in Furniture. The British Rubber Development Board. Distributed by Natural Rubber Bureau, 1631 K St., N.W.. Washington 6, D.C. 47 pp.

#### HARDWARE

Grant Sheaves and Tracks. Grant Pulley & Hardware Corp., 31-85 Whitestone Pkwy., Flushing 54, N.Y. 3-pp. fold-out.

Sliding Door Hardware: Grant 7000. Grant Pulley & Hardware Corp., 31-85 Whitestone Pkwy., Flushing 54, N.Y. 12 pp.

#### HEATING AND AIR CONDITIONING

Blue M Electric Ovens and Furnaces and Related Equipment. Solitest Inc., 4520 W. North Ave., Chicago 39, III. 4 pp.

Ceiling Diffusers. Cat. F 6597. Barber-Colman Co., Dept. 766, Rockford, III. 28 pp.

Coil-type Spray Dehumidifier. Marlo Coil Co., 6135 Manchester Ave., St. Louis 10, Mo. 8 pp.

Controls for Heating, Refrigeration and Air Conditioning. White-Rodgers Electric Co., 1209 Cass Ave., St. Louis 6, Mo. 32 pp.

Guideposts to Better Air Conditioning Installations. Booklet A-8726. F. R. Zumbro, E. I. Du-Pont de Nemours & Co., 6529 Nemours Bldg., Wilmington, Del. 36 pp.

Flexi-blade Series Registers and Grilles. Cat. No. FB-104. Ecco Ceiling Air Supply Outlets. Cat. No. Ecco-103. Engineered Air Volume Control. Cat. No. VC-105. Air-Factors, Inc., Monrovia, Calif. 4 pp. each.

1955 Selection Manual No. 50 on High Velocity Draftless Air Diffusers. Anemostat Corp. of America, 10 E. 39th St., New York 16, N.Y.

Propeller Fan Unit Heaters for Steam and Hot Water Applications. C. A. Dunham, 400 W. Madison St., Chicago, III. 12 pp.

Ruud Specification of Commercial Water Heaters. Ruud Mfg. Co., 2025 Factory St., Kalamazoo 24F, Mich. 8 pp.

S Type Boilers. No. WT-8. Bros Boiler & Mfg. Co., 1057 Tenth Ave., S.E., Minneapolis, Minn. 8 pp.

#### INSULATION

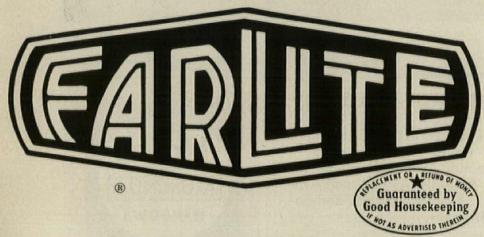
Korfund Elasto-Rib. Bul. K5A. Korfund Co., 48-08G 32nd Place, Long Island City 1, N.Y. 4 pp.

#### LUMBER

The Architect's Guide to Expressions in Wood. Acanthus Wood Carving Co., 732 N. Morgan St., Chicago 22, III.

Commercial Standard CS45-55 for Douglas Fir continued on p. 274

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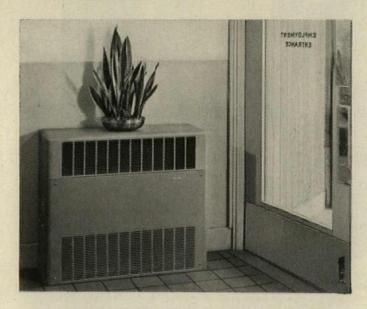
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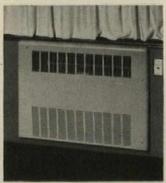
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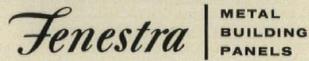
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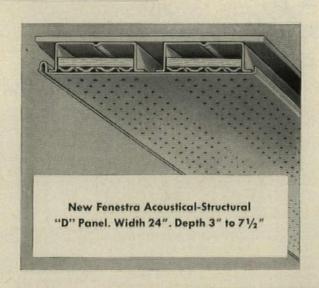
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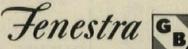
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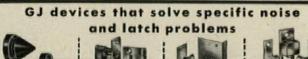
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#### **PRODUCTS**

Continued from p. 266

Plywood. Douglas Fir Plywood Assn., 1119 A St., Tacoma 2, Wash. 12 pp.

