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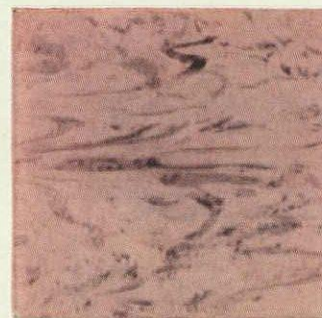
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JULY 1956

9	News
29	Trends
35	People
40	Dates
46	Parentheses
60	Letters
77	Excerpts
134	Books
172	Research
186	Products

Cover: Design by Ray Komai based on plan for air-conditioned school by Caudill, Rowlett, Scott & Associates

98 Editorial data (including masthead), subscription and advertising data

226 Advertising index

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103	About this month's FORUM
	An open letter from the editors
104	Schools—a special 30-page report
	New design patterns
	Highlights of the work of The Architects Collaborative
114	"Treehouse" building by Charles Colbert
	It is cantilevered over a playground
117	Skylighted building by John Carl Warnecke
	It fits a crowded city lot
120	Hearing, seeing and learning
	A discussion of the architecture of visual education
124	Is cooling coming for schools?
	A study of the need for air conditioning and of the way in which Architects Caudill, Rowlett & Scott design for it
128	New ideas for meeting places
	The gymnasium, the cafeteria and the corridor take on new shapes to meet new requirements
134	Art in Architecture
	A review of a new book about an unhappy marriage by Paul Damaz
139	America's first architect
	A review of the Pulitzer Prize-winning biography of Benjamin Henry Latrobe by Talbot Hamlin
141	Architecture in America
	The lender's influence—Part IX in a series
145	How to start city renewal
	A professor and his students set wheels in motion in Springfield, Mass.
149	Buildings in brief
	A quick around-the-map look at significant new buildings
152	The architecture of East Germany
	A critical appraisal of the Communists' fanatical but narrow rebuilding program
157	Technology
	New paints for building protection and technical notes on seven other new developments
162	For all concerned
	An editorial on the missing industry

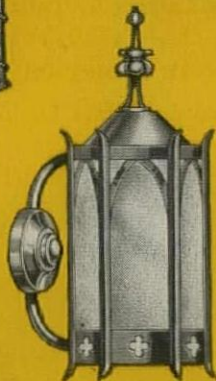
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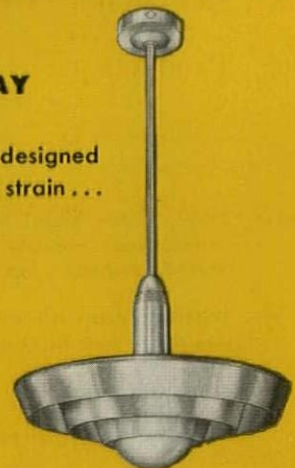


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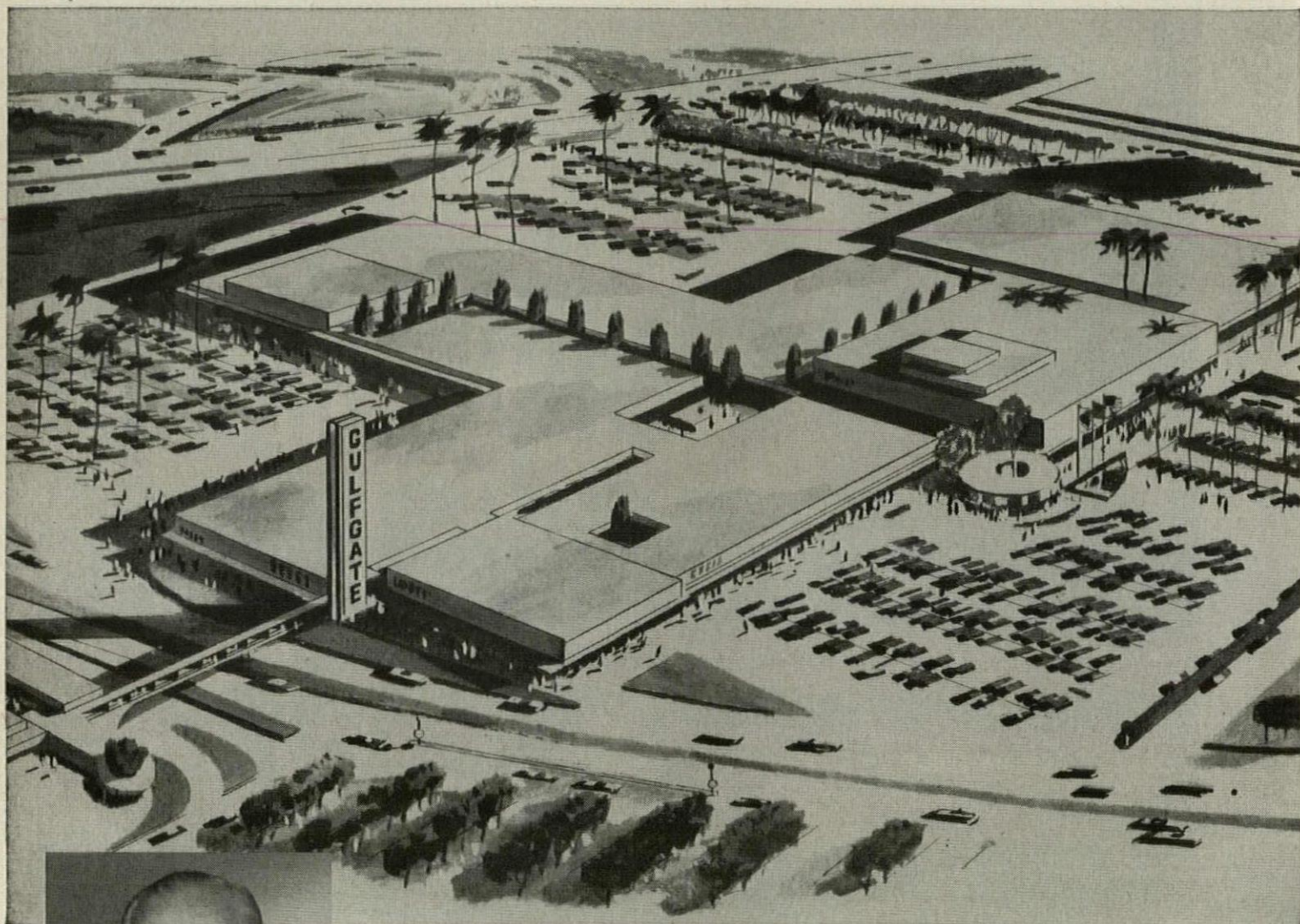
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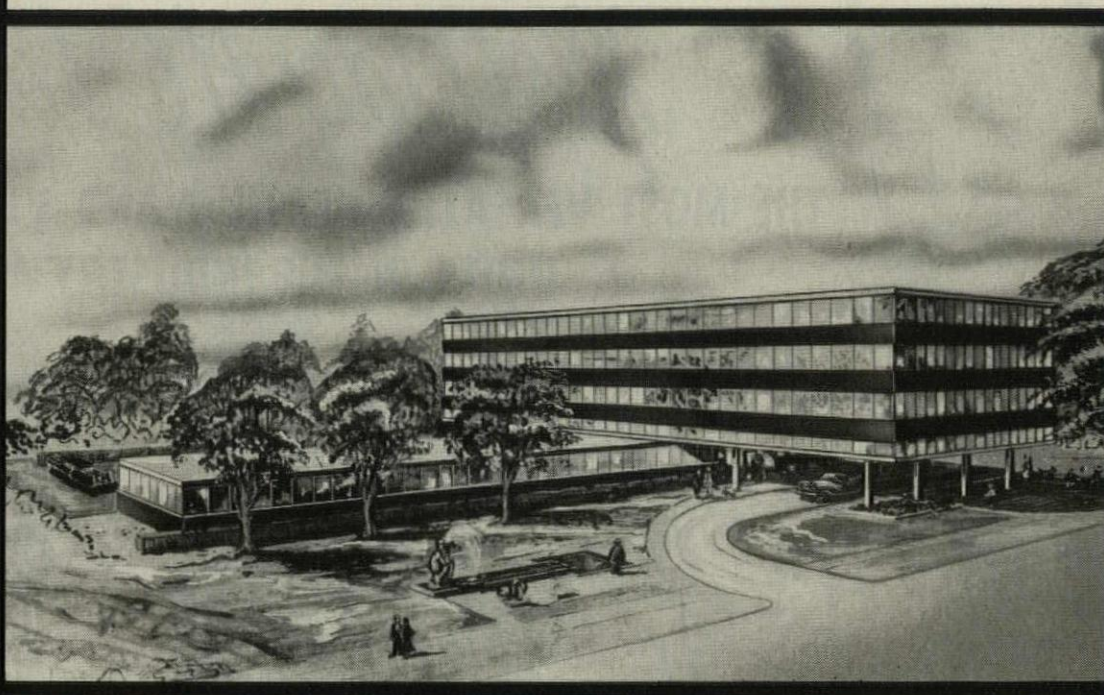
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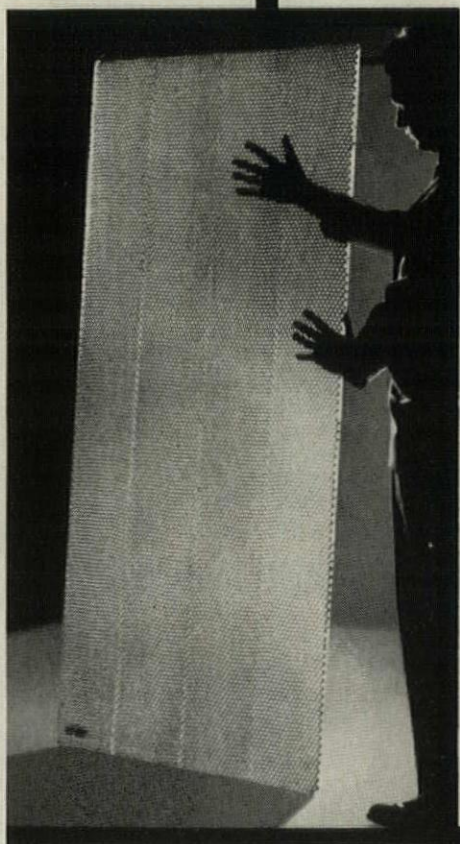
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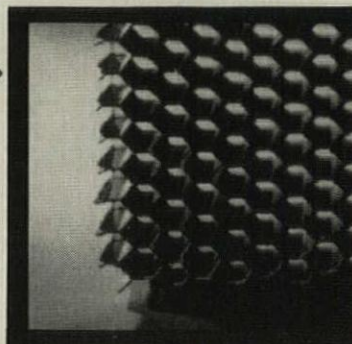
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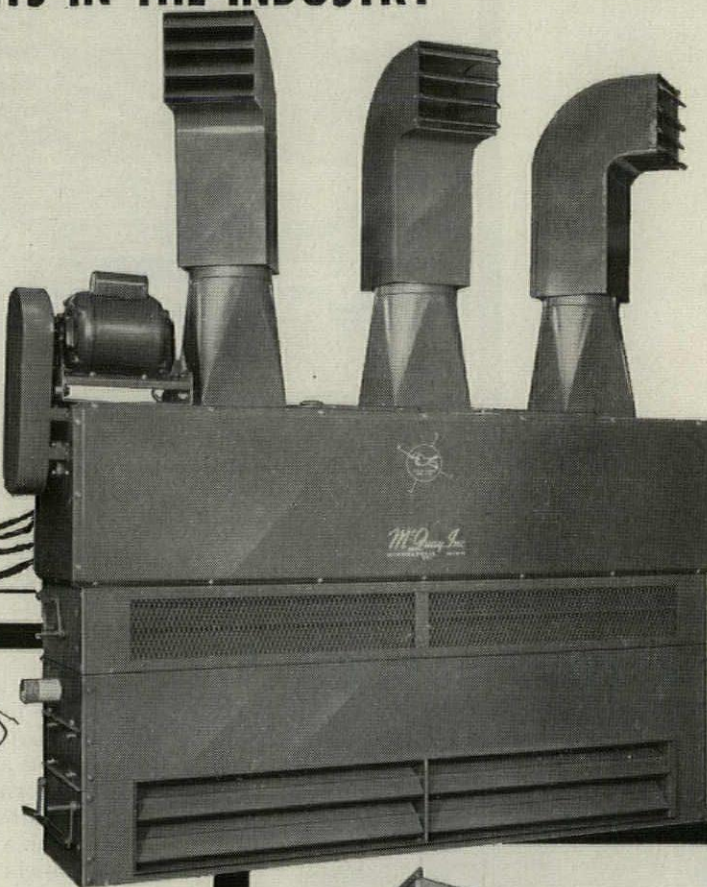
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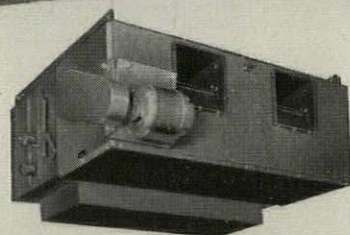
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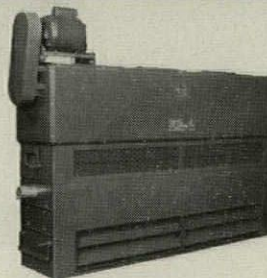
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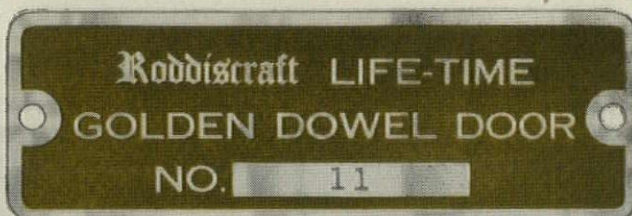


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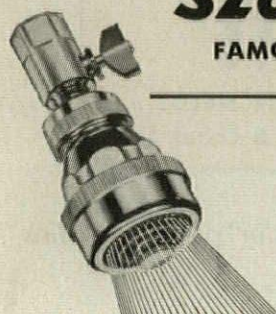
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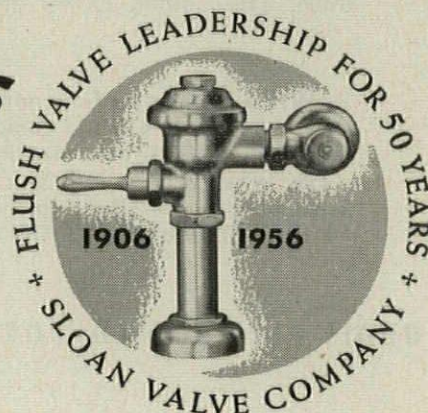
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Despite all protests, Congress votes \$12 million to alter Capitol facade

After House and Senate action last month added \$12 million more to the \$5 million voted last year to move the central eastern facade of the Capitol forward 40', it looked as if this needless boondoggle, which would destroy an invaluable American architectural heritage, would be hard to stop.

About the only prospects for reversing enacted law now depended on an aroused public opinion to persuade either of two

HARRIS-EWING



STEWART

small, powerful groups to rise above themselves and veto or halt the project. One group was the architectural advisory committee for Capitol improvements appointed to assist "in determining the proper architectural treatment of the East Front" (AF, June '56, News),

which conceivably could recommend that this part of the over-all project be dropped. This committee is not scheduled to report before fall. The other group was the "client"—the Commission for the Extension of the Capitol, composed of the Vice President, the Speaker of the House, the Senate and House minority leaders, and the Architect of the Capitol.

How Congress Erred. In the confused and sometimes somewhat Machiavellian situation surrounding the controversial proposal to alter the East Front, two important factors stood out:

► Most Congressional action had been hasty, and without the benefit of very much authoritative advice. It held no public hearings on the prime legislation last year. Unfortunately, Architect of the Capitol J. George Stewart, who would supervise the project and was the principal Government agency spokesman on behalf of the legislation, is not an architect at all. Stewart, a former Congressman (1935-37), listed himself in the *Congressional Directory* as a general contractor.

► AIA got itself snagged into a most awkward position, apparently giving Congress two contradictory impressions of its stand, even though AIA conventions and individual chapter meetings, whenever the extension was discussed, voted uniformly against it. As it developed, Congress at one period understood that the AIA had acquiesced to the alteration proposal. This was based on an unauthorized report of the AIA's National Capital Committee which AIA never adopted. Later, the 1955 AIA convention adopted a strong resolution of protest against the project, a position it had also taken in 1939 and 1949, and reiterated again at its 1956 convention.

Points at Issue. There were three main grounds on which opponents fought the alteration proposal: costs, history, and

esthetics. On costs, estimated by FORUM as four times too high for space gained, a big stumbling block was the fact that the job was always married to other projects, was "packaged" with new Senate and House office buildings, and other desirable Capitol improvements. It was hard to separate or isolate the East Front item for individual criticism without appearing to be against other desirables in the master legislation, the bill that also appropriates Congressmen's salaries and expenses. On esthetics—see page 12 for illustrations and separate report on design principles involved.

Stewart's Weakness. On esthetics and history, contractor-"architect" Stewart had little faith in the merits of this masterpiece of early Federal Architects Thornton, Latrobe, and Bulfinch, the only facade reflecting the critical judgment of Washington and Jefferson. On costs, he apparently was ready to spend, and being no architect he was short of acumen in finding or developing some acceptable and much less expensive means to provide the creature comforts Congressmen desired, a restaurant and more hearing rooms that the extension was supposed to supply.

At closed Congressional committee hearings, Stewart was the chief advocate of alteration, as the agency man in charge of all the Capitol grounds and buildings. He neglected to tell the committee of some important expressions of concerted professional architectural opposition. (Last month FORUM inadvertently printed a picture of David Lynn, his predecessor, as a picture of Stewart. FORUM regrets the error. With this report is a picture of the real Stewart.)

A Mixed-up AIA. From testimony at Senate subcommittee hearings released last month, and other sources, there emerged a story of the dilemma that plagued officials of AIA's Octagon and largely accounted for AIA's confusing and hardly effectual role while the controlling legislation was being enacted last year and this.

The Senate report revealed that AIA's National Capital Committee more than a year ago prepared a report in favor of the alteration. But this was never adopted or became official policy. The 1955 Minneapolis convention, in fact, emphatically repudiated any such approval by adopting its resolution registering "strong opposition to the proposed alterations which would involve destruction of the historic and original east facade," and offered AIA's services to advise Congress "how additional space might be obtained without sacrificing the historic values of the building."

This official AIA resolution was sent by AIA officers at the time to the Vice President and Senate committee members. They did not send it to House officials. Reason

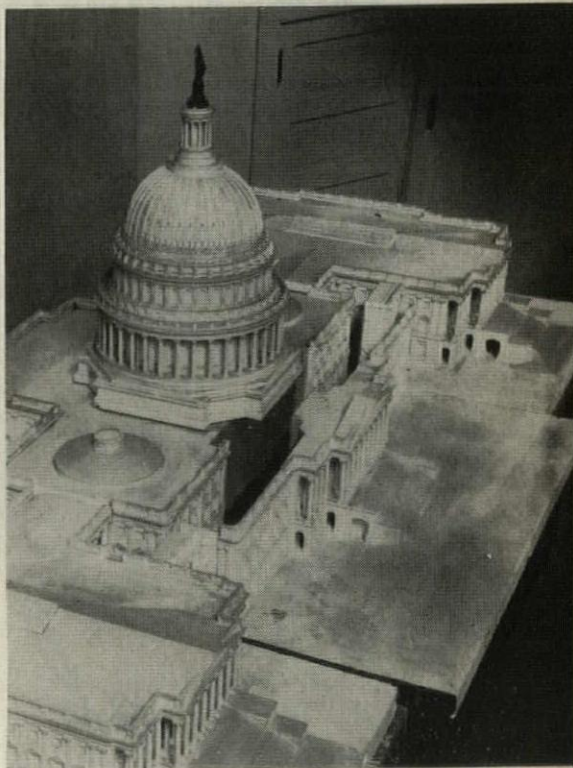
given: the House had already acted on the 1955 legislation.

Irritated senator. At the Senate hearing last month, AIA Executive Director Edmund Purves squirmed when asked about the *Capital* committee's report. He said it was confidential. At that, Senator Bridges exploded, suggested that Purves apologize to the committee for purporting to testify about the position of an organization, but then claiming its committee's special study of the project under review was secret. "One of the most unusual things I have heard of . . . so anything you may say would have no weight with me," said Bridges.

Chairman of this AIA committee was former President Glenn Stanton of Portland, Ore. Other members, up to the 1956 convention, were John Graham Jr., Falls Church, Va.; Kenneth Wischmeyer, St. Louis; Dana B. Johannes, Silver Spring, Md.; Branch D. Elam, Washington; and alternate, Frank Duane, Silver Spring, Md.

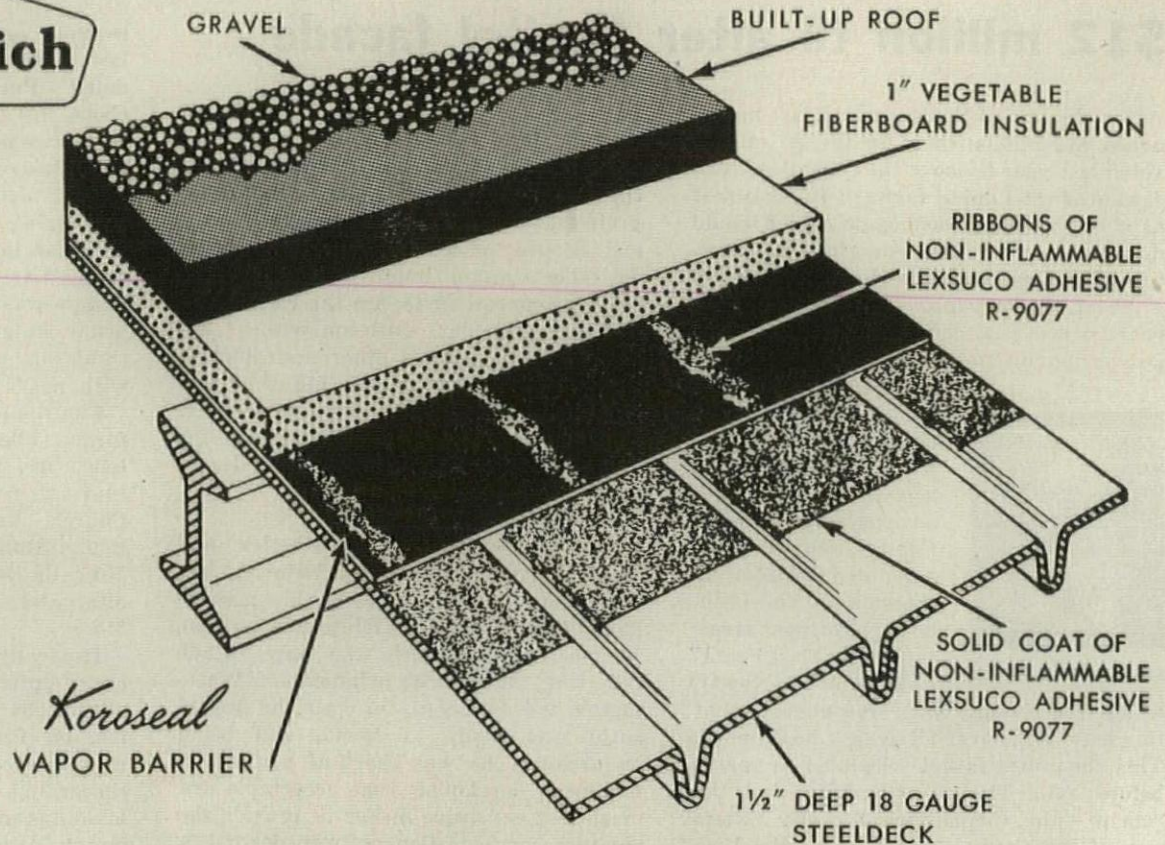
Ironically, this committee also seemed out of order in ever considering the Capitol alterations at all. Another AIA Committee, on Preservation of Historic Buildings, is specifically charged with "matters concerning the preservation of individual buildings of historic importance in Washington, D. C." Despite this, and despite the repudiation of Stanton's committee report, Stanton in person continued to lobby actively in Washington for the East Front alteration.

Late in June, AIA's new president, Leon
continued on p. 12



STUDY MODEL shows relatively small space to be gained by tearing down and rebuilding big monumental front. Appropriations and guesstimates have mounted from \$5 to \$17 to \$21 million already; no end is in sight.

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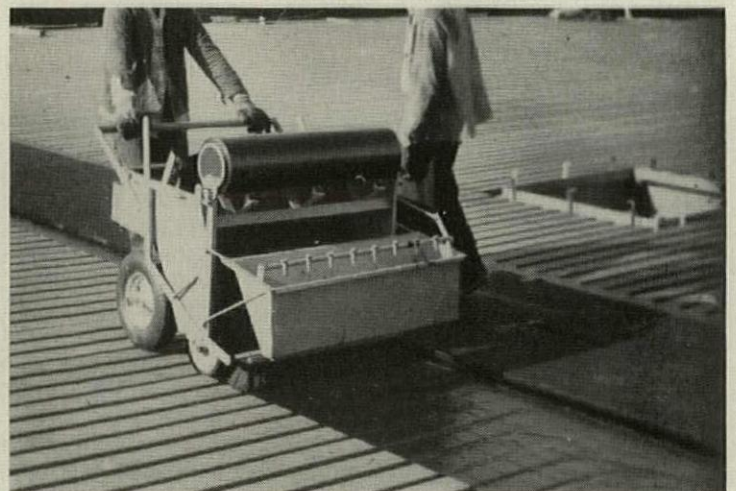
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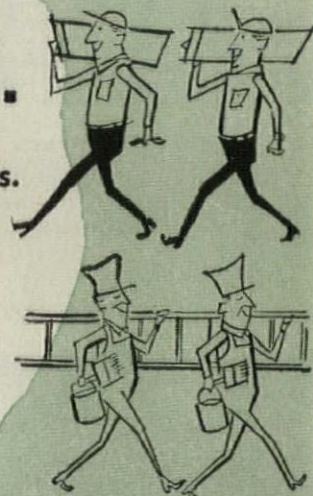
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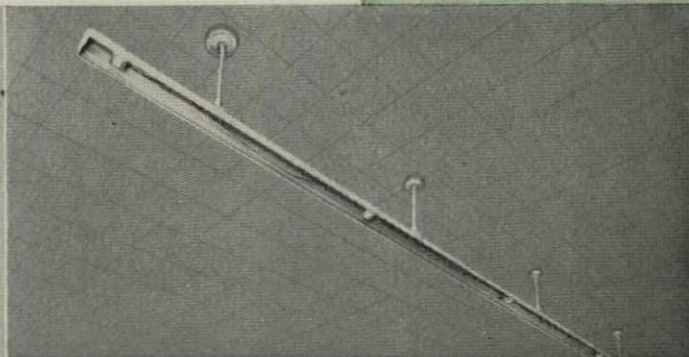
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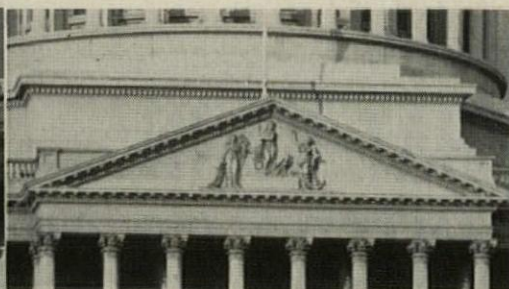
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CONTRAST: low-rise ornate south pediment (top l) is later, academic, compared to elegant high-rise examples of Latrobe (top r) and Jefferson and Bulfinch (below).

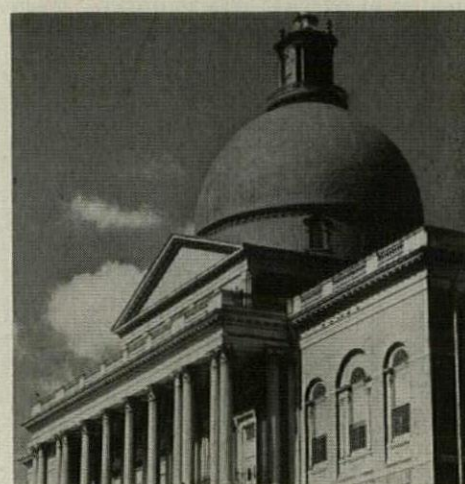
JEFFERSON'S VIRGINIA STATE CAPITOL

BULFINCH'S MASS. STATE CAPITOL

LATROBE'S US CAPITOL AT WASHINGTON



GABRIEL BENZUR



LIFE: SAM SHERE

BEAUTY TO BE DESTROYED?

Central East Front of Capitol designed for Jefferson by famed Architect Latrobe, built by famed Architect Bulfinch in time for Jackson's inaugural, and never changed since, is what Capitol Boondoggle Operation would tear down, rebuild further forward to new designs. Purpose: to make room behind it for corridors etc. which expert opinion says that careful re-planning could regain, for a fraction of the cost, inside present building. East Front extension would eliminate the recessed forecourt, used as splendid historic setting for inaugurations of all presidents since Jackson. (See photo, p. 9.)

Proponents cite textbook "error" of composition which Architect Walter, who completed today's enlarged dome after Civil War, intended to "correct" later (dome too far forward on base). Yet today's top critics like Joseph Hudnut say history has proved that Walter's "temporary expedient" was really an inspired accident which gave Capitol Front a beauty and character unique in world architecture. "A cascading tumult of columns from top to base," LIFE calls it.

No architect or critic has opposed giving Congress its practical needs or beautifying forecourt. Opposition is only against East Front extension.

Comments of some leading architects:

"Object very strongly . . . I think it is cannibalism of the worst kind for any architect to try to change the character of the Capitol. The dome will be less dominant from the east court and be diminished in its esthetic effect. Let's stop this outrage." Ralph Walker.

"The Capitol has been saved by wary birds . . . Silhouette had long ago been recognized as portraying personality even to far distant onlookers. Close-by experts also better beware of plastic surgery for shortening from below a cherished face by a brand-new protruding chin." Neutra.

"History has harmonized a thousand imperfections in the United States Capitol. We would do well, I think, to leave this building in the hands of that ingenious architect. Besides, we should then spare our descendants the trouble of improving our improvements." Joseph Hudnut.

Chatelain, wrote to Stanton and his committee to cease acting on the Capitol issue.

Los Angeles "resolution." At its last convention in Los Angeles, AIA definitely reaffirmed and reiterated opposition to the proposed alteration. Some persons, however, including Senate committee members questioning Purves last month, were confused by unexplained assertions that no "resolution" on the subject was adopted. No resolution was adopted, but what happened, with full force and effect of a resolution, was this:

In its report to the convention the board of directors made a specific recommendation that the convention should "reiterate" last year's stand, which, it noted, had "expressed the institute's viewpoint appropriately." When the board's report was adopted as a whole, containing this recommendation, it eliminated the need for adopting a separate reiteration resolution.

After the alteration was first authorized by Congress in its haste to adjourn last August, everything might have gone through quietly if FORUM had not investigated the situation in preparing a roundup on Washington (AF, Jan. '56) and sounded an alarm in its editorial, "Leave the Capitol Alone" (AF, Feb. '56).

Rank and file architects reacted quickly. The Society of Architectural Historians adopted a resolution opposing the project, so did the New York and Washington Metropolitan chapters of the AIA. The

New York leadership against the proposal was taken by Lorimer Rich, former AIA President Ralph Walker, and Arthur C. Holden.

Meanwhile, many influential newspapers gave editorial support to FORUM's position; none were observed that supported the alteration proposal. A sampling:

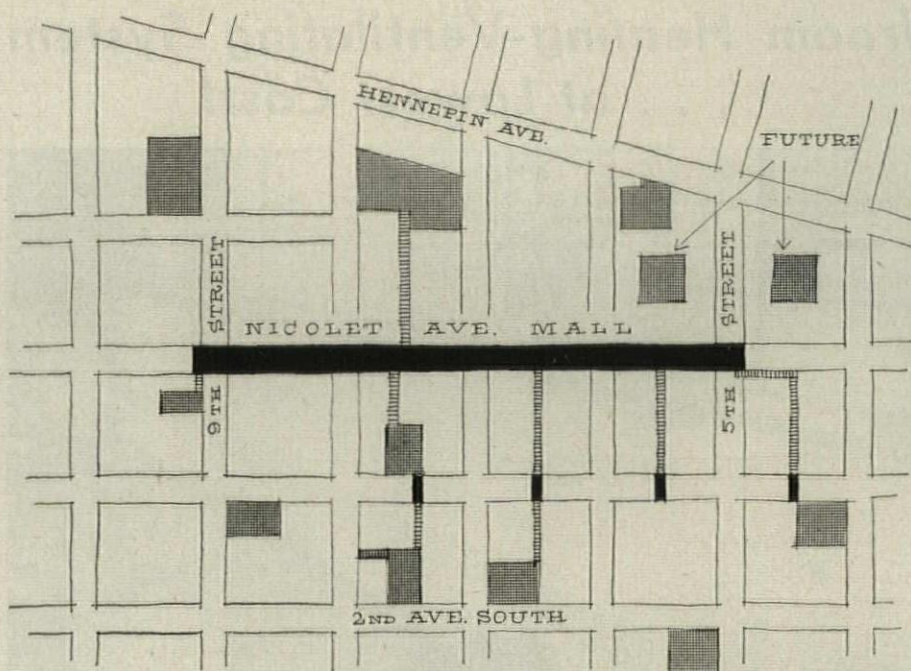
"**Careful with that Facade.** Congress does not own the Capitol, but only lives in it. The people own the Capitol. We suspect that in matters architectural, the people would rather listen to the American Institute of Architects than to Congressmen." *St. Louis Post-Dispatch*.

"**Monumental Folly.** Maybe we lack the esthetic perception of our Congressmen, but to us that Capitol looks as though it would be more harmed than helped by tampering . . . Put that [\$17 million] back in the kitty and leave the Capitol Building as it is, is what we say." *Detroit Free Press*.




"**Leave the Capitol Alone.** The recent appropriation of \$12 million by the House, for alterations to the east front, lacks the popular support that so radical a project requires . . . All in all, the east-front alteration project looks like a waste of money. It should be abandoned." *New York Herald Tribune*.

"**Spare the Capitol!** We think the U. S. public will have a hole in its head if it doesn't rise up in wrath to stop this botchery." LIFE.

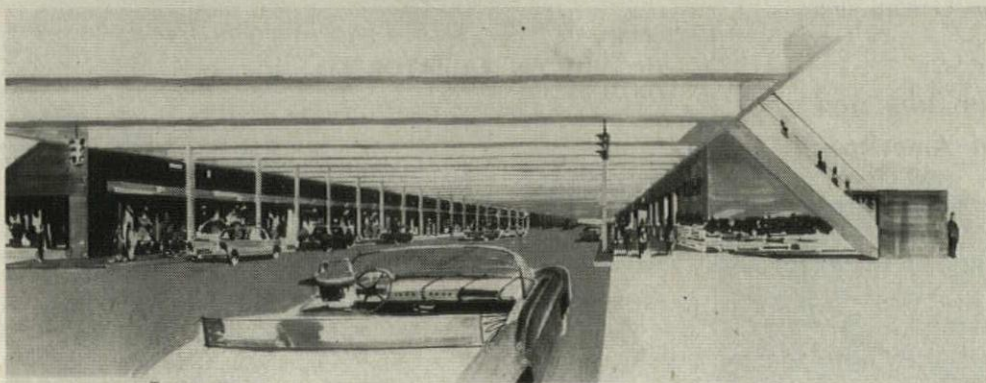
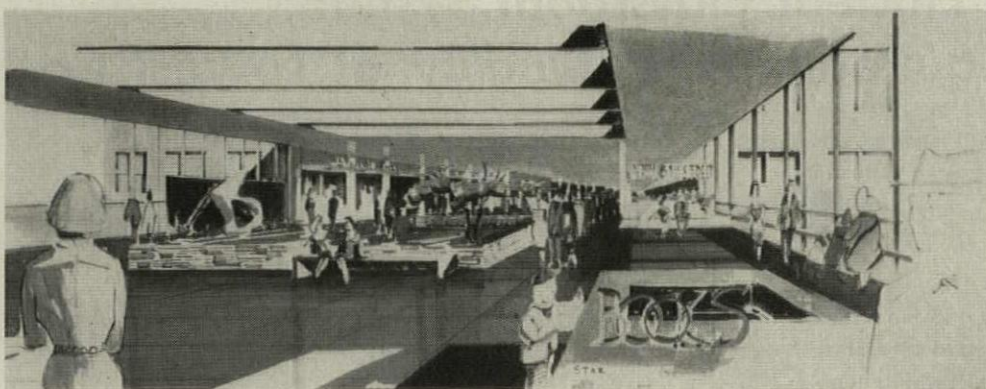
Elevated 'shoppers plaza' proposed to revitalize downtown



NORTON & PEEL

PARKING 
 PEDESTRIAN BRIDGES 
 WALKWAYS 

PEDESTRIAN PLAZA proposed for downtown Minneapolis would extend 2,000' along Nicollet Ave. (see map) and provide sheltered access routes to nearby parking facilities. View at left shows elevated plaza as it would appear from adjacent cross street. Sketches below indicate how Nicollet Ave. would appear underneath the new overhead shopping mall; also how the elevated plaza itself might look inside, completely enclosed so it could be heated in winter, air conditioned in the summer. Architects: Larson & McLaren.



Minneapolis business and civic officials were studying last month a fairly simple, presumably inexpensive and certainly provocative proposal for giving their central downtown shopping area a new type of merchandising "sex appeal."

The idea: an elevated, enclosed, heated and air-conditioned "shoppers' plaza" extending four blocks along busy Nicollet Ave., with entrances to buildings on each side of the avenue at second-floor level. The principal sponsor: Leslie G. Park, president of Baker Properties, Inc., one of the city's largest downtown owners.

Park first outlined his plan before the development committee of the Downtown Council, of which he is a member. This council was formed about a year ago to bolster and stimulate downtown shopping, business activity and general improvement of the downtown area.

Costs, advantages. According to Park, this doubling of street area would cost about \$1 million per block and could easily be financed through city bonds amortized from levies against benefitted property owners. He also suggested that the city could lease the facility to the Downtown Council to operate, and the council could cover operating expenses out of rentals from various lessees in it.

Multistory department stores occupy three full blockfronts of the proposed Minneapolis plaza, said Park, and there are only a few other stores that do not have second floor space available to give them plaza access. Under a plan to route all city buses through Nicollet Ave., making this a sheltered mass transportation loading and unloading concourse, he explained, merchants with only ground floor facilities would still get the benefits of a large, important pedestrian traffic past their doors.

Besides its relative economy, compared with more elaborate downtown conservation schemes proposed in many other cities, Park listed these other features and advantages for his plan:

► Escalators to the plaza at all cross streets, and plantings inside that could give the plaza a landscaped effect unobtainable without such a plaza.

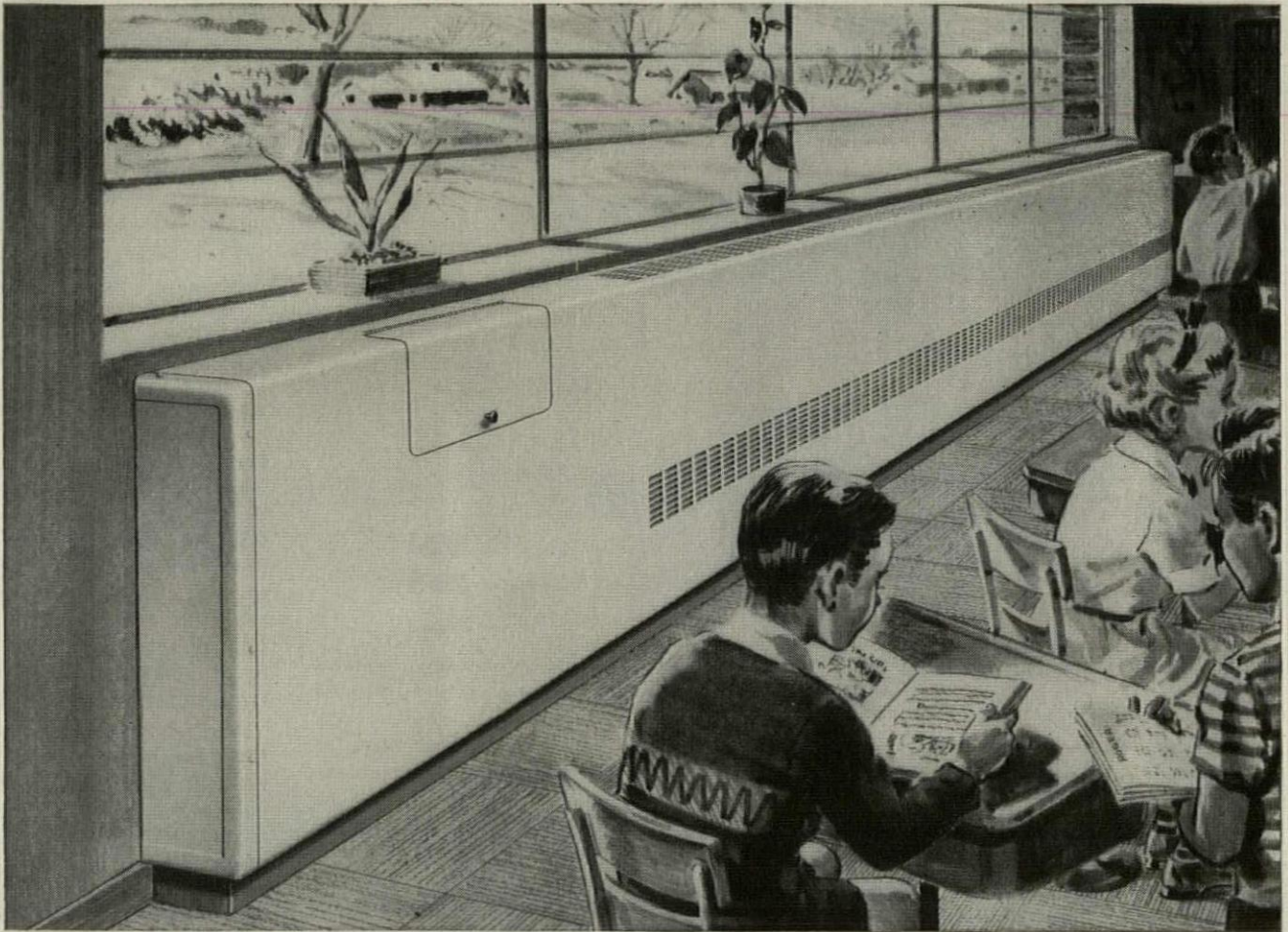
► Overhead lighting almost as powerful as daylight would serve traffic driving under the 14' high plaza. Both street and plaza would be freed of any snow problem. It would simply stay on the plaza roof.