Plywood catalogue. Douglas Fir Plywood Assn., 1119 A St., Tacoma 2, Wash. 4 pp.

#### LIGHTING

Mercury Street Lighting Engineering Guide. Bul. B-6064. Westinghouse Électric Corp., P.O. Box 2099, Pittsburgh 30, Pa. 35 pp.

#### METALS

A Short Story of Stainless Rigid-Tex Metal. Rigidized Metals Corp., 777 Ohio St., Buffalo 3, N.Y. 4 pp.

#### PAINTS

Hydropake Masonry Coating. The Upco Co., 4805 Lexington Ave., Cleveland 3, Ohio. 2 pp.

#### PARTITIONS

Soundex Partitions. GR Products Inc., 142 Federal Square Bidg., Grand Rapids 2, Mich. 4 pp.

#### **PLUMBING**

Catalogue of Insulated Piping Systems. Ric-wiL, Inc., Barberton, Ohio. 90 pp.

92 Series Controls for Pressures to 250 PSI. Bul. L-119. McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18, III. 4 pp.

Therm-O-Tile Conduit for Underground Piping. Bul. 10154. Porter-Hayden Companies, 825 Frelinghuysen Ave., Newark 5, N.J. 8 pp.

Wrought Iron Pipe Catalogue. A. M. Byers Co., Engineering Service Dept., Pittsburgh, Pa. 52 pp.

#### STONE

Granite in Places of Worship. Cold Spring Granite Co., Dept. KP, Cold Spring, Minn. 12 pp.

Lenroc Stone. Brochure No. 3C. Finger Lakes Stone Co., Inc., 112 Ellis Hollow Rd., Ithaca, N.Y. 4 pp.

#### TUBING

Square, Rectangular, Special Shape Welded Tubing. Van Huffel Tube Corp., Warren, Ohio. 32 np.

#### VALVES

Design Manual for Remote Control of Valves. Bul. 553. Stow Mfg. Co., 443 State St., Binghamton, N.Y. 20 pp.

Fairbanks Valve Comparison Chart. Fairbanks Co., 393 Lafayette St., New York 3, N.Y. 18 pp.

#### WALL PANELS

Foamglas in Thin Wall and Sandwich Panel Construction. Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa. 12 pp.

#### WELDING

Stud Anchors for Concrete. Nelson Stud Welding Division, Gregory Industries, Inc., Lorain, Ohio. 6 pp.

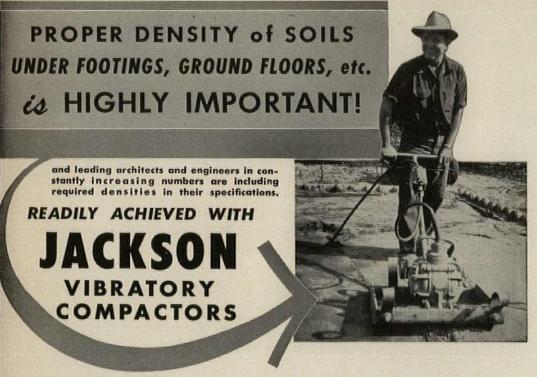
#### WINDOWS AND DOORS

Alda Aluminium Windows. Alda Mfg. Co., Inc., James and Cherry Sts., E. Hartford, Conn. 8 pp.

Arcadia Steel-framed Sliding Glass Doors and Windows. Cat. 1955-6. Arcadia Metal Products, P.O. Box 657, Arcadia, Calif. 12 pp.

Fenestra for Schools—Panels, Sash, Doors. Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11, Mich. 20 pp.

Steel Doors and Frames for Interior Use. The Steel Door Institute, 2130 Keith Bldg., Cleveland 15, Ohio. 8 pp.



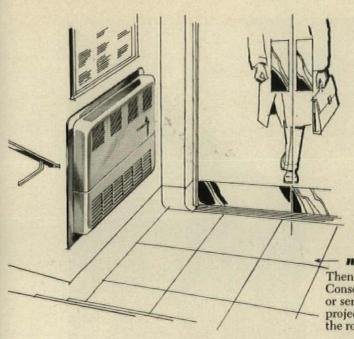
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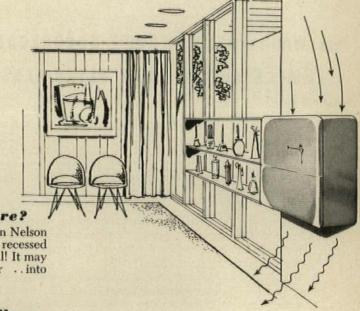
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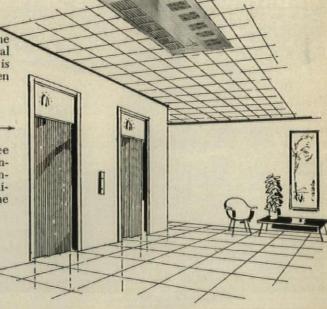