After discussing his idea with merchants and engineers, Park had Larson & McLaren, Minneapolis architects, draw sketches to illustrate it. They studied downtown improvement plans proposed recently for Ft. Worth, Tex., Los Angeles, San Francisco and other cities, in most cases felt costs for most other kinds of plans would be relatively prohibitive when contrasted with what Albert O. Larson called "the simple practicability of the plaza."

NEWS continued on p. 16

New! Vulcan LINOVENTILATOR*

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Mengel Doors equal or exceed the requirements of Bureau of Standards specifications CS200-55

A Roundup of significant proposals and completions

ADOLPH STUDLY

**AIRPORT HOTEL**

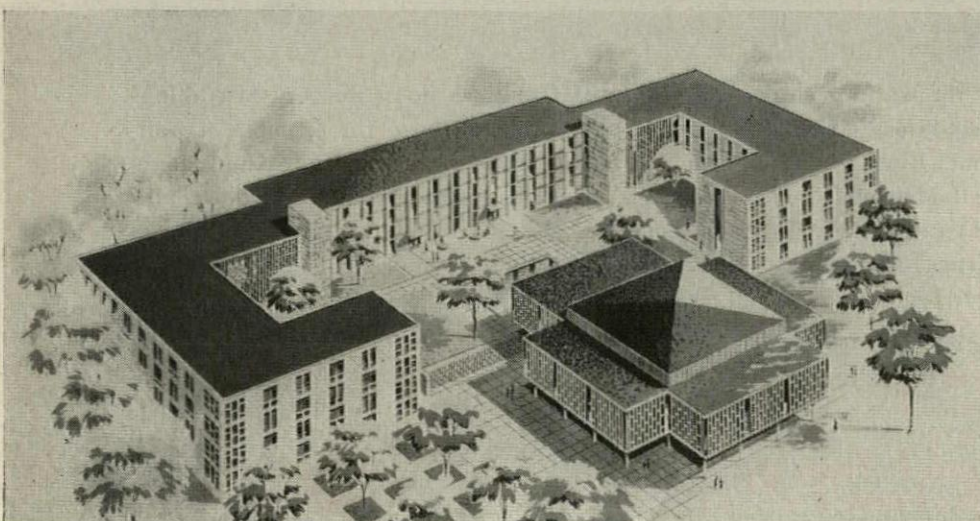
Idlewild International Terminal in New York will include this Y-shaped hotel structure designed by New York Architect William B. Tabler & Associates. The front, slightly angled portion of the Y, to be built first, will contain 320 guest rooms on its five upper floors; dining room and cocktail lounge on the ground floor. A future wing with another 160 rooms will complete the Y in the rear. Fully air-conditioned structure will have bright, white brick exterior, double-glazed windows that will also help keep out airplane noises. Knott Hotels Corp. will operate the \$4 million project after its completion by Nov. '57.

**PHYSICAL ED BUILDING**

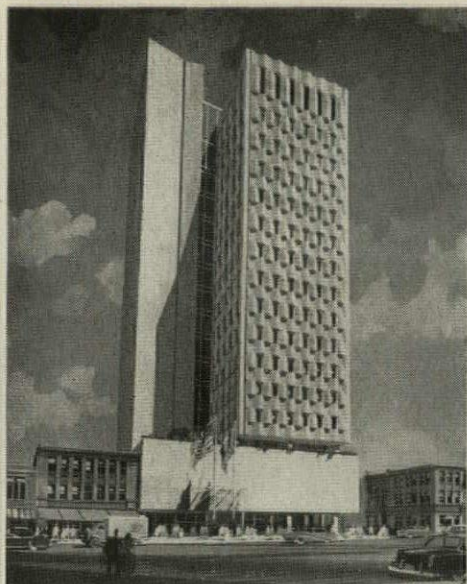
This interesting structure for the University of California Santa Barbara College will have an exterior of cinnammon-colored, modular cement blocks that will harmonize with existing campus buildings. Plans stress flexibility and provisions for expansion. The gymnasium will be able to accommodate 3,800 spectators in demountable bleachers. Pereira & Luckman are architects for this \$1.8 million, 75,000 sq. ft. structure.

**ADULT EDUCATION CENTER**

The University of Georgia in Athens, Ga. will soon have a 450-seat hexagonal auditorium (1) and a five-story hotel and restaurant wing for 300 persons (r). Its two-story academic section will consist mostly of conference and seminar rooms. Without any fixed curriculum, the center will conduct a flexible, experimental program of institutes, seminars and short courses on any subjects in which a sufficient number of people display an interest. Architects for this unusual \$2.5 million complex, the Georgia Center for Continuing Education, are Stevens & Wilkinson, of Atlanta.

**WOMEN'S QUADRANGLE**

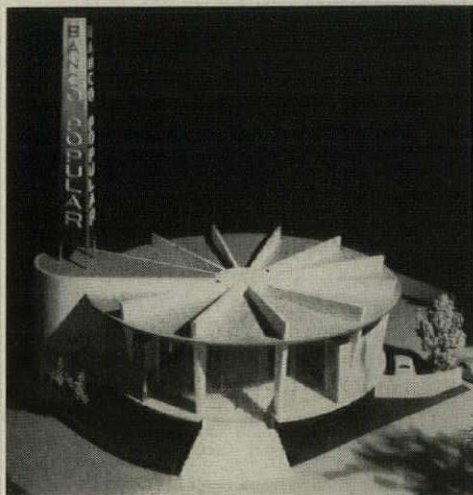
For the University of Chicago Eero Saarinen & Associates have designed three four-story dormitory units to accommodate 516 students which will be linked to a central entrance, visitors' lounge and dining hall building. Ground for the \$3.2 million project was broken last month, and an application has been made for a \$2 million federal loan toward its cost under the College Housing Loan program of the HHFA.



CONCRETE TOWER

The first skyscraper for Charlotte, N.C. will be this multi-colored 15-story Wacovia Bank & Trust Co. structure designed by Harrison & Abramovitz of New York and A. G. Odell & Associates of Charlotte. Stone will cover the four-story base of the \$5 million building. Tower portion will be sheathed with prismatic precast concrete panels impregnated with varicolored stones. Elevators and utilities will be housed in a separate shaft section (1) connected to office space by tinted-glass corridors.

NYHOLM SCHERCK



EXPENDABLE WALLS

The floor-to-ceiling windows in this circular hurricane- and earthquake-proof bank in Puerto Rico will not be boarded up during tropical storms; they will simply be replaced. Ground floor interior will be designed to withstand wind and water without ill effects, while valuable papers and documents are stored in the waterproof windowless basement. In the back will be tellers' windows for drive-up banking as well as parking space for patrons. The air-conditioned building in Hato Rey for Banco Popular de Puerto Rico was designed by New York Architect Chauncey W. Riley.

NEWS continued on p. 21



GLASS-AND-WOOD LODGE FOR YELLOWSTONE PARK

Los Angeles Architect Welton Becket has designed a group of timber-glass-and-stone buildings for Yellowstone Park, which has been swamped by an increasing number of visitors each year, swelling in 1955 to 1,350,000.

Becket's additions to the present 3,128-room facilities consist of motel buildings (not shown) clustered in groups of six or eight, laid out to take advantage of the Park's terrain; also two larger service buildings (see cuts) which are about as

simple in structure as a building can be. Each is in effect a pitched roof, carried to the ground, partially sheathed, combining support and structure and producing an almost columnfree interior.

The new main lodge, 320' long, will contain dining facilities, kitchens, tourist services (photo shops, etc.), and a cocktail lounge, and, on a lower level, maintenance shops, beauty salon, barber shop and employee quarters.

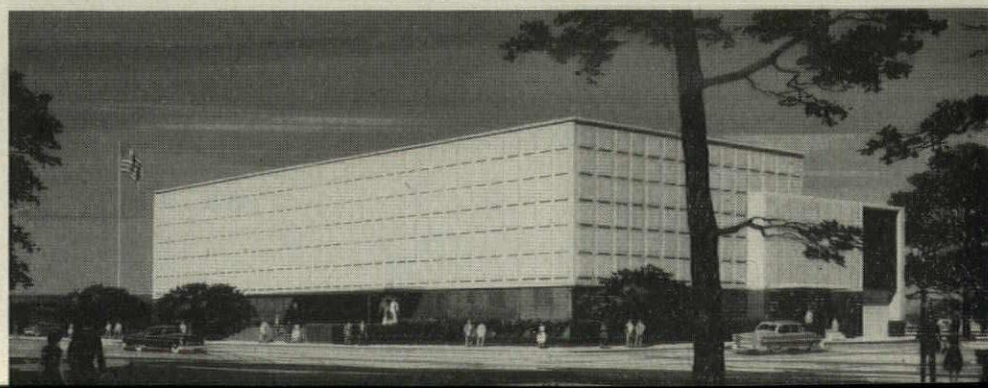
NO WINDOWS AT ALL FOR HOUSTON RESERVE BANK

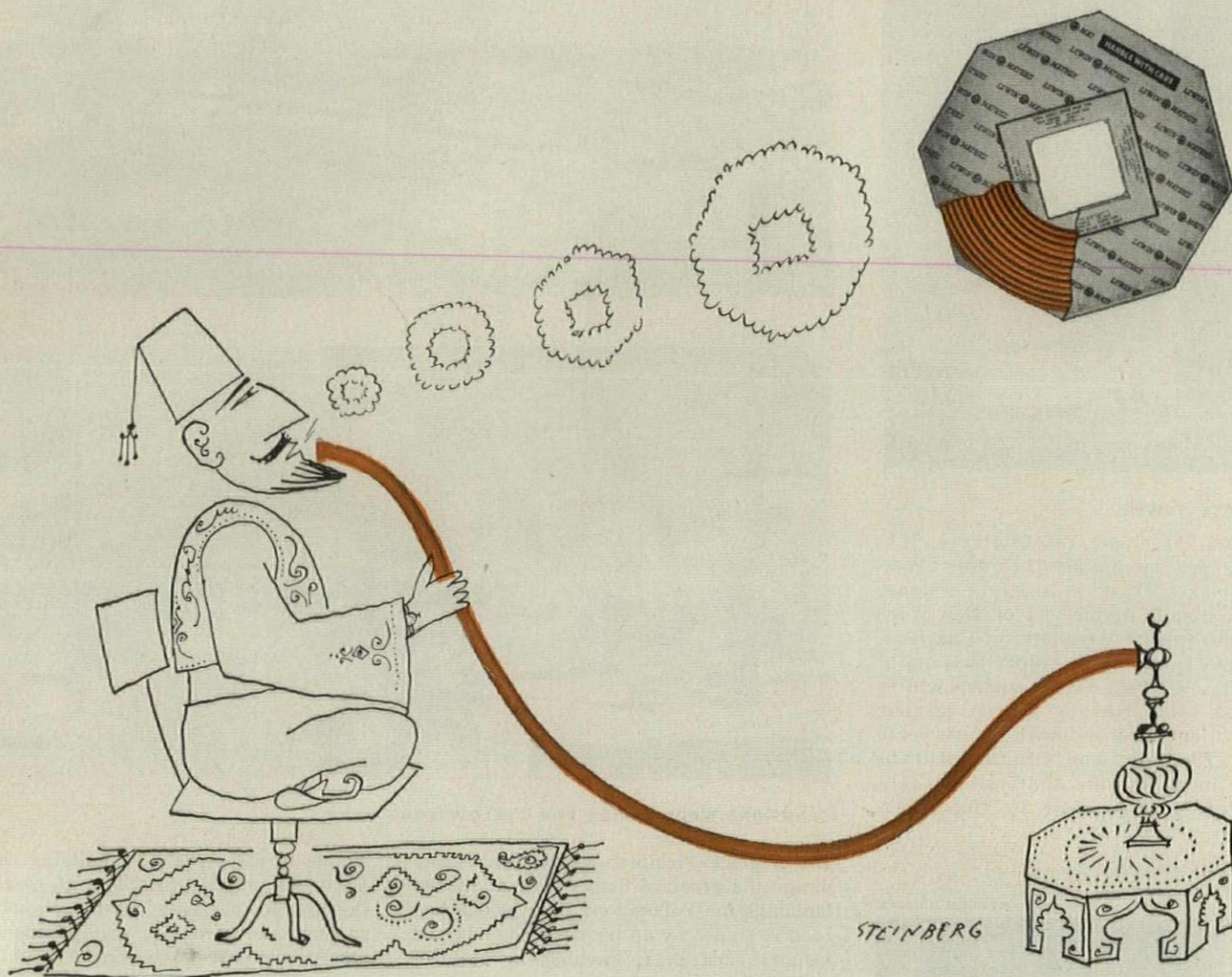
In contrast to Skidmore, Owings & Merrill's AIA-First Honor Award all-glass, meet-the-public bank for the Manufacturers Trust Co. in New York (AF, Dec. '54), this new four-story home for the Federal Reserve Branch bank in Houston will be entirely windowless.

Architects for this \$2.1 million, 90,000 sq. ft. reinforced concrete structure are Golemon & Rolfe with Phelps & DeWees &

Simmons, of San Antonio as consulting architects. First floor exterior of the air conditioned building will wear dark granite, upper floors light-colored granite or limestone. All utilities will be housed on second floor, and design will allow future addition of five more floors. Site on fringe of downtown area in path of accelerating department store and business expansion, includes parking space for 58 cars.

PAUL DORSEY





STEINBERG

pipe dream

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Zeckendorf outlines new projects; annual report helps clarify policies

Radiating optimism at the release to the press of his company's 1955 annual report, Webb & Knapp President William Zeckendorf gave details on some of the newest continent-wide realty, redevelopment and building programs he has started nurturing.

With this latest report and his press conference remarks, Builder-Developer Zeckendorf also helped observers gain a little better insight into the objectives of W&K operations and made a little less puzzling what he himself has called its "labyrinthian balance sheet."

New Louisiana city? Elaborating on his recent acquisition of control of almost 35,000 acres between New Orleans and Baton Rouge, ebullient Entrepreneur Zeckendorf disclosed that he may eventually develop an entire new "city" on some of the land. This property was formerly sugar plantation land of Godchaux Sugars, Inc., in which W&K has bought 85% stock interest. It includes Mississippi River frontage that has "especially great potential for heavy and light industry," in an area that has already started to experience considerable industrial development. Parts of it are also astride the New Orleans-Baton Rouge Airline Highway and would be suitable for residential developments for workers in the area's increasing number of industrial plants.

In Canada, said Zeckendorf, negotiations are underway between Webb & Knapp (Canada) Ltd. and Canadian National Railways for the largest private urban redevelopment project ever undertaken in Canada. This has been described as a \$125 million, 24-acre Rockefeller Center type project for Montreal.

Recession insurance. Tipping his hat to the possibility of economic squalls sometime, Zeckendorf said W&K has pursued a course to avoid "overburdening liabilities in the event of deflation." Its policy of "embarking upon unusual urban redevelopment projects" in various cities, he added, "is in part a hedge against the possibility of a recession. The scope of these projects is such that they would in all probability be viewed as essential 'pump priming' operations by government authorities seeking to stimulate business activities, and it might be expected that money would be more readily available and at lower rates during a period of general business slackness."

Spend or be taxed. Should congressional tax-law writers ever consider whether the 52% corporation income tax rate is self-

defeating, Zeckendorf could make a witness of undisputed authority. He exemplifies the shrewd businessman-taxpayer who has reshaped the old New Deal threat of "spend and spend and spend; tax and tax and tax" into the latter-day taxpayer's maxim of "spend and spend and spend, to reduce your taxes and reduce your taxes and reduce your taxes."

In this respect the W & K 1955 annual report discloses that for the third successive year thriving, prospering W & K spent all its profits from its vast property operations—and a good portion of its profits from the sales or disposal of its capital assets, to boot—before doing its duty by the Internal Revenue Service.

In essence, the firm apparently escaped federal income taxes on all of its property operation profits. And with capital gains deductible against administrative or operating deficits, it paid capital gains taxes on only a portion of those profits. Thus W & K are in the forefront among those who figure it may often be wise to spend a \$1 capital gain the year it is earned, rather than husband the 75¢ from it that Internal Revenue allows a savings-minded person or corporation to retain.

Highlights from the 1955 report, in conjunction with comparable data from '53 and '54 statements:

► Profits from disposal of capital assets in 1955 were \$7.2 million; profits from property operations another \$3.0 million. But after spending all property operation profits, and \$512,000 from capital profits, net income before federal taxes was only \$6.7 million.

► For the three years, 1953-55, profits from disposal of capital assets totaled \$16.2 million, and profits from property operations were \$5.2 million. After spending all operations profits, and \$4.2 million of capital profits, total net income before federal taxes over the three years was reduced to \$12 million. (Zeckendorf statements to discourage anyone who might attach excessive importance to this recurring contraction in net income: "We are dealers in income producing properties. Our liquidating value is more interesting to us, and of far greater importance than per-share earnings." W & K properties, he has said, should be viewed "not as things we use, but as things for sale.")

► Provision for federal income taxes in 1955 was \$1,599,000, or 23.3% of before-tax income. For the three-year period provision for federal taxes was \$1,699,000, or 14.1% of its before-tax income.

Good-by \$8,250,000. At his press conference Zeckendorf also clarified a statement in the 1955 report that he had agreed to waive \$8,250,000 of his personal cumulative preferred-stock dividends through

1957 in conjunction with an agreement by Robert R. Young's Allegheny Corp. to lend W & K \$20 million, through the purchase of 5%, 15-year debentures. This would be a "permanent" waiver, not a temporary waiver or deferral until 1958.

On paper, \$8,250,000 looked like a very stiff personal premium for him to pay for a \$20 million 5% loan for his firm. Yet it was probably truly more blessed for Zeckendorf to give than to receive in this case, and charity its own handsome tax reward.

By waiving these dividends the equity, liquidation value of the 20 million outstanding shares of Webb & Knapp common stock (5.9 million owned by Zeckendorf himself) automatically rose 26¢ each, as Zeckendorf illustrated with a chart in the 1955 report. Moreover, the firm also escaped the need to earn the far greater "before taxes" income it would have had to produce and retain to meet this obligation. And besides, even if \$8,250,000 was brought through W & K, and Internal Revenue, to Zeckendorf personally, only a small portion of that could be expected to survive the second bout with the Revenue on personal income taxes.

NABOM office space survey shows first upturn since 1952

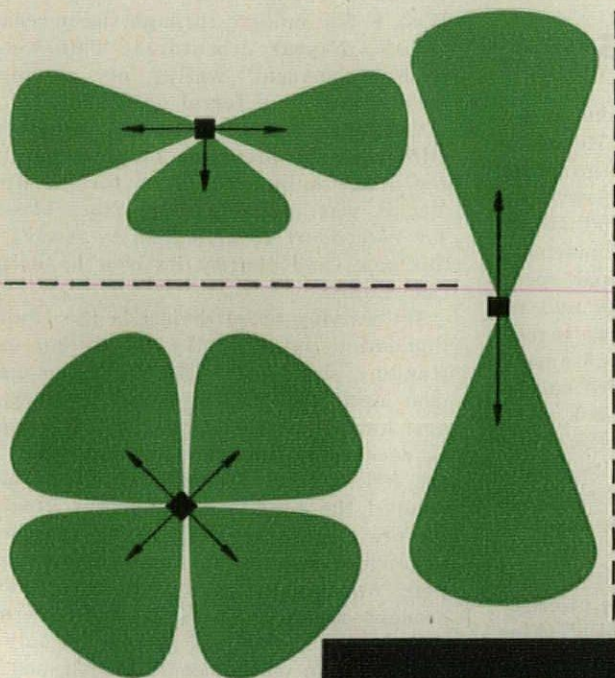
Office building occupancy showed its first upturn since May '52 in the semi-annual national survey by the National Assn. of Building Owners and Managers as of May 1. Over the last four years occupancy had shown a very slight but steady decline, to a national average of 96.56 last October. But in May it registered a marked recovery to 96.88, or a 3.12% *continued on p. 25*

JOHN VIGNOLI

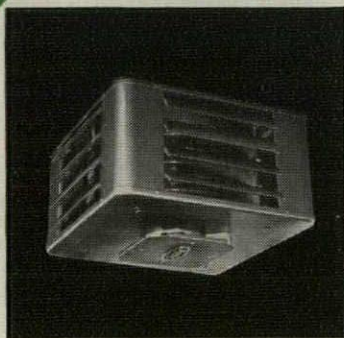


BOCA re-elects Rutherford; McCormick on executive unit

At the annual convention of the Building Officials Conference of America in Hartford the nation's two top code association officers worked in concert. Installing BOCA President Arthur N. Rutherford (1) of West Hartford for a second term was C. S. McCormick, of Tacoma, a new member of the BOCA executive committee. McCormick is president of the former Pacific Coast Building Officials Conference, which effective this month, because membership now covers 800 cities in 40 states, Alaska, Hawaii and Canada, has been renamed the International Conference of Building Officials. BOCA voted to hold its 1957 convention in New Orleans.



CARRIER "CLOVER LEAF" IS EASY TO VARY

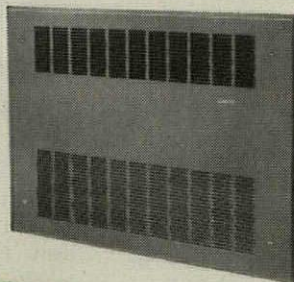


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*Trade-mark of American Seating Company

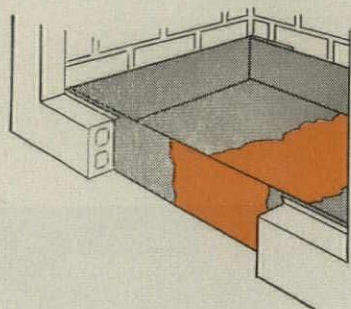
AMERICAN SEATING



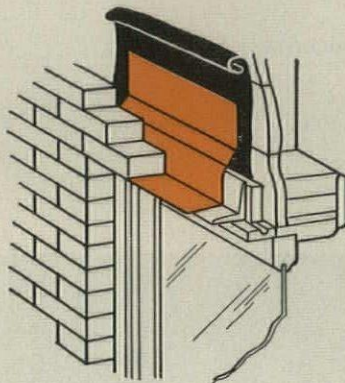
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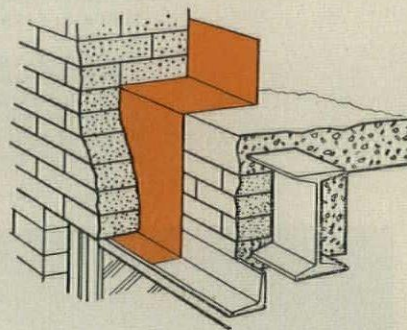
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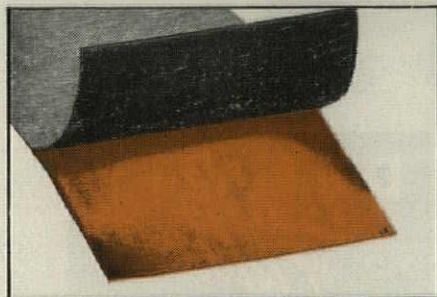
Easy to handle and apply. These flashing products incorporating "Electro-Sheet" are extremely flexible, easy to handle and are furnished in rolls up to 60" wide. They are available through building supply dealers throughout the United States and Canada.

For more information. If you wish more information about ANACONDA "Electro-Sheet," or want a list of manufacturers using it in their products, write: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

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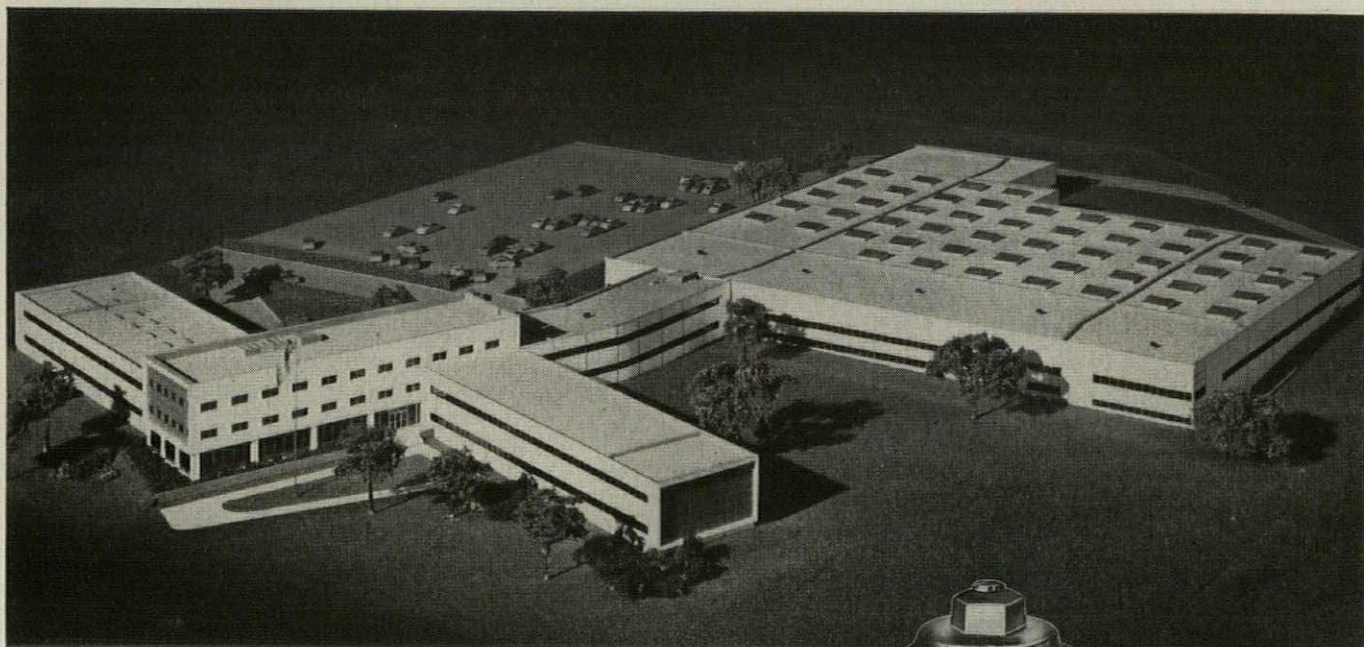
Asphalt-saturated fabrics, with ductile mastic bond.



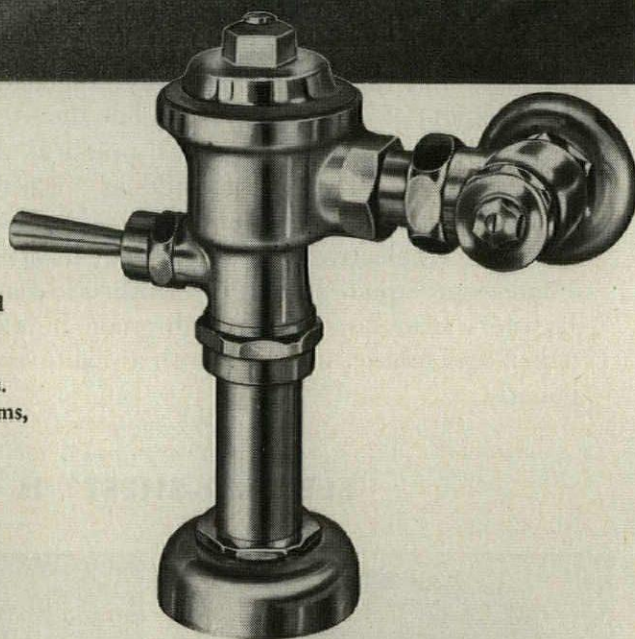
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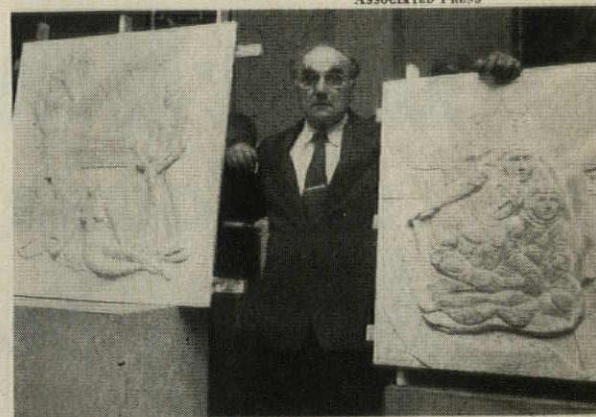
vacancy. This gain was the more remarkable when balanced against a decrease in the government tenancy, which dropped from 8,025,000 sq. ft. in October to 7,750,000 sq. ft. in May, and declined from 5.98% to 5.25% of total occupancy.

The latest market survey by NAREB also reflected stronger office rental conditions, with 72% of reporting communities registering vacancies of 2% or less, 18% vacancies of 3% to 5%. Higher rents than a year ago were reported by 31% of reporting communities; unchanged rates in 60%; lower rents in only 9%.

New York's phenomenal office construction was continuing unabated. In the uptown area, Pepsi Cola bid \$2 million (or \$160 a square foot) when the city auctioned off its old Board of Education headquarters at Park Ave. and 59th St. last month. Skidmore, Owings & Merrill would be its architects for a "prestige" headquarters it would erect on the site,

but it was still undecided whether to include rental space in the building.

New York's downtown, Wall St. area also was witnessing an upsurge. At Wall and William Sts., Metropolitan Life announced it would build a 27-story, 370,000 sq. ft. structure by Voorhees, Walker, Smith & Smith for two major bank and insurance company tenants. A block away at Wall and Pearl Sts., the Franklin Atlas Corp. announced a new 33-story, 248,000 sq. ft. tower designed by Lama, Proskauer & Prober. After a previous deal had bogged down in litigation, a new investing group headed by Realtor Charles F. Noyes and embracing the Vincent Astor, Jeremiah Milbank and Lazard Freres interests completed arrangements to erect a \$25 million 800,000 sq. ft. structure on the site of the present Produce Exchange at 2 Broadway, which may be increased before it is started to 1,200,000 sq. ft.



ZORACH WITH MODELS OF UNUSED RELIEFS

its mind on the matter, or find another place for the panels.

Given commissions to decorate the UNESCO headquarters under construction in Paris were Sculptors Alexander Calder and Isamu Noguchi from the US, Henry Moore of Britain, and Jean Arp of France, and Spanish-born painters Pablo Picasso and Joan Miro. For a "delegates' piazza" Noguchi will create a twentieth-century garden echoing traditional Japanese motifs (including pools using water from the air-conditioning system). Adjoining this piazza he also will design a sunken garden, including a Calder mobile. Briton Moore has been asked to design a "monumental" work to stand on a grass island before the structure's main entrance, and Arp a low relief work for a large library wall. Picasso will paint a 1,100 sq. ft. mural for the main conference hall wing. Architects for the building are Marcel Breuer of the US, Pier Luigi Nervi of Italy, and B. F. Zehruss of France (AF, June '53).

To help architects give clients a "general idea" of costs for sculptural decorations before a project is undertaken, the National Sculpture Society has distributed a handy do-it-yourself gimmick which reveals the Society's scale of recommended fees for preparing plaster models for statuary and bas reliefs and for executing such models in stone or bronze (see cuts). The rates were established in cooperation with carvers and bronze casters. The society noted that these charts for architectural sculpture "by the foot" were based on averages of fees quoted by a number of sculptors, foundries and carvers for typical jobs and warned actual prices will "vary according to individual sculptor's ability, reputation and experience"—a prudent qualification!

Zorach panels rejected by Texas bank; Calder, Noguchi to do UNESCO works

Architectural sculpture and sculptors made news in several ways last month:

Conspicuous by their absence at dedication of the new \$16 million Bank of the Southwest in Houston were three large, high-relief panels it had ordered from Lithuania-born Brooklyn Sculptor William Zorach, 69-year-old dean of US sculptors. In an "amicable settlement" the bank had rejected the final works, paying "in the neighborhood of \$50,000" on its \$124,755 contract, by its own account, but \$110,000, according to a statement by Zorach.

Board Vice Chairman L. R. Bryan Jr. denied there were any "political implications" in its rejection although Zorach was one of four artists accused of Communist leanings earlier this year by a Dallas citizens' group—a charge he vigorously denied. Bryan said the panels were rejected because they would have been unsuitable after the bank changed its name, having previously been called the Second National Bank of Houston, and also because they would be "too modern" for the new aluminum and granite structure.

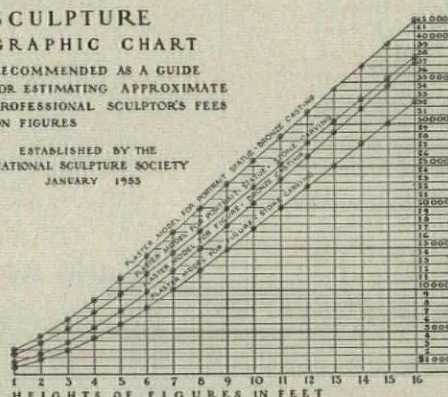
Zorach said the works were 80% cast, in aluminum with polished silver finish, when rejected. He scoffed at the bank-name reason, said the panels depict the history of Texas allegorically and would be suitable for any Texas bank. One panel,

to go over the main entrance was 30' x 32' and two panels for side entrances 10' x 12' each. In Houston, Architect Kenneth Franzheim, designer of the building had "no comment," but Zorach reported him "shocked" by the rejection, and said he was endeavoring to have the bank change

SCULPTURE GRAPHIC CHART

RECOMMENDED AS A GUIDE FOR ESTIMATING APPROXIMATE PROFESSIONAL SCULPTOR'S FEES ON FIGURES

ESTABLISHED BY THE NATIONAL SCULPTURE SOCIETY JANUARY 1953



SCULPTORS' FEES, chart for statuary work (above) is supplemented by similar chart for reliefs on a square-foot basis. For plaster models for low reliefs in stone, recommended rates range from about \$1,500 for 10 sq. ft. to about \$11,500 for 120 sq. ft. Models for high-relief stone and low-relief bronze models range from \$2,000 to \$17,000; for models for high-relief bronzes, \$2,750 to \$21,500.



SIMPLE RELIEF



COMPLEX

EXECUTION CHARGES for simple and complex reliefs are in addition to sculptor's fees and do not cover pedestals, foundations or settings.

This is table supplemented with another chart on recommended rates for bronze and lime-stone statues, by heights. At 5' bronze runs

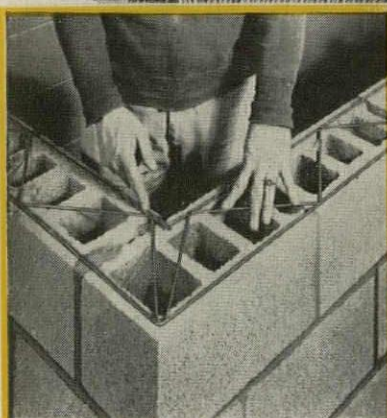
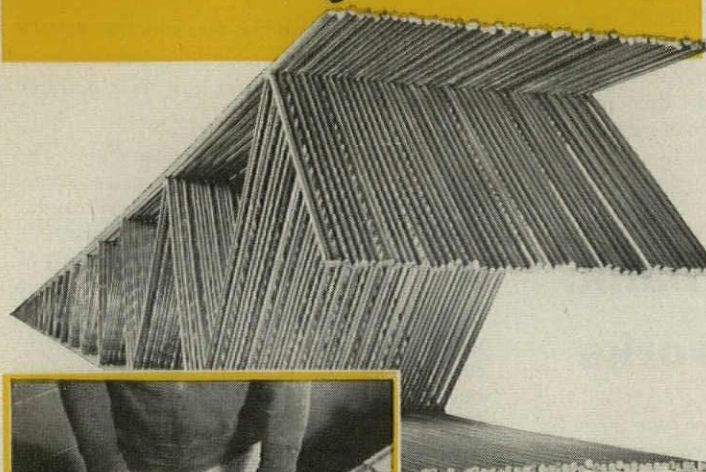
just over \$1,000, stone just above \$3,000, but this cost gap gradually narrows, at 16' both are about \$17,500.

STONE - SIMPLE - PER SQ. FT.	2"=\$70	4"=\$90	6"=\$110	8"=\$130	10"=\$150
STONE - COMPLEX - PER SQ. FT.	2"=\$95	4"=\$115	6"=\$135	8"=\$155	10"=\$175
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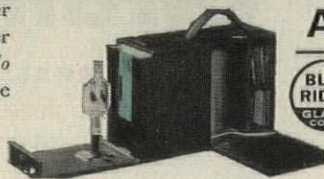
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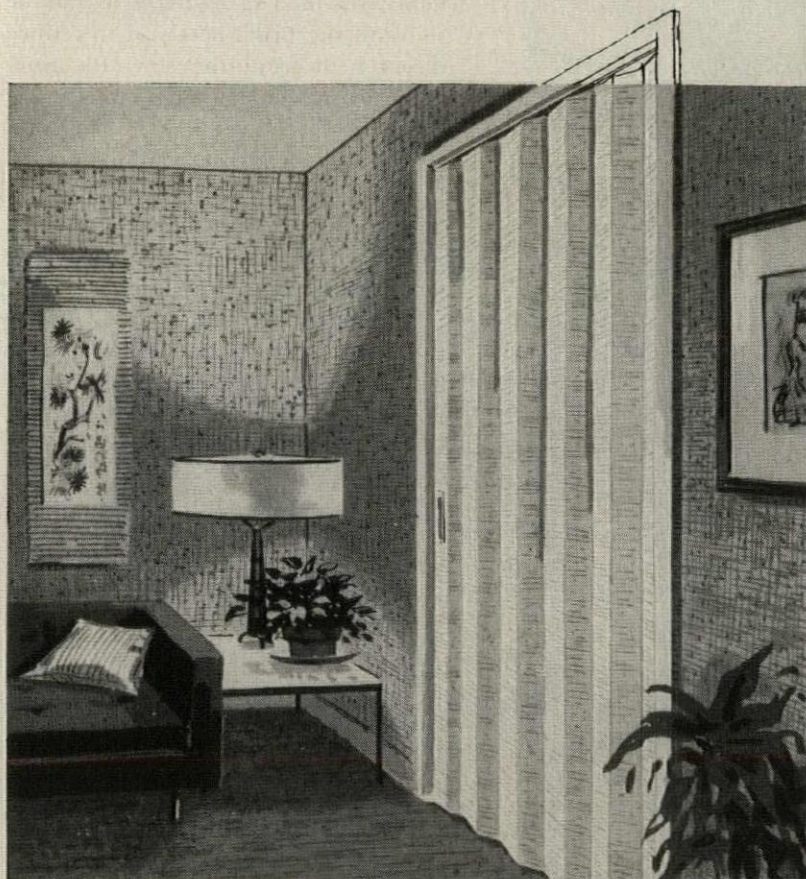
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BUILDING VOLUME: Nonresidential outlays \$845 million ahead of 1955—thanks to industrial, commercial booms

Big building was taking the spotlight as the economic hero of 1956—developing into a billion-dollar lifesaver that was buttressing business activity against the declines in autos and home building.

An analysis of construction expenditures estimates of the Commerce and Labor Depts. for the first five months of the year (see table) showed a drop of \$476 million in residential construction, compared with 1955 spending. To offset this decline, and push total January to May outlays \$369 million ahead of those a year ago, nonresidential construction registered a husky, prosperity-sustaining \$845 million advance over '55 outlays.

Commercial, industrial booms. At a midyear business outlook symposium of the US Chamber of Commerce last month, AGC Executive Director James D. Marshall reiterated his organization's prediction that 1956 construction outlays will set another all-time record of about \$44.5 billion, or roughly 4% above 1955 spending. Commerce and Labor officials concurred.

Private commercial and industrial building, and highways and state and local public works "are emerging as the giants of nonresidential construction this year," said Marshall. Last December AGC predicted nonresidential expenditures this year should approach \$28 billion, he recalled, but now it appears they will probably go another \$1 billion above that.

Private industrial building outlays have

been running 25% ahead of 1955 spending (see chart), and according to Marshall should pass the \$3 billion mark for the full year. Commercial construction, running 23% ahead of 1955, and likely to step up even more during the summer, may climb as high as \$3.8 billion.