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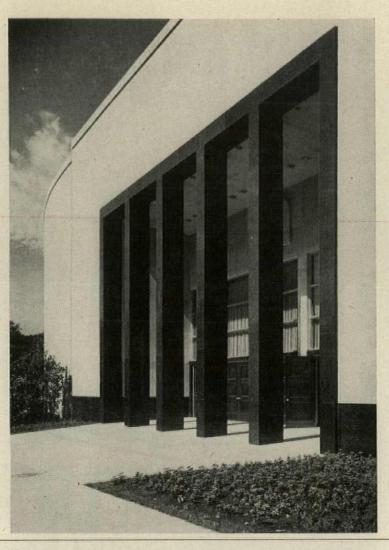
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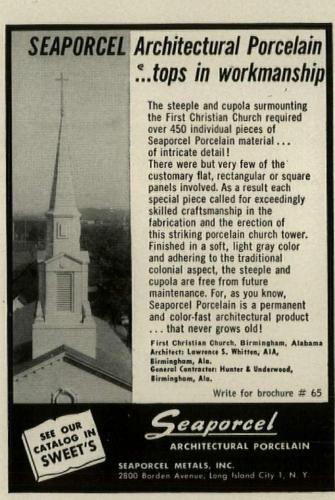
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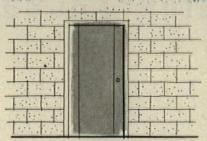
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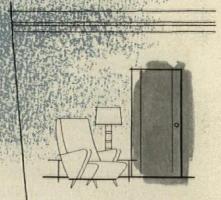


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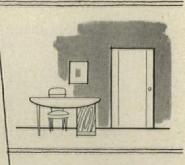
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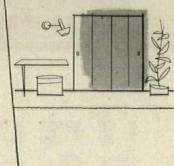
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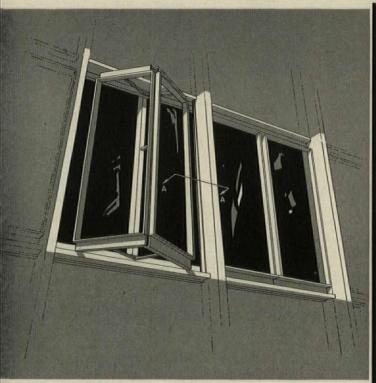
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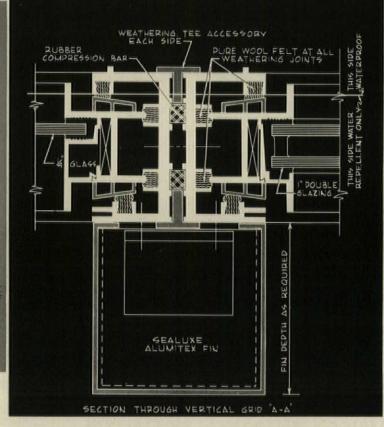
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· As in industry, the need for sanitary wash fixtures has been recognized by school authorities everywhere. Group type wash fixtures-Bradley Washfountains -provide more facilities in less space and at lower installation cost. Having no faucets, nothing is touched but the clean spray of running water that is foot-controlled. No danger of spreading infectious diseases.

Then, too, the bowl is selfflushing to prevent collection of contaminating water... For new and modernized washrooms Bradleys are available in vari ous models.

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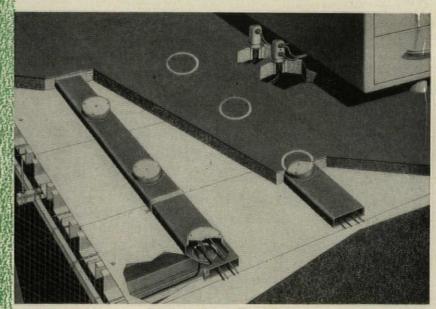
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Pittsburgh's State Office Building is an outstanding example of how modern design cuts owners' operating costs by providing for economical alterations in office layout.

National Electric Header Duct provides easy access to the Fenestra cellular steel floor. The result: a combined raceway system that makes electrical outlets available in any square foot of the floor area.

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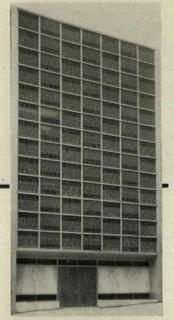
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Architects: Kelly & Gruzen Installed by the New Jersey Bronze Co.

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## Increased Production Here

Ceiling and walls are light and the fixtures' sides seem almost luminous in this custom lighting job with standard Litecontrol fixtures. Almost 40% of its light is thrown upward by LITECONTROL 2428, the fixture used here. Perimeter fixtures illuminate walls evenly. The results: plenty of light for work, and freedom from strain wherever eyes may travel.

Here's how Mr. Frank H. Rimmer, President of Relief Printing Corporation, described the results: "Our records already show that our investment into this modern, standard lighting installation has increased the efficiency of employees in all departments. There have been less errors made in printing, and there has been a most encouraging increase in factory and administrative production."

Installation and maintenance of LITECONTROL 2428 is fast and simple because of its rugged, two-piece, allmetal construction. Curved surfaces are easy to wipe clean. Efficiency is 86%.

For every lighting job, it pays to use efficient, versatile Litecontrol fixtures . . . custom lighting at standard fixture prices. Basic fixtures can be combined or modified to meet every need. Call or write your local LITECONTROL representative.

INSTALLATION: Relief Printing Corp., Boston, Massa-

ENGINEER: C. A. Russell, Boston Edison Co. ELEC. CONTRACTOR: George Phelps Co. TYPE OF AREA: Packaging and Mailing

FINISHES: Ceiling, pastel yellow Walls, light green

CEILING HEIGHT: 14'-0"

FIXTURES: Litecontrol No. 2428 Slimline Industrial Fixture, Pendant Mounted

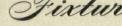
MOUNTING HEIGHT: 12'-0"

SPACING: 11'-0" on centers
Perimeter row of fixtures: 3'-6" from wall

INTENSITY: 60 footcandles average initially



# LITECONTROL Fixtures



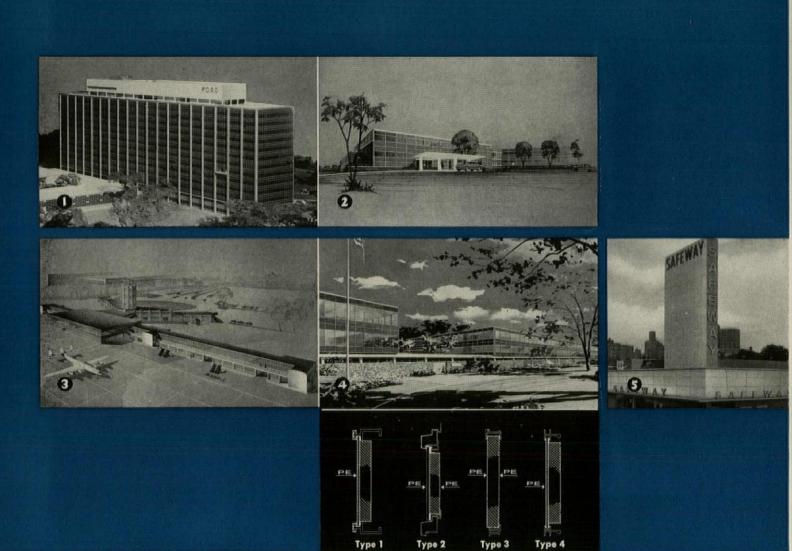
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architectural FORUM / May 1955

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REPRESENTATIVES—Write for information regarding open territories.

PE indicates Porcelain Enamel

The buildings shown above are: (1) Ford Central Staff Office Building. Architect: Skidmore, Owings & Merrill, New York. (2) RCA's Cherry Hill Project. Architect: Vincent G. Kling, Philadelphia. (3) Buffalo Airport. Architect: Harry A. Morris, AIA, with Thomas B. Bourne Associates, Inc. Consulting Engineers, Washington, D. C. (4) Wyeth Laboratories' Home Office and Research Unit. Architect: Skidmore, Owings & Merrill, New York. (5) Safeway Store. Architect: Wechsler and Schimmenti, New York.

Typical insulated PORCELPANELS for curtain wall construction (sectioned above) include: Type 1—Flat face panel used for Ford Office Building; Type 2—Corrugated face used for RCA Cherry Hill Project; Type 3—Double face used for Buffalo Airport; Type 4—Flat face used for Wyeth Laboratories.