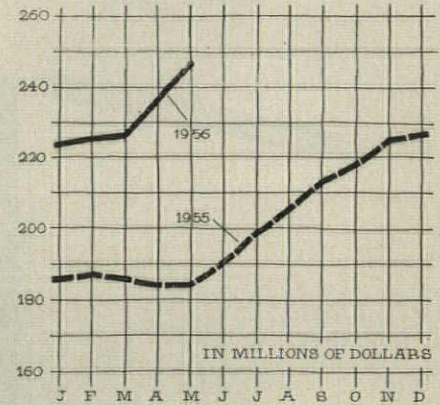
Public construction gains. While federal construction spending has been contracting sharply, state and local public works projects have been soaring, with total public expenditures for January-May 6% greater than a year ago. Outlays for public industrial building (mostly atomic energy facilities) are trailing 1955 spending by 57%, and public hospital and institutional spending down 14%. But a marked increase in highway construction in May sent outlays for that purpose 28% ahead of last year's for January-May.

Bright industrial outlook. Three different reports released last month indicate prolonged, increasing construction of new industrial plants:

▶ A survey by the Society of Industrial Realtors found: vacant land suitable for industrial or warehouse buildings commanding premiums, more costly than a year ago, and still rising; sites in established industrial parks also higher; modern single-story plants readily saleable at prices nearer to replacement costs than ever before—but few available; older multi-story buildings sliding in price and harder to sell than before at almost any price.

▶ The latest Commerce Dept.-SEC survey of expenditures for new plants and equipment shows them running at a rate of \$34.8 billion a year during the April-June quarter, and slated to hit a rate of \$36.7 billion a year this quarter. For the full year, these agencies said, they would average \$35 billion, compared with \$28.7 billion in 1955.

▶ The latest annual McGraw-Hill survey of



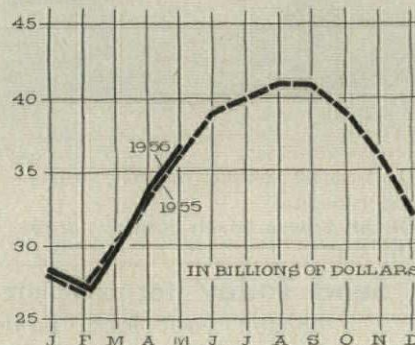
PRIVATE INDUSTRIAL construction expenditures for the first five months of 1956 totaled \$1,156 million, a 25% increase over 1955 Jan. to May outlays. For May these expenditures were \$247 million, 34% greater than May '55.

plans for new plants and equipment is more optimistic than the government's. It indicates that such outlays this year will total \$39 billion, or 30% more than in 1955. But the most significant feature revealed by this survey is the very high level of expenditures already planned for 1957, 1958 and 1959. For the first time since these surveys were started nine years ago, preliminary plans for the second year ahead (1957) almost equal those for the current year (\$38.1 billion next year, compared with \$39 billion this year), and advance plans for 1958 and 1959 are only slightly lower (\$34.1 and \$33.6 billion). With the normal increase over preliminary plans that usually occurs, according to McGraw-Hill officials, this means the "industrial building boom is set to roll three more years"—at least.

EXPENDITURES BY BUILDING TYPES

	First 5 months			
	May '56	1956	1955	%±
<i>(millions of dollars)</i>				
PRIVATE BUILDING				
Residential (nonfarm)	1,262	5,645	6,105	-8
Nonresidential	699	3,315	2,804	18
Industrial	247	1,156	927	25
Commercial	266	1,280	1,044	23
Offices; lofts; ware-				
houses	101	502	423	19
Stores; restau-				
rants; garages ...	165	778	621	25
Religious	56	275	273	**
Educational	42	202	198	2
Hospitals; institutions	24	124	142	-13
Public utilities	392	1,743	1,667	5
*PRIVATE TOTAL	2,502	11,320	11,182	1
PUBLIC BUILDING				
Residential	19	94	110	-15
Nonresidential	334	1,532	1,746	-12
Industrial	32	165	385	-57
Educational	216	994	963	3
Hospitals; institutions	26	112	130	-14
Military	113	457	441	4
Highways	470	1,455	1,140	28
Sewer; water	109	462	411	12
*PUBLIC TOTAL..	1,157	4,440	4,209	6
*GRAND TOTAL..	3,659	15,760	15,391	2

*Minor components not shown, so total exceeds sum of parts.
**Less than one per cent.



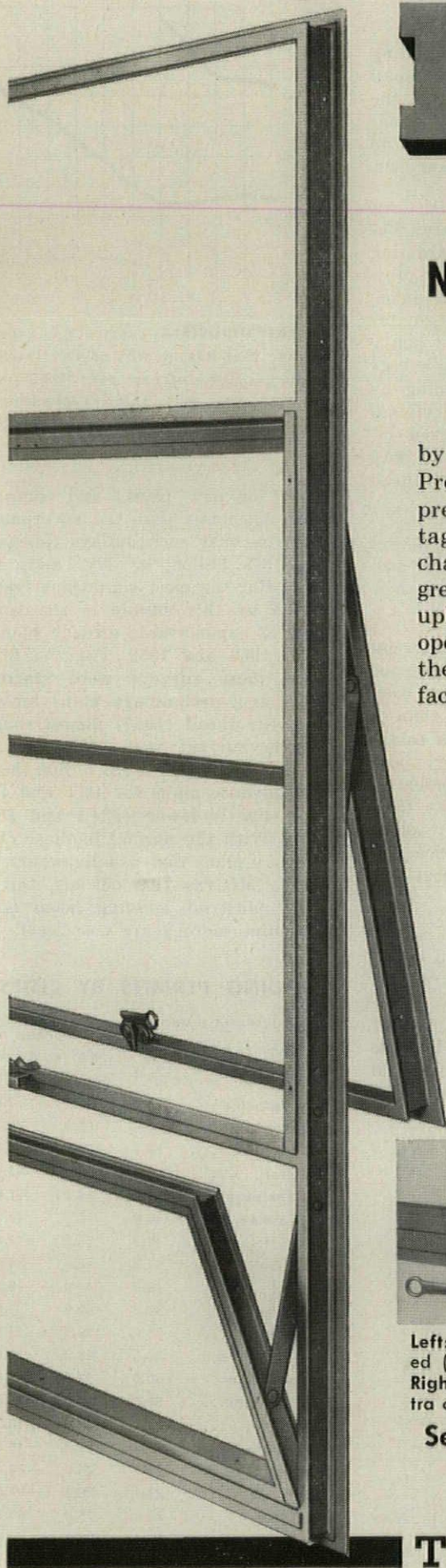
TOTAL CONSTRUCTION expenditures in May were \$3,659 million, or 2% greater than the \$3,606 million in May '55. After Labor and Commerce Depts. revised official April estimates to \$3,351 million (originally \$3,250 million), March was the only month so far this year when outlays trailed those in 1955.

BUILDING PERMITS BY CITIES

	First 5 months				1955
	1956	1955	% Change	rank	
New York	\$307.7	\$272.4	13.0	1	
Los Angeles ..	186.3	172.7	7.9	2	
Chicago	140.6	105.6	33.1	3	
Dallas	68.7	75.0	-8.4	4	
Houston	68.1	70.5	-3.4	5	
Philadelphia ..	53.6	58.0	-7.6	6	
Milwaukee ...	46.9	40.3	16.4	11	
Detroit	44.8	55.6	-19.4	7	
New Orleans...	44.5	52.3	-14.9	8	
Denver	42.2	44.9	-6.0	10	
San Diego	37.2	35.9	3.6	12	
Cleveland	35.2	29.5	19.3	16	
San Francisco	30.5	23.3	30.9	19	
Long Beach ..	30.5	33.0	-7.6	14	
San Antonio ..	30.0	26.9	11.5	18	
Seattle	29.3	32.9	-10.9	15	
Baltimore	27.2	52.3	-48.0	9	
Atlanta	25.7	34.0	-24.4	13	
Wash., D. C. ...	23.4	28.4	-17.6	17	
San Jose	22.6	15.0	50.7	25	
Tampa	22.4	22.3	.4	20	
Austin	22.2	18.3	21.3	21	
Cincinnati ...	21.3	16.5	29.1	23	
Columbus	21.0	15.8	32.9	24	
Boston	20.9	17.2	21.5	22	

(SOURCE: DUN & BRADSTREET)

TRENDS continued on p. 32

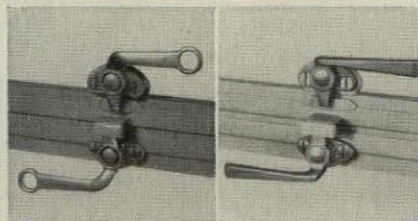
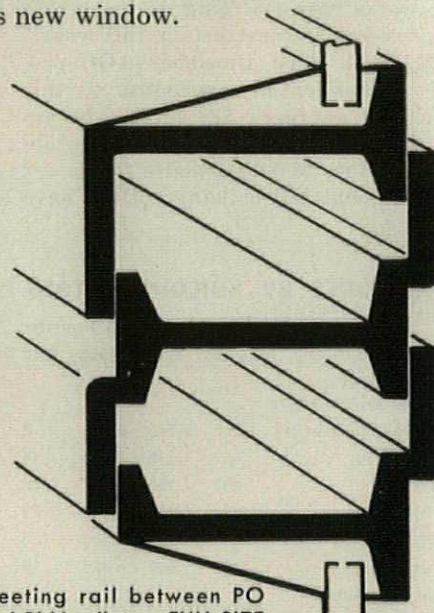


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Right: Bronze handle fastener (at extra cost)

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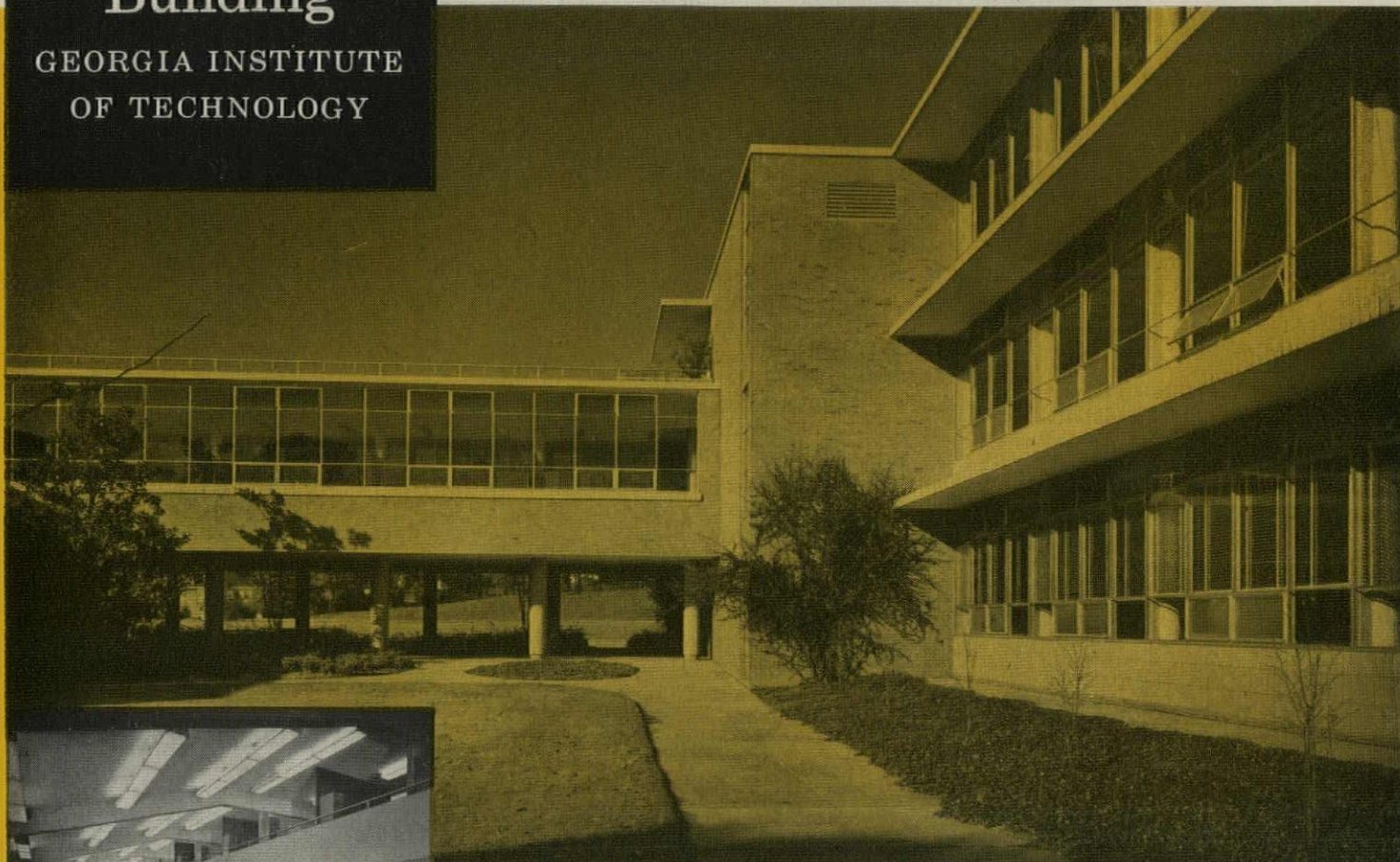
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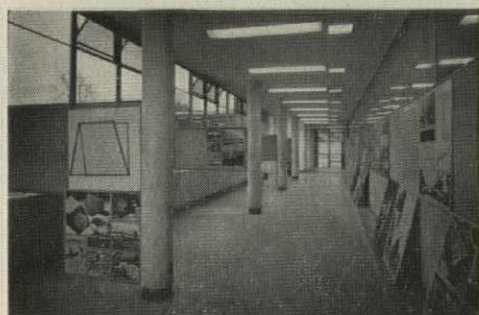


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BUILDING COSTS: Rise in materials prices halts temporarily; California builders study ways to curb cutthroat bidding

No agreement was in sight between steel producers and steel workers as FORUM went to press. It was still uncertain whether there would be a crippling strike beginning July 1, or what the ultimate price boosts for structural and other steels would amount to—with or without a strike. Few, however, expected the hike for structurals would be less than \$9 a ton.

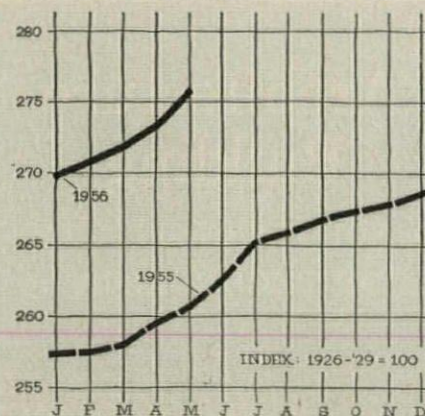
In a temporary deviation from its steady uptrend, the BLS index of average wholesale prices of building materials dipped 0.3% from April to May (see chart). At the same time the Boeckh index of non-residential building costs advanced 0.8%, showed a 5.9% increase over May, 1955.

Profits down? But as costs and prices continued generally upward, so did the complaints of contractors who moaned about slimmer and slimmer profit margins, murderous competition and steadily mounting failures (an increase of about 35% over 1955 in construction, according to latest

Dun & Bradstreet figures). In the San Francisco Bay area, in fact, the Central California AGC chapter was so concerned over profitless, cutthroat competition that chapter Secretary-Manager A. Bruce McKenzie was launching a campaign to identify its main sources, discourage the evil.

On a recent check, said McKenzie, he found that many of the most responsible Bay Area building contractors are making only a 1% to 3% profit on bid jobs. Despite this, he added, "rumors" of high profits in the building business bring into his office more than ten potential contractors a month in search of information on how to become builders. Not one of his chapter's 135 members has failed in the past three years, he notes, but today most depend on negotiated jobs, except those projects too large for inexperienced Johnny-come-latelys to bid on.

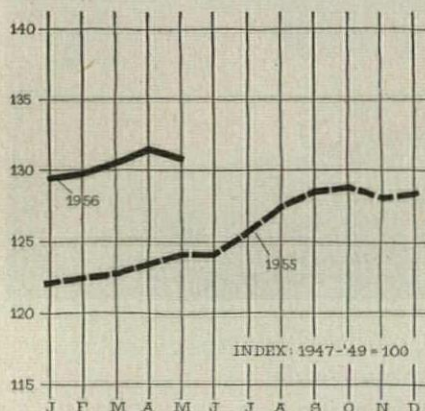
Lax licensing? With construction booming, there are lots of jobs available, says McKenzie. But he adds that too many jobs are going to contractors who must produce inadequate work after they learn their bid was too low. He is not sure yet, but he thinks the trouble may be that it is too easy to get a state contractor's license. He has started to keep records of bids made by non-AGC members, compared with members' bids; how often non-members complete large projects and how often bonding companies have to step in to settle their contracts. The "smart buyer" today, he says, is going to a bonding company before he signs with a contractor, to make sure his project will be completed even if the contractor goes sour.



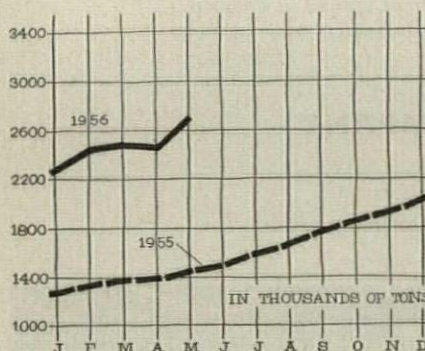
CONSTRUCTION COSTS for nonresidential buildings rose 0.8%, from 273.7 in April to 276.0 in May on the index compiled by E. H. Boeckh & Assoc. For the first five months of the year the Boeckh index increase was 2.7%.

Mostly ignorance. The main problem of cutthroat contractors is probably ignorance, according to McKenzie. They think profits will be very easy. Few know what real current costs are; fewer know what future costs will be. An example, he says, is a pending carpenters' strike in northern California. AGC members, he says, are not making any agreements that do not provide for whatever wage scales will prevail after a settlement is reached. But inexperienced, cutthroat bidders are making contracts with little regard for this future cost increase, he says, and later will find it wiping out their profits.

Before the end of the year McKenzie also hopes to make a "full time study" in Sacramento of the conditions under which various contractors who failed were able to obtain their contractor's licenses in the first place.



BUILDING MATERIALS PRICES declined 0.3% in May to 130.9 from 131.3 in April. Main cause of this decline in the BLS index of average wholesale prices was a 3.7% drop in average prices for metal doors, sash and trim.



STRUCTURAL STEEL unfilled orders on May 1 totaled 2,687,256 tons, the highest volume since January, 1951. Through April, orders totaled 1,481,347 tons, a gain of 43% over the same period of 1955, according to the American Institute of Steel Construction, and shipments were 1,133,254 tons, a 25% increase over Jan. to April last year.

BUILDING MONEY: Worst of credit "squeeze" passing; scarcity of lease-purchase bids disappoints GSA

Through open-market purchases of government securities Federal Reserve officials last month were easing credit conditions slightly. The peak of the tight-money squeeze of 1956 appeared to have passed, and short-term interest rates were gradually moving lower.

But whether it was the 1956 spring squeeze, or other factors, General Services Administration officials were sorely disappointed over the bids they received for the financing on the first building they proposed to erect under lease-purchase arrangements. On three alternate types of bids they received no bids on the financing alone, only one qualified bid covering both construction and financing, and four bids on construction alone. But without financing, the construction-only bids were of little use, and at month's end it was expected GSA would reject all bids and try again with a fresh call for offers.

The first project involved a \$1.6 million Post Office and Court House in Rock Island, Ill. To follow it soon were 28

more for another \$90 million already approved by Congress, and perhaps another 25 for still another \$310 million being submitted to the present session of Congress for approval. For the first project GSA required financing bids that would not reflect an interest rate exceeding 4% over a 25-year amortization period, a rate established by the Budget Bureau some time before the recent credit squeeze. The Budget Bureau took the position that such financing would be virtually as good as a government bond, inasmuch as the owner-lender would be scarcely more than a bystander. The government would supervise construction and then assume all maintenance and operation responsibilities.

But in the money market that prevailed a month ago, even the lone bidder who offered to provide the lease-purchase financing at the 4% ceiling tied an extra condition to his bid. If the government wanted to shorten the amortization period to less than 25 years, he wanted a prepayment premium.

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Fred Manske named National Gypsum president;

John Yeon wins Brunner Prize of National Institute of Arts and Letters



MANSKE

EXECUTIVE PARADE

One time newsboy **Fred A. Manske**, 55, who worked his way through Armour Institute of Technology for his mechanical engineering degree (1923), was advanced last month from the executive vice presidency of National Gypsum Co. to succeed President **Lewis R. Sanderson**, who retired on reaching the company's 65 age limit. Manske (originally a US Gypsum technical adviser and trouble-shooter) began his career with the nation's second largest manufacturer of building materials in 1933, when **Melvin H. Baker**, now National's board chairman, hired him as an assistant to the vice president for operations. He was promoted to general production manager in 1949, vice president for operations in 1951, and executive vice president in 1954.