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New York City's new 12-million-dollar Department of Marine and Aviation Pier 57 is one of the most modern in the world—and so is its wiring system.

A unique feature of the system is a cable with submarine-type insulation, installed aerially without physical protection of any kind. This installation offers most of the advantages of a conduit system at a far lower cost. The cable can withstand varying temperatures estimated from minus 10 degrees Fahrenheit to 130 degrees Fahrenheit and humidity up to 100%.

This cable was designed and tested to meet the special requirements of the Dept. of Marine and Aviation, City of New York, including U. S. Coast Guard specifications for submarine-type cable.

All of the wire and cable for the pier was supplied by Phelps Dodge.

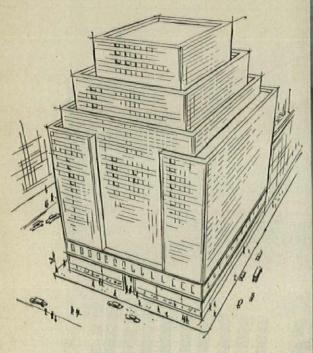
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A comfortably quiet atmosphere welcomes visitors to TWA's smart reception area. The attractive Travertone ceiling contributes much to these surroundings by soaking up disturbing noise and carrying out the relaxed, modern décor.



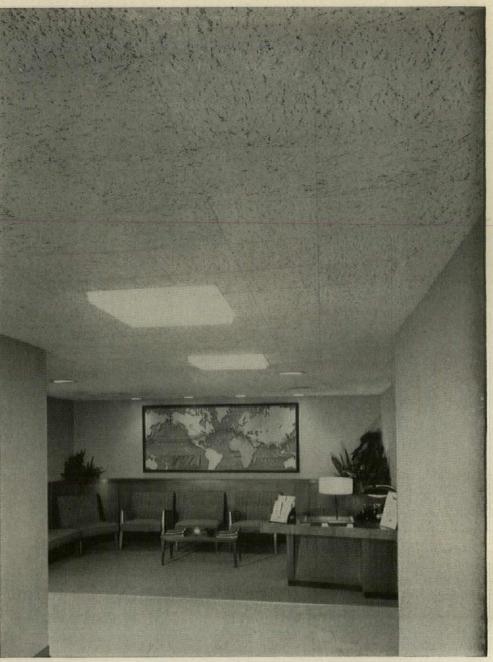
TRANS WORLD AIRLINES,

New York City, N. Y.

TWA Architect: C. Schlichtemier.

General Contractor: Cauldwell-Wingate Co.

Acoustical Contractor: William J. Scully Acoustics Corp.



# Planned for beauty — Sound conditioned for comfort

The latest developments in contemporary design are incorporated in the new executive offices of Trans World Airlines. Every feature contributes to office beauty, employee comfort, and over-all efficiency. Even the ceilings of Armstrong Travertone\* were chosen with these objectives in mind.

Travertone's high acoustical efficiency and handsomely textured surface help provide office personnel with the quiet, attractive surroundings necessary for comfortable working conditions.

Travertone's fibrous mineral wool composition soaks up as much as 80% of the noise that strikes it, keeping mistakes caused by distracting noise to a minimum.

Its smartly fissured surface blends well with the modern décor, and Travertone's white paint finish helps diffuse light evenly without annoying glare.

In addition, Travertone is completely incombustible and fully meets New York City's strict fire-safety regulations. Maintenance is easy and economical, too.

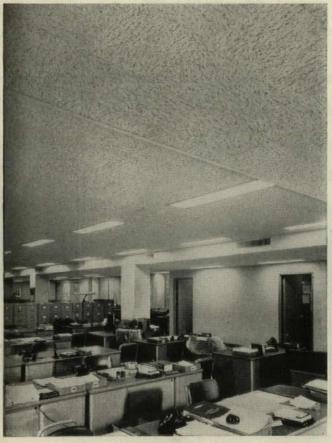
Travertone is just one of six Armstrong acoustical products. Get full details on Armstrong sound-conditioning materials from your Armstrong Acoustical Contractor.

For your free 1955 edition of "Armstrong Acoustical Materials," write Armstrong Cork Company, 4205 Rooney Street, Lancaster, Pennsylvania.