As it started celebrating its 50th anniversary year, the Bryant & Detwiler Co., of Detroit, general building contractors for the GM Technical Center, Ford Central Staff Building, Northland Shopping Center and the Detroit City-County Building, installed as president **Erwin F. Coveney**, who joined the company as a staff estimator in 1915. **R. W. Detwiler**, who joined the firm the year after it was established by his brother **Ward A. Detwiler** and **John A. Bryant**, and was president for the last ten years, became board chairman.

Charles A. ("Chuck") Kilgore, executive secretary of the Portland (Ore.) Assn. of Building Owners and Managers since 1945, resigned to become executive assistant to Executive Vice President **Robert B. Beach** in NABOM's Chicago headquarters.

ELECTED: Worthington Corp. Vice President **Matthew M. Lawler**, as president of the Air-Conditioning and Refrigeration Institute succeeding **James Emmett Jr.**, of the Jas. P. Marsh Corp.;

Sales Manager **Louis F. Fontana**, of Irving Subway Grating Co., N. Y. as 1956-57 president of the National Assn. of Architectural Metal Mfrs., succeeding **W. Harrison Graver**, of Engineering Metal Products Corp., Indianapolis; President **Malcolm Meyer**, of Certain-teed Products Corp., as board chairman of the Asphalt Roofing Industry Bureau; **John J. Chyle**, welding research director of A. O. Smith Corp., Milwaukee, as president of the American Welding Society, succeeding New Yorker **J. H. Humberstone**, of Air Reduction Co.

QUITTING SCHOOL

Virginia Polytechnic Institute announced the impending retirement of Professor **Clinton H. Cowgill**, FAIA, 65, head of its department of architecture for 28 years. His successor: Architect **Leonard J. Currie**, director of the Inter-American Housing Center at Bogota, Columbia, since 1951, previously on the Harvard architectural faculty and a member of the Architects Collaborative.

Because he felt no staff member should serve more than a decade in a top administrative position, **William T. Arnett** resigned after ten years as dean of the University of Florida's college of architecture and applied arts to resume his former position as full professor of architecture. Named acting dean: **H. W. Chandler**, university vice president for academic affairs.

Architectural Librarian **Ruth Cook** of Harvard University's graduate school of design, friend and helper to countless Harvard architectural students and faculty for 37 years, who also made the school's collection of architectural books, pamphlets and folios one of the most outstanding in the nation, retired last month with an unusual tribute: a fund for a 'round-the-world tour contributed by 460 Crimson architectural alumni, faculty and students.



COOK



HELMSLEY

HONORED: New York realtor and investment syndicate expert **Harry B. Helmsley**, who as a Quaker donated \$75,000 to Brandeis University "to stimulate the growth of understanding among peoples of different faiths, already symbolized on the Brandeis campus by its three chapels" (AF, Sept. '54), was saluted by N. Y. realty leaders at a dinner arranged by the Brandeis Centennial Fund Committee with **William Zeckendorf** as toastmaster. Two weeks later Zeckendorf also was honored for his civic and philanthropic activities in New York, received a Gold Medallion of the city from Mayor **Robert Wagner**.

In Washington Vice President **Richard Nixon** presented the 1955 Distinguished Service medal of the Society of American Military Engineers to **Eugene A. McGovern**, vice president of Cauldwell-Wingate Co., N. Y. C. builders. In Columbus, Ohio, at the third annual conference for engineers and architects of Ohio State University college of engineering, Distinguished Alumnus awards for outstanding eminence in their respective fields were given to Architect **L. Morgan Yost**; **Clinton Dudley Clawson**, president of the Ferro Corp., and **Richard C. Diehl**, president of the Chase Brass & Copper Co. In Cleveland, Ferro Corp. Vice President **Glenn A. Hutt**, president of the Porcelain Enamel Institute, was made a fellow of the American Ceramic Society for "productive scholarship in ceramic science and notable contribution to the ceramic arts and industry."

GRANTS AND PRIZES

Annual awards from the National Institute of Arts and Letters announced a month ago included: Gold Medal for Sculpture, to **Ivan Mestrovic**; the \$1,000 Arnold W. Brunner Memorial Prize in Architecture, to Portland (Ore.) Architect **John Yeon** (honorable mention to

Minoru Yamasaki); a grant of \$1,000 in literature, to Architectural Historian **Henry-Russell Hitchcock**.

The John Simon Guggenheim Memorial Foundation announced a series of Guggenheim Fellowships for 1956 that included: sociology, Author **Lewis Mumford**, the development of cities; history of architecture, Yale University Professor of History **George Alexander Kubler**, studies of Portuguese and Spanish architecture, 1450-1800; research engineering, Cornell University Structural Engineering Professor **George Winter**, structural engineering.

DIED: **Clarence Wilson Brazer**, 76, former president of the Pennsylvania State Assn. of Architects, National Council of Architectural Registration Boards, also a noted philatelist who once appraised President Franklin D. Roosevelt's stamp collection, May 6 at his N.Y.C. home; **Harold Alexander Ley**, 82, former president of Fred T. Ley, Inc., builders of New York's Chrysler Building and founder of the Life Extension Institute, May 11 in N.Y.C.; **Walker Gibson White**, 60, general manager of contracting operations for the Westinghouse elevator division and former chairman of the National Elevator Manufacturing Industry, Inc., May 14 in N.Y.C.; five Crane Co. executives including industrial sales Vice President **James A. Dwyer**, 59, and heating sales Vice President **George L. Erwin Jr.**, 60, May 15 in a company airplane accident at Jeffersonville, Ind.; **Joseph W. Holman Jr.**, 41, president of Marr & Holman, architect and engineering firm that specializes in design and construction of stadia, recently started planning a multimillion dollar N.Y. Giants Stadium, May 20 in Nashville, Tenn.; **Cleveland Rodgers**, 71, editor, city planning author and former N.Y.C. Planning Commission member honored by the local AIA chapter in 1952, May 21 in N.Y.C.; **Carlton P. Roberts**, 53, junior partner and chief engineer of Voorhees, Walker, Smith & Smith, who had worked on the design for the new AEC headquarters in Washington, the Ford research and engineering center in Dearborn, May 27 in Hudson, N.Y.

there's a **RIXSON** concealed closer or pivot set for every door

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According to your requirements in appearance,
hanging style, function and construction detail,
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offset hung



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single acting
floor type

for entrance, vestibule and interior doors—where full unobstructed door opening space and wide door swing (to 180°) are important. Special styles are available for fire doors and x-ray room doors. Arm locking arrangement allows vertical adjustment of door.

offset hung



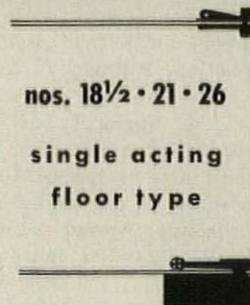
UNI • CHECKS

nos. 65 • 66 • 67 • 68

single acting
floor type

for interior room doors—where full unobstructed door opening space and wide door swing (to 180°) are important. Depth of 2⁷/₃₂" (including cement base) to suit shallow floors. Special styles meet Underwriters' Laboratories approval for fire doors.

center hung

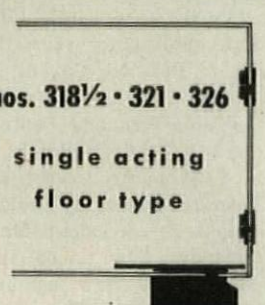


nos. 18½ • 21 • 26

single acting
floor type

for entrance, vestibule and interior doors—where concealment of both closer and door hanging hardware is desirable when door is open or closed. Ideal for batteries of doors. No mullions required, allowing utmost use of entrance area.

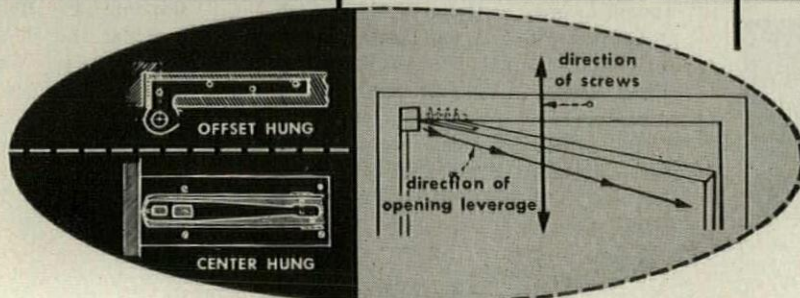
butt hung



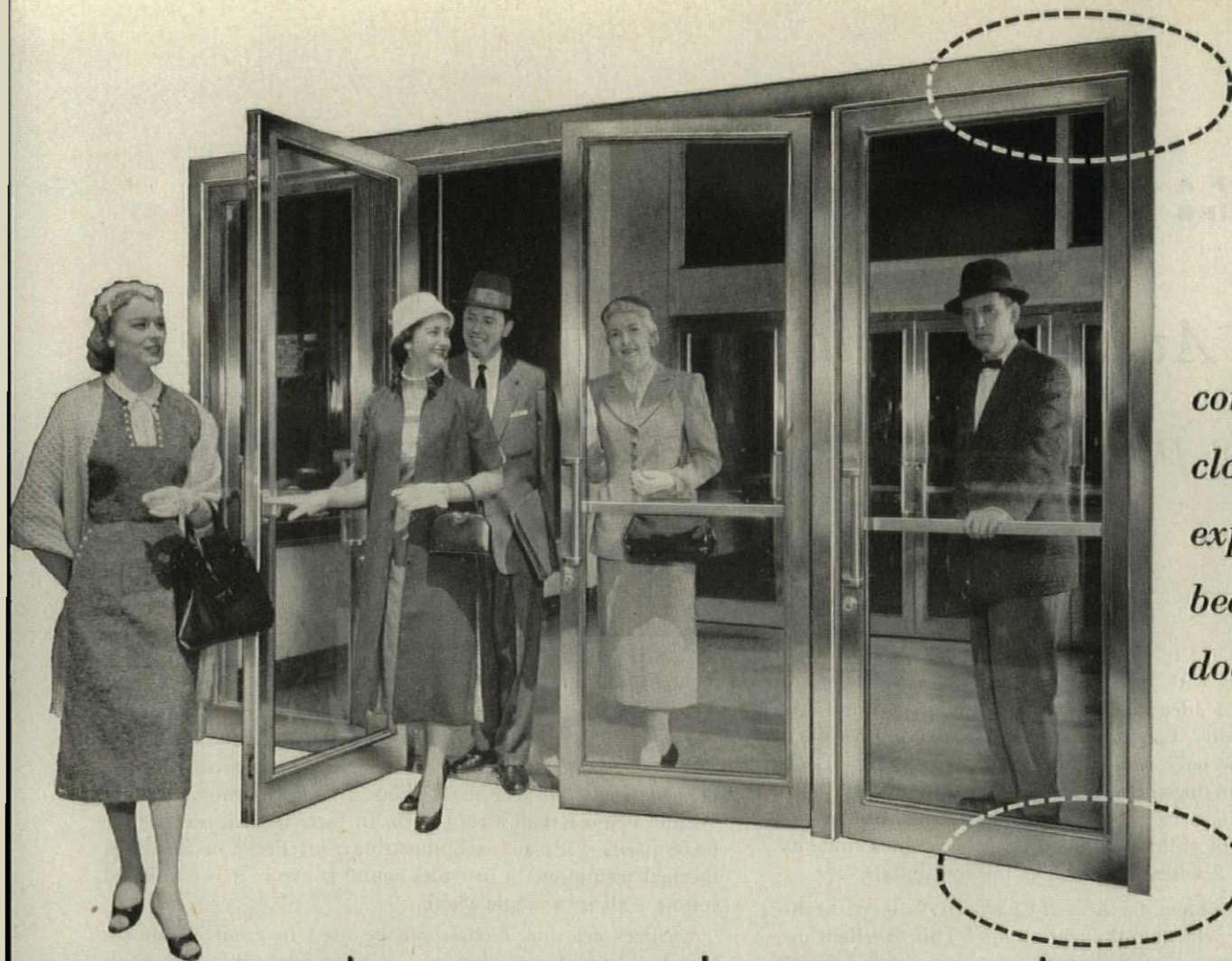
nos. 318½ • 321 • 326

single acting
floor type

for entrance, vestibule and interior doors—where it is desirable to have door hung independently from closer. RIXSON ball hinges, featuring vertical adjustment, are generally specified for door hanging.

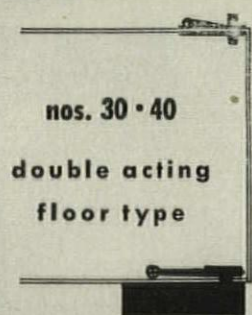


Because screws are at right angles to opening leverage, pivotal hung doors are more securely attached—less apt to pull away from the jamb.



*conceal the
closer and
expose the
beauty of the
door*

center hung

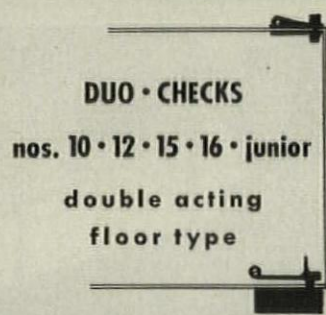


nos. 30 • 40

double acting
floor type

for entrance, vestibule and interior doors that swing both in and out with each swing separately adjustable to local wind and draft conditions. Both the closer and door hanging hardware are completely concealed.

center hung

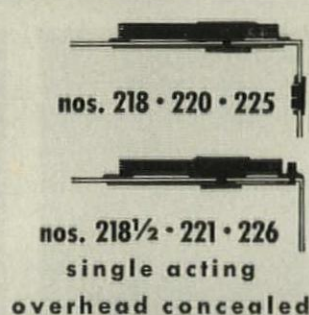


DUO • CHECKS

nos. 10 • 12 • 15 • 16 • junior
double acting
floor type

for interior room doors—where double door swing and complete concealment of door hanging and closer hardware are desirable. These closers are ideal for hospital and restaurant doors where people pass through with hands occupied.

butt or center hung



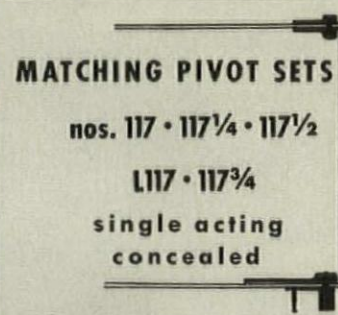
nos. 218 • 220 • 225

nos. 218½ • 221 • 226

single acting
overhead concealed

for entrance, vestibule and interior doors—where it is desirable to conceal closer in jamb above door. Compact size, 2½" x 2½" x 17", makes closer ideal for modern, narrow trim installations. RIXSON adjustable ball hinges are recommended for use with No. 218 series.

offset and center hung



MATCHING PIVOT SETS

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L117 • 117¾

single acting
concealed

for pivotal door hanging only. Match the hanging style and general appearance of doors with RIXSON offset or center hung closers. Widely used on inactive doors such as on closets and wardrobes. Styles available for all doors from the lightest to the heaviest.

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Award-winning school housing 770... plus playgrounds...on less than 2-acre site...

by Charles R. Colbert

MOST CITIES with mass populations are faced with the problem of adequate educational facilities. Land is a precious commodity. Land clearance is a luxury in which taxpayers will allow only small indulgence. This situation was especially acute in the section of New Orleans where the Phillis Wheatley Elementary School now stands. Specifically, 770 elementary school children had to be housed on a mid-city site of less than 2 acres for one-half million dollars.

To solve this problem, the firm of Charles R. Colbert, Architect and Planner, elevated the classrooms! This excellent use of cantilever system provided extensive playgrounds beneath the 22 classrooms and sheltered these grounds from frequent rains as well. In recognition of this creative ingenuity, the school received an Award Citation from Progressive Archi-

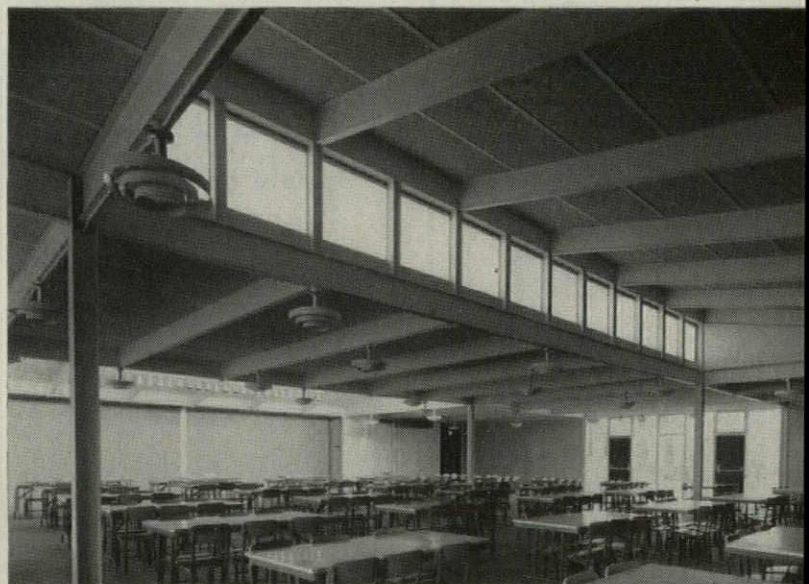
tecture Magazine and a Top Award from School Executive Magazine.

Like many other outstanding schools throughout the country, Phillis Wheatley is a good example of what can be accomplished when the Tectum Method is used. Method, because Tectum is more than a roof deck. In fact, Tectum serves four basic needs — it's a noncombustible roof deck; it furnishes thermal insulation; it provides sound control; it is a finished ceiling — all in a single plank.

Chances are that Tectum can be used to great advantage in a building of your design. For your next project, consult your nearest Tectum distributor or Sweet's files, 2e/Te. Tectum Division, Peoples Research and Manufacturing Company, 310 South Sixth Street, Newark, Ohio.



In this classroom, Tectum is used over welded steel joists. Note the spacious air that this achieves. The spatial design of Phillis Wheatley was originally conceived as a "house of cards".



Steel beams, used both on flat and raised planes, provide interesting variety in the cafeteria. Tectum is easily installed over either steel, wooden or prestressed concrete beams; the resultant effect is always arresting.

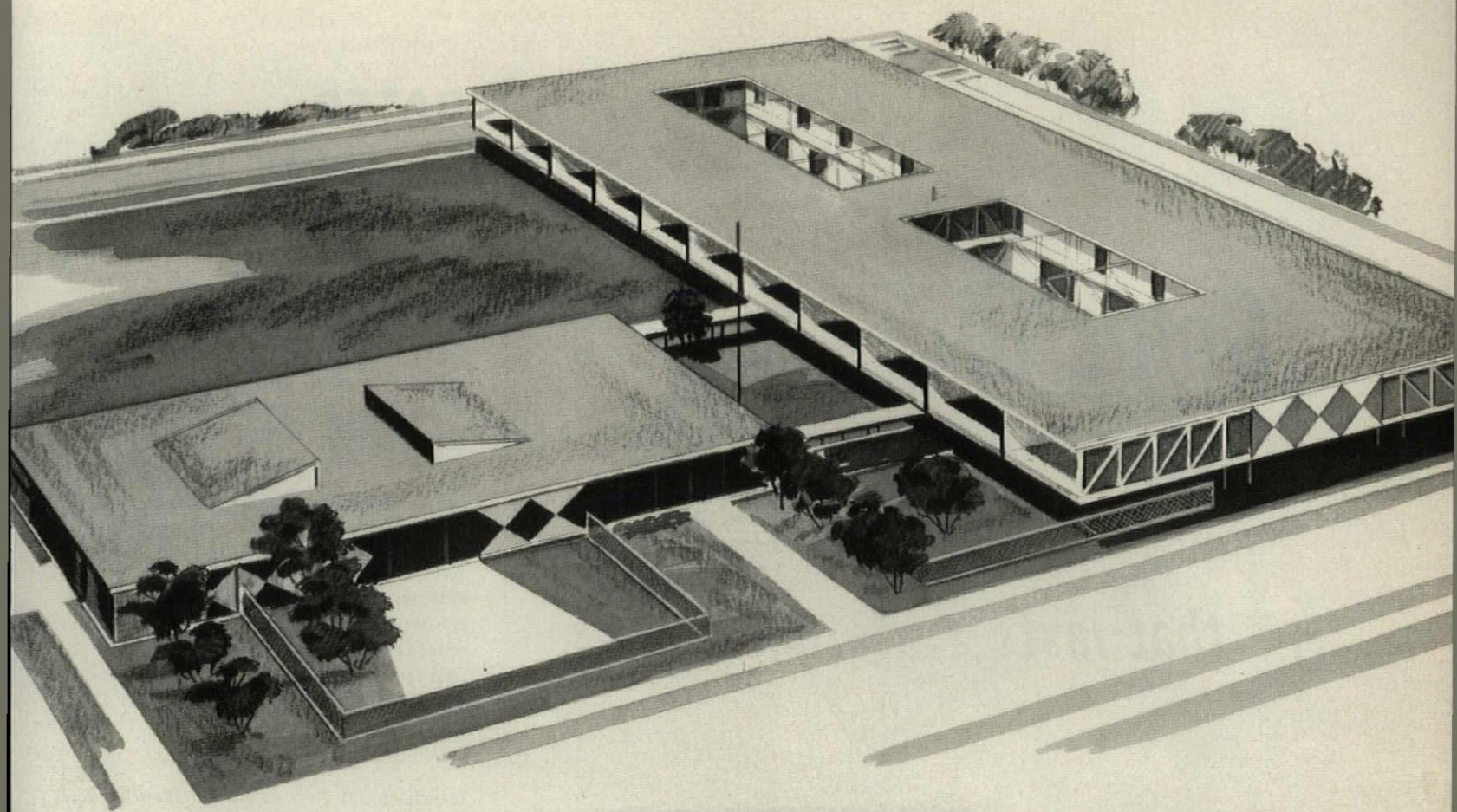


why lay a
roof deck...

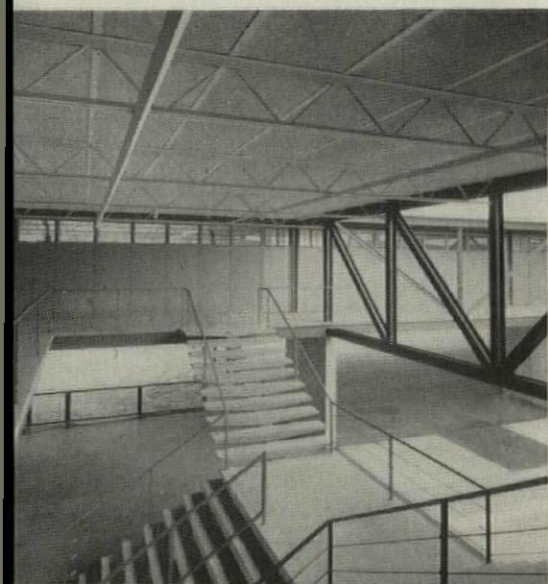


cover it with
insulation...



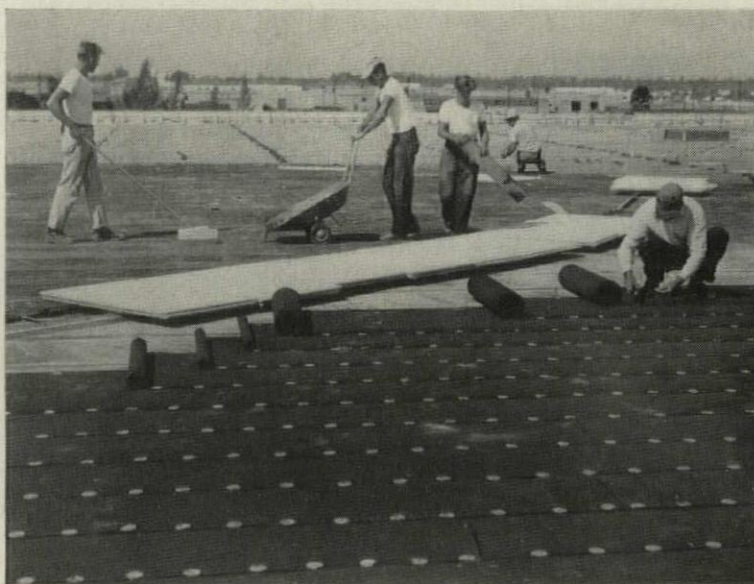


Architect's rendering of Phillis Wheatley Elementary School, New Orleans, Louisiana. Effect of plane against mass, transparency to solid, right angle to acute intersection was exploited through an exposure of structure and utilitarian items usually hidden within. Charles R. Colbert, Architect; Mark P. Lowrey, S. C. Moschella, Frances Fort, Associates; Keller Construction Corp., General Contractor. All are of New Orleans.



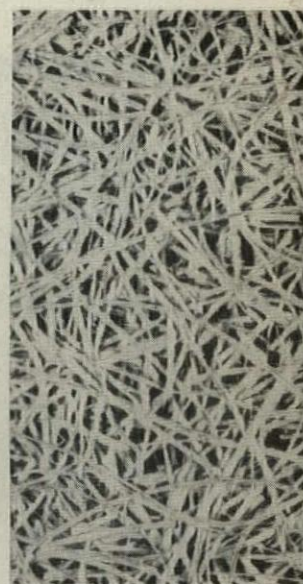
Stairs leading from classrooms to ground level are sheltered by Tectum. The clatter of students on these concrete stairs is also absorbed by Tectum, instead of bouncing off as with hard materials.

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DATES

"Twenty Years of Photography by Gottscho-Schleisner," architectural collection, through summer, Museum of the City of New York, New York.

Smithsonian Institution Traveling Exhibits: "San Francisco Bay Region Architecture," through July 31, Hunter Gallery of Art, Chattanooga, Tenn.; "Architectural Photography," through July 31, Calif. College of Arts & Crafts, Oakland, Calif.

School Plant Planning Workshop, Dept. of Architecture, University of Colorado, through July 20, Boulder, Col.

Massachusetts Institute of Technology, special two-week summer programs: "Plastics in Building," begins July 2; "Structural Design for Dynamic Loads," begins Aug. 6; "City and Regional Planning," begins Aug. 20, at M.I.T., Cambridge, Mass.

International Federation for Housing and Town Planning, annual convention, July 22-28, Vienna, Austria. Information: Charles Ascher, 838 West End Ave., New York 25, N.Y.

National Shade Tree Conference, annual convention, Aug. 20-24, Royal York Hotel, Toronto, Canada.

Associated General Contractors, midyear board meeting, Sep. 17-19, Schroeder Hotel, Milwaukee, Wis.

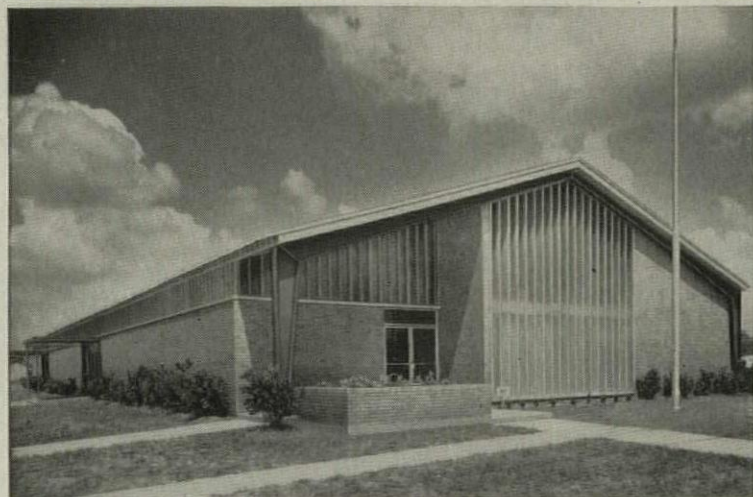
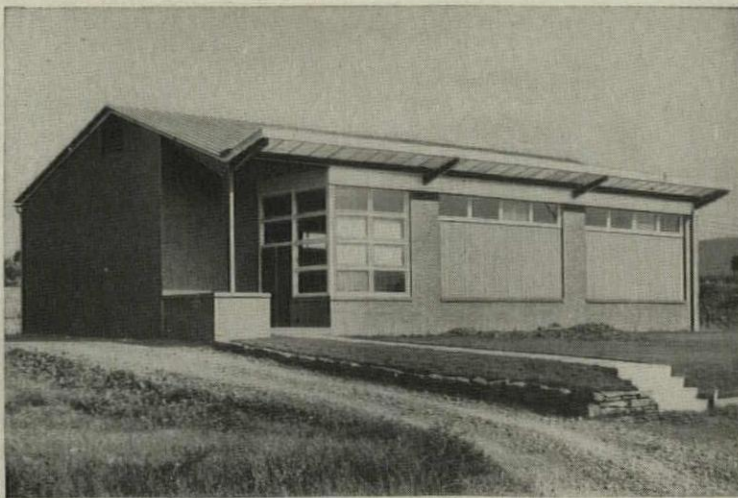
Building Research Institute, conference on Modern Masonry Construction, at the institute, September 19-20, Washington, D.C.

American Title Association, annual convention, Oct. 17-20, Fontainebleau Hotel, Miami Beach.

National Assn. of Housing & Redevelopment Officials, annual convention, Oct. 21-24, Statler Hotel, New York City.

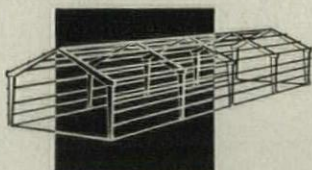
National Assn. of Real Estate Boards, annual convention, Nov. 11-16, Jefferson Hotel, St. Louis, Mo.

AIA Regional meetings: North Central, Sep. 28-29, Pfister Hotel, Milwaukee; Gulf States, Oct. 7-9, Chattanooga, Tenn.; Calif. Council of Architects, Oct. 10-13, Yosemite Lodge, Yosemite Natl. Park; Western Mountain region, Oct. 19-20, Hotel Utah, Salt Lake City; New York State, Oct. 24-27, Lake Placid Club, Lake Placid; Tex., Oct. 31-Nov. 2, Corpus Christi; Mid-Atlantic and Penn. Society of Architects, Nov. 14-16, Hershey Hotel, Hershey, Penn.



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The buildings above are just a few examples of what architects are doing these days, using Butler metal buildings as the basic structure. Where building capital is limited, Butler buildings give you important opportunities to cut cost corners.

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Your reputation is safeguarded. Butler buildings are widely accepted for commercial and industrial construction because they are designed and manufactured as permanent structures in plants with the engineering and machinery resources to do the job right. And because Butler is the largest manufacturer of metal buildings, far more standard sizes are available.

Why not investigate the cost advantages of designing on a Butler basic building. Ask your local Butler Builder to drop in and talk it over . . . you'll find his name in the Yellow Pages . . . or write direct to the Butler office nearest you.



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traffic
is
heaviest



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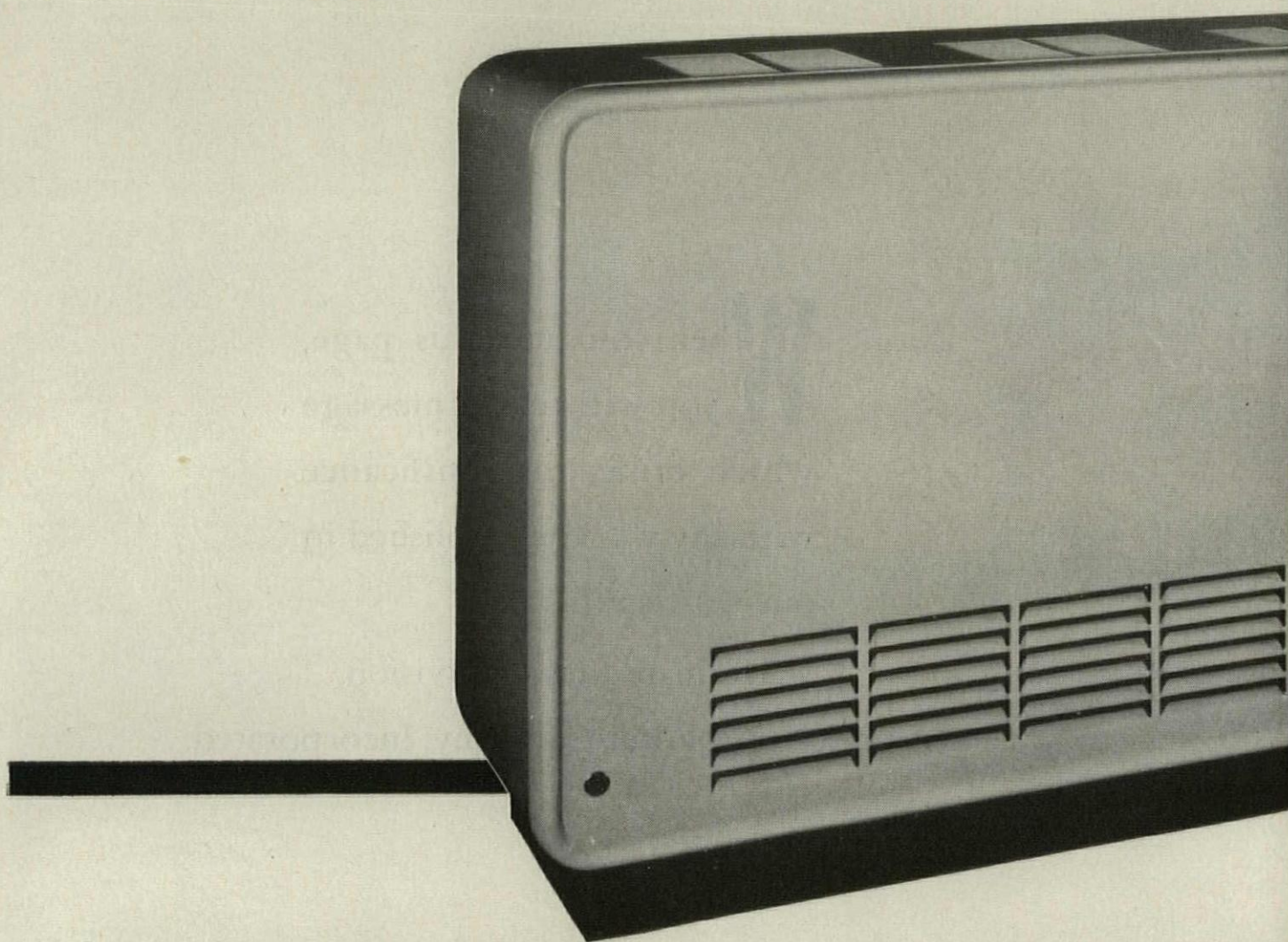
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you will read a message
which ranks in significance
with any we have published in
our 50-year history.

Herman Nelson Division
American Air Filter Company, Incorporated.

Herman Nelson Announces Designed, Built, Priced



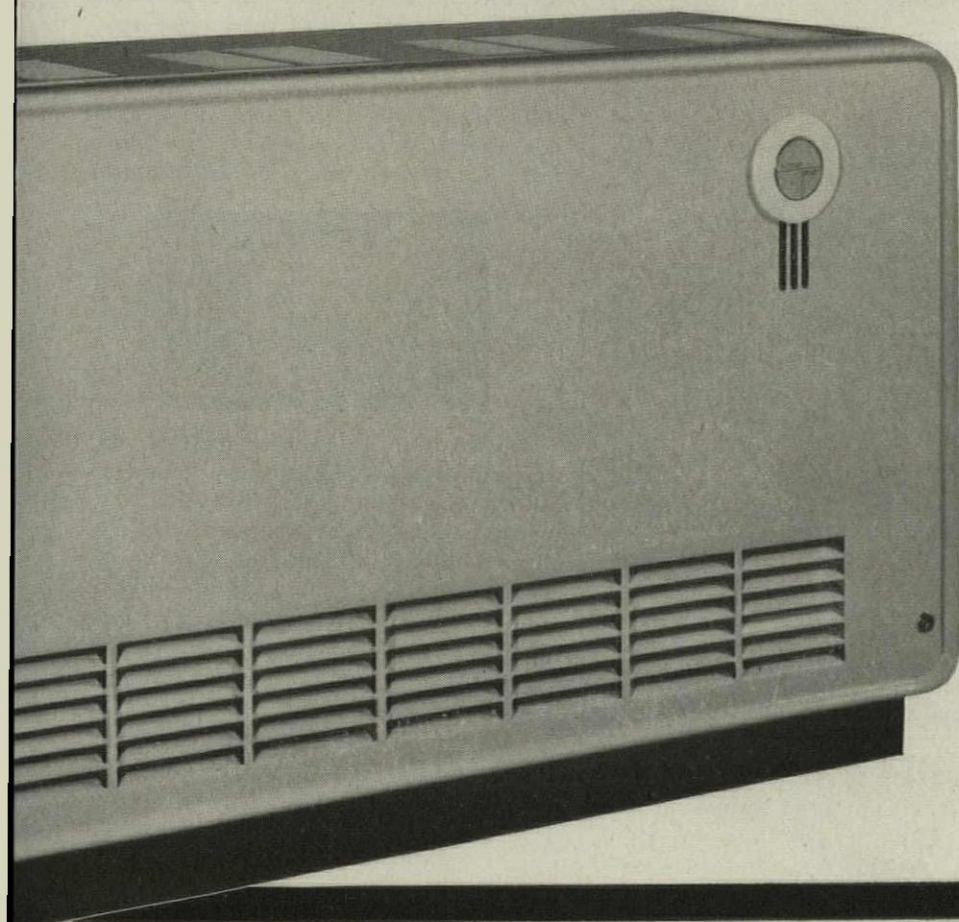
NOW—after years of research, developing and testing—*it's here!* The Herman Nelson HerNel-Cool Air Conditioner, long-sought solution to year round classroom comfort, is the *only unit* especially designed to meet exacting classroom needs.

10 Years in Development. Herman Nelson engineers saw the "handwriting on the chalkboard". As far back as 1945, they were already at work on the problem of developing a unit that would combine complete summertime air conditioning with the long accepted heating-ventilating-natural cooling advan-

tages of the unit ventilator. The ultimate goal was to produce a year round air conditioning unit, sensitive and versatile, automatic and . . . *economical*.

Fully Tested . . . In Classrooms. There were countless design changes, innumerable modifications. Finally, the working models—with factory installed packaged controls, electronic or pneumatic—were ready. These were put to work proving themselves on the job. First installations were made in classrooms throughout the South, where air conditioning needs could put them to the stiffest tests. Here—during the

First AIR CONDITIONING UNIT Specifically for Schools



winter months—they function as natural cooling-heating-ventilating units. When temperature zooms, they switch automatically to mechanical air conditioning. Conditions were rigorous, but the HerNel-Cool Air Conditioner exceeded every requirement!

It's Ready For You . . . NOW. Recognizing the growing need and demand for year-round air conditioning at the college, university and high school level, the Herman Nelson HerNel-Cool Air Conditioner is now ready to meet this requirement. Years of proof-in-use is always a sound buying gauge. And the

HerNel-Cool Air Conditioner *has it*. For your FREE copy of our new 20-page book "HerNel-Cool AIR CONDITIONER for Schools," write Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky

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PRODUCTS

American Air Filter Company, Inc.
System of Classroom Cooling, Heating and Ventilating

...in white
and eight soft
decorator's colors



KILNOISE[®] mineral acoustical tiles

... the only all mineral, acoustical tile which is attractively colored — *throughout*. Available in bright white, too!

Kilnoise mineral acoustical tiles feature outstanding beauty, maximum noise absorption, high light reflectivity and dimensional stability (Totally unaffected in tests of 17 days — 100% humidity — 110° F.).

No heavy fissures . . . no drilled holes . . . Kilnoise ceiling tiles have a soft swirl pattern which enhances any room. Easy to install by all methods, Kilnoise tiles are also pre-primed for positive adhesion.

When you're considering mineral tiles, ask your applicator for a Kilnoise quotation. You'll be pleasantly surprised!

Write for descriptive booklet 39-B.

NEW ENGLAND LIME COMPANY
Adams, Massachusetts



(CRITICISM)

What do you say when a friend is taking you on a tour of his latest building and you don't like it? This ticklish question has tightened many a pleasant afternoon between friends, between builders, between architects, between building owners—and between editors and all these categories.

Here is an answer which many of us must recognize as the truth. Architect Charles R. Colbert, in a recent speech at Texas A & M (where he is the new director of the department of architecture),



discussed it in a jocular aside to a serious address at College Station this spring. Director Colbert prescribed three responses which can be, and usually are, delivered heartily without real hypocrisy:

1. Pronounce very vigorously: "*This is SOME building; yes, indeed, this is SOME building.*" Keep saying it. Or . . .



2. Nod deeply and seriously, and squint into the sun and say: "*Yes, I certainly can see the problems you had. I certainly can.*" Repeat if necessary. Or . . .



3. Breathe deeply and intone: "*This certainly is a CHURCH (insert school, jail, beer garden or other appropriate designation). This sure IS a church (insert school, jail, beer garden or other appropriate designation).* Repeat.



PARENTHESES

Now, is that settled? Do we all understand one another?

* * *

It was our pleasure, several days after hearing Colbert make this speech, to accompany him on a tour of his beautiful schools in New Orleans. And, do you know, those were *schools*; they *sure were* schools. We told him, and he s-m-i-l-e-d.