<sup>\*</sup> Trade-Mark



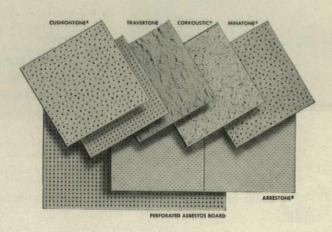
The high acoustical efficiency of this Travertone ceiling provides the undisturbed quiet needed for concentration. Travertone is quickly installed by cementing or suspension methods and can be scored and cut to fit around fixtures.



Mistakes caused by distracting noise are reduced in this modern office area. Noise-muffling Travertone soaks up disturbing noise, prevents the clatter of business machines from building to distracting levels.



Completely incombustible, Travertone meets all fire-safety regulations. Its handsomely fissured surface resembles travertine marble and can be washed or repainted as often as desired without impairing its acoustical effectiveness.



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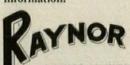
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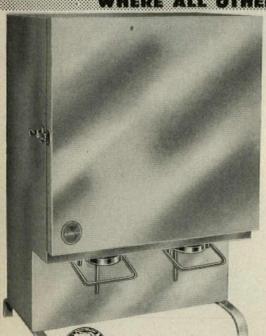


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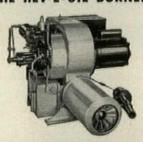
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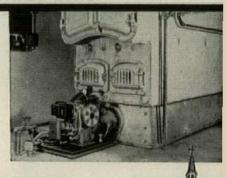
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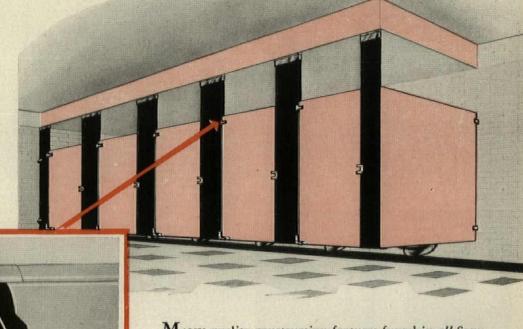
# No. 1

#### WHAT TO LOOK FOR IN QUALITY TOILET COMPARTMENT CONSTRUCTION

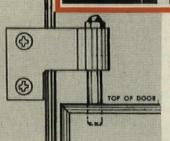
One of many major differences that give you your money's worth in satisfactory service!

# The Top Hinge Design...

# THAT OUTWITS TROUBLE



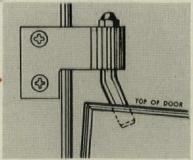
3 POINTS
OF SUPPORT
FOR PIN
NEEDLE BEARING



SANYMETAL'S 7700 TOP HINGE: Support of the top hinge pin at the 3 marked points prevents it from getting out of line even though a heavy man leans on the door handle, or a child or adult swings on the door. This top hinge pin operates within a needle roller bearing proved capable of 301,000 cycles of use without noticeable wear.

OUT-OF-DATE design employs a cantilever principle top hinge like this. In service this hinge bends . . .

OUT-OF-LINE (as shown exaggerated here) at best causing rapid wear, at worst allowing door to drop from its support.



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Here is one such feature, the Sanymetal 7700 Top Hinge, for compartment doors. Note how proper design makes this hinge so strong that it cannot get out of alignment, even if severely abused. Compared with it, ordinary hinges are outdated both in appearance, and in service life.

The many Sanymetal features explain why Sanymetal products are leaders, frequently imitated. Only Sanymetal offers all these many differences as standard without special cost. Ask your Sanymetal Representative to point out these many features of Sanymetal Quality construction.

See Sweet's or send for Catalog 92, describing all Sanymetal Compartments. If you wish, we will mail other advertisements of this series on quality construction details.



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Agency-James A. Stewart Co.
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Agency-Dog Anderson Advertising Agency
Agency-Meermans, Inc.
Agency-Foote, Cone & Belding Minnesota Mining & Mfg. Co
Minneapolis-Honeywell Regulator Co
Mississippi Glass Co
Agency—George Broasky
Agency-Klau-Van Pietersom-Dunlap Assoc.
Moen Valve Co. 26t  Agency—West-Marquis, Inc. 26t  Monsanto Chemical Co. 2.  Agency—Needham, Louis & Brorby, Inc.  Morrison Steel Product L.
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Agency—J. Walter Thompson Co.  Paine Lumber Co., Ltd
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Perlite Division
Agency-Darwin H. Clark Co.
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Inc. Pittsburgh Plate Glass Co
Inc.
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