(INSIDE JOB)

These days more and more buildings are being built *inside* buildings, especially under the expansive roofs of our great city railroad terminals. Here is one of the most recent, a shopping center laid out in the middle of the main concourse of the Chicago Union Station. The storekeeper: Fred Harvey; the wares: candy, gifts, toys, liquor, books, cosmetics, jewelry, greeting cards, men's and women's accessories, and, of course, newspapers and



magazines. Also information.

The traffic path shunts 50,000 people a day past this city slicker's version of a country fair; the Fred Harvey Co. plans to put counterparts in a number of other stations. Designers and builders: the Equipment Manufacturing Co. of Chicago.

(BACKDROP)

From time to time in the past this department may have commented unkindly on architects' treatment of artists and sculptors, which sometimes amounts to subjugation of the allied arts. It does happen frequently; the designer decides he knows exactly what he wants (how big, what colors, what shape) and tries to tune in the artist's creative powers like a TV set. The result is usually about as thin as TV.

But the reverse happens too. The artist sometimes seizes control himself, as Matisse did in building his chapel at Vence. It is time to admit this doesn't always work very well either.

Here is a new branch of the Home Savings and Loan Assn. in Beverly Hills, Calif., which our correspondent informs us was designed by Artist Millard Sheets and executed by a firm of architects and build-

HARRY H. BASKERVILLE JR.



ers, symmetrical except for the traffic light.

(1984 MINUS 28)

The General Precision Laboratory Inc. is a stirring company title for our times (although not quite up to New York's



Chemical Corn Exchange Bank). The company has an interesting new product. In the New London, Wisconsin High School, General Precision has installed what may be the nation's first closed circuit TV study-hall monitor. The students sit without a teacher to supervise them. Instead, the unblinking eye of a TV camera is trained their way from a table-top tripod which somehow has the air of a giant praying mantis.

The other end of the system, the monitor



screen, is located in the school's general office, where secretaries can glance at it periodically to check conditions in the study hall (there is a connecting P.A. system too). The New London superintendent of schools, Paul K. Loofboro, cites two undeniable advantages of this system: first, saving money; second, relieving teachers from nonteaching supervisory chores.

It is true that the pupils look a little moody in the photograph, but perhaps this is the appropriate aspect in all study halls. The manufacturer reports no cut wires, no paper bags placed over the eye of the mantis. According to *General Precision* the kids "Have accepted the TV monitor without animosity. . . . When the system began operating the pupils not only accepted it, but completely ignored the camera's presence."

An enigmatic generation.

(SUMMER)

School, however, is still out. The TV season is slack; the study-hall eye is dim, resting for the fall season, while student and teacher escape both ends of the circuit. And speaking of escape, this is also the season for office picnics.

As a reminder of how pleasant these outings can be, here is a photograph taken last year at the picnic of *Baltimore Contractors, Inc.*, when 2,000 employees of this big firm of big builders spent a fine day at Bay Shore Park swimming, sunning, having tug-of-war contests and proclaiming Miss Barbara Weaver to be *Miss Baltimore Contractor, Inc., 1955.* W. McQ.



FRANCIS DI GENNARO

York's prior planning service helps



Atlanta's Fulton National Bank Building —
Air conditioned with York equipment, this 25-story building is Georgia's tallest. York engineers collaborated with these concerns in the execution of this contract:

Architect and engineer:
Wyatt C. Hedrick Co., Dallas

Contractor:
Henry C. Beck Co., Atlanta

Associate Architect:
Willner & Milkey, Atlanta

Plumbing and air conditioning:
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assure maximum return on air conditioning investment



Economic analysis — York engineers work closely with builders and owners to determine air conditioning requirements, and projected investment cost per sq. ft. of floor area.



Specification — York makes all systems of air conditioning. The York engineer studies your problem objectively, then assists in the selection of the right system for your particular job.



Design — Your architect or consulting engineer can call on the York engineer early for his suggestions in solving space and design problems, thus helping to avoid expensive changes later.

York sales engineers work with you, your architect, your consulting engineer and your builder from the very first planning stage. York calls this *Prior Planning Service*, and it helps you in these three ways:

1. The York Engineer helps analyze your air conditioning requirements.

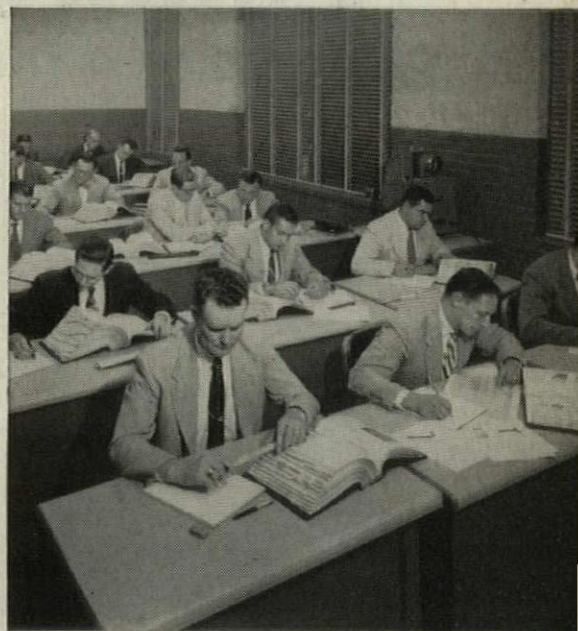
Your average climate conditions, number of occupants and traffic conditions — these are some of the considerations weighed by the York engineer in making his study of your building. With his broad experience and extensive training, he can analyze your problem and make available to you the facts and technical data you need.

2. The York engineer can help you select the proper air conditioning system. York supplies *all* systems of air conditioning and refrigeration, depending upon the requirements of the job. Thus, your York engineer studies your problem *objectively*, recommending the system that is right for your job.

3. The York engineer can assist in space and architectural design. He can be of aid to your architect or consultant, supplying him with the information he needs to make best use of the available space to guarantee maximum effectiveness of whatever system is chosen.

Clearly, York's Prior Planning Service depends upon superior engineering ability. Realizing this, York selects engineering graduates carefully, then trains them in classrooms, in research and development laboratories, in the factory and in the field. You may rely with complete confidence upon the good judgment and recommendations of the York engineer.

Call him in *early* in your planning.



Training — York sales engineers complete an intensive post-graduate course at York. This includes classroom study, plus work in the factory, in the York laboratories and in the field.



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MECHANICAL COOLING SINCE 1885

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Architect: HUGH STUBBINS ASSOCIATES, Cambridge



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second bathroom ...
it's only 5' x 9' ...
it's Stylon ceramic tile
"Glazettes"*

Architect:

Alfred Browning Parker, A.I.A.

Color Stylist-Designer:

Carmen Graham

New Stylon Glazettes in the "Waves" pattern, shown here in this ingeniously designed second bathroom, are a durable, vitreous glazed floor and wall tile with a hard finish, sizes 1" x 1", 1" x 2", 2" x 2", 1/4" thick, moderate cushion edge.

Completely flexible in use, Stylon Glazettes offer a lastingly beautiful and enduring surface for floors, walls, table and counter tops in kitchen, bathroom, utility room, etc. Frost-proof, they may also be used on exteriors.

The various small sizes and 20-color range of Glazettes suggest many unusual patterns. Stylon's Design Service will create special patterns on contract at a nominal charge.

When you specify Stylon, you have chosen a line of ceramic floor and wall tile which meets the most exacting standards in quality control, durability, finish, variety of colors, designs, shapes, textures.

Stylon Ceramic Tile is available through exclusive franchised distributors who display and stock the complete line. Consult the "Yellow Pages" for your nearest Stylon distributor, or write Stylon Corporation, 16 Summer Street, Milford, Mass.

For Stylon catalog, information on design service, mail coupon.

Stylon

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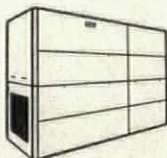
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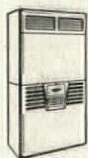
big or small... old or new...
 efficiency of operation prompts
 architects to specify **usAIRco**
 for air conditioning churches



Typical of recent usAIRco installations are these two Oklahoma churches... the internationally known Boston Avenue Methodist and the new Church of Madelene, excellent example of the modern type of building.

usAIRco's packaged central station (Model RK), frequently used in church installations, is a compact unit containing all elements of a built-up system (blower section, compressor section and evaporative condenser). The built-in evaporative condenser continually recirculates water, saving 95% in water consumption costs.

All component parts are factory tested and balanced, delivered ready for immediate installation. Only three simple connections are required: to ducts, water supply and drain, and power supply. Available in 8 sizes, 10 to 60 hp., single or in dual circuit arrangements.



Another economy proved usAIRco unit for cooling churches is the unusually flexible "packaged" air conditioner, consisting of separate conditioner, blower, and plenum sections, allowing rearrangement in the field to fit any installation. Compressor spring mounting insures quiet operation. The usAIRco "packaged" air conditioner comes in 6 sizes, from 2 to 15 hp. 5 year warranty.



Boston Avenue Methodist Church of Tulsa has been built for some years. usAIRco installed the air conditioning equipment well after the structure was built. Consulting engineers: Coston & Frankfurt of Oklahoma City. Architect: Rush Endicott & Rush.

usAIRco air conditioned Tulsa's new Church of the Madelene. Architect: David Murray. Engineer: James Netherton.



For descriptive literature, write Robert W. McLain
UNITED STATES AIR CONDITIONING CORPORATION
 MINNEAPOLIS 14, MINNESOTA Export: 13 E. 40th St., N. Y. 16, N. Y., U. S. A.



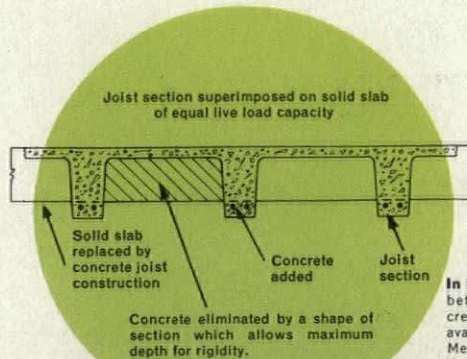
6 words that
spell comfort
in a hospital...



Less Noise
Proper Daylighting
Good Ventilation

...and Ceco
building products
make all this
come true

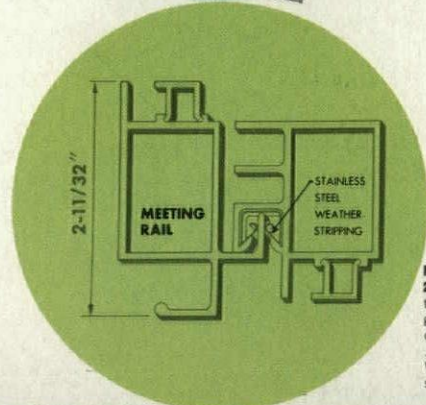
† Patient comfort always is a consideration in the building of a hospital. But when architect Leo A. Daly designed the Bishop Clarkson Memorial Hospital, Omaha, Nebraska, special emphasis was given that factor. Hal G. Perrin, administrator, and Robert H. Storz, chairman of the building committee, consulted with architect Daly. . . . patients were queried . . . all agreed that no daylighting and ventilation should come in critical study. The soundproof characteristics of Ceco-Meyer Concrete Joist Construction and the daylighting and ventilating advantages of Ceco Windows met the requirements. Architect Daly made this further comment on the building method: "The construction is light in weight, but affords exceptional stiffness because of additional depth provided by the monolithic floor and joist section."



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Ceco-Sterling Series 200-B Window — Ceco-Sterling Double-Hung Windows assure minimum air infiltration. Sash float on stainless steel weatherstripping, providing tight but easy-operating, silent windows.



Meeting Rail Section, Series 200-B Window — Heavy extruded box sections assure rugged performance... double-contact stainless steel weatherstripping provides tightness. Weatherstrip at jambs gives a spring cushion sliding contact.

Clarkson Memorial Hospital, selected as the "Hospital of the Year." Daily Co., Architects and Engineers: Peter Kiewit Sons' Co., Contractors

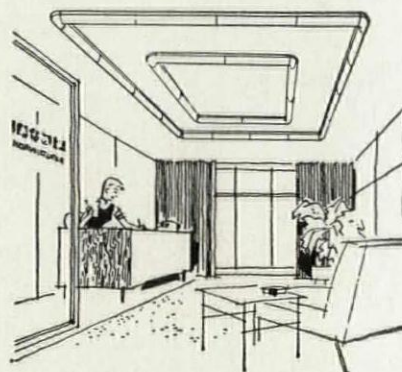
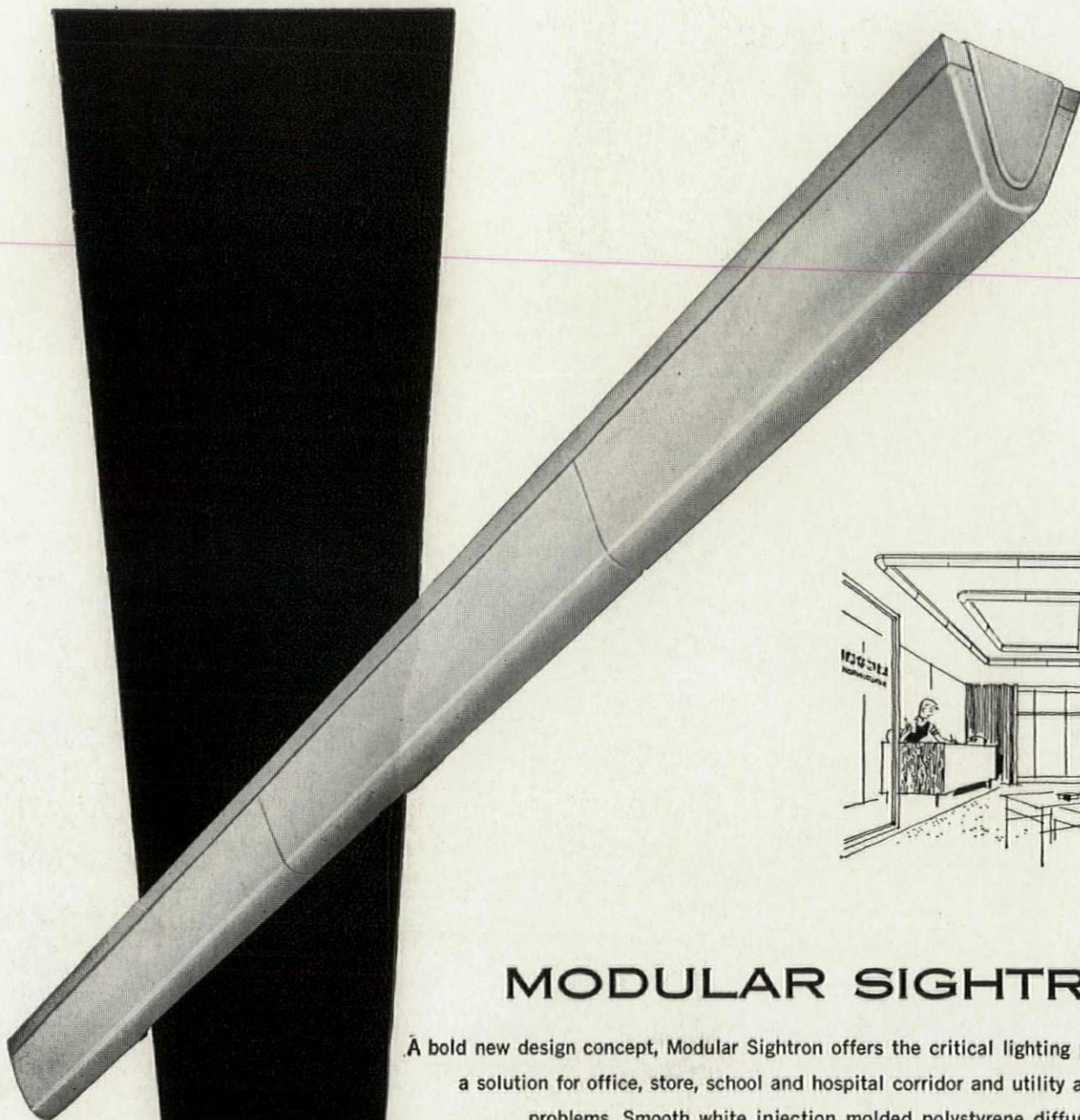
Steel Double-Hung Aluminum Windows got all for better daylighting because glass areas bigger... mullions sleeve together. The windows are tight, a factor in efficient air-conditioning they operate silently and are easy to maintain. helped the contractor maintain a fast pace of construction by coordinated deliveries of reinforced-steel, steelforms and windows. For your next project, consult Ceco Engineers. You can be sure counsel and service to aid you in adapting the building product to your particular problem.



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Construction products Ceco Engineering makes the big difference



Concrete visors for shading and window washing are dramatized in this view. Shaded windows are Ceco-Sterling Double-Hung Aluminum Windows and Picture Windows.



MODULAR SIGHTRON

A bold new design concept, Modular Sightron offers the critical lighting professional a solution for office, store, school and hospital corridor and utility area lighting problems. Smooth white injection molded polystyrene diffusers provide efficient, glarefree illumination. These 2 foot modules fit tightly together in 2, 4 or 8 foot steel housings which may be used individually or in rows for flowing lines of continuous light. They snap out easily with fingertip pressure for easy re-lamping and trouble-free maintenance.

Smooth, uninterrupted right angle turns for pleasing geometric patterns, corridor and perimeter lighting are obtained by using the new Modular Sightron corner bracket. Also available are accessory reflectors for additional downlight when required, and matching wall brackets.

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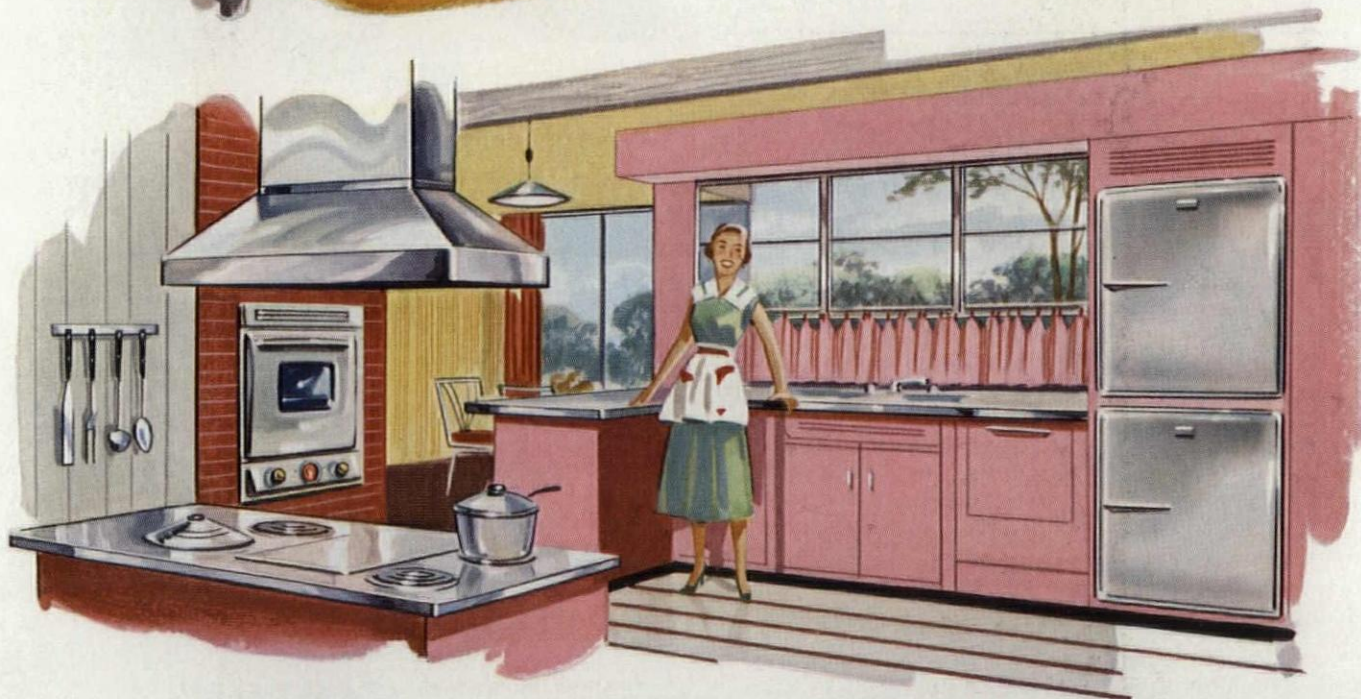
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THE ARCHITECT designs Stainless Steel into windows, kitchens, work surfaces, ovens and other important places because he knows there is nothing like Stainless for clean, lasting beauty.



THE BUILDER has had long experience with Stainless Steel. It's easy to install, does not chip or peel, and its beautiful finish presents no problem on matching or replacement.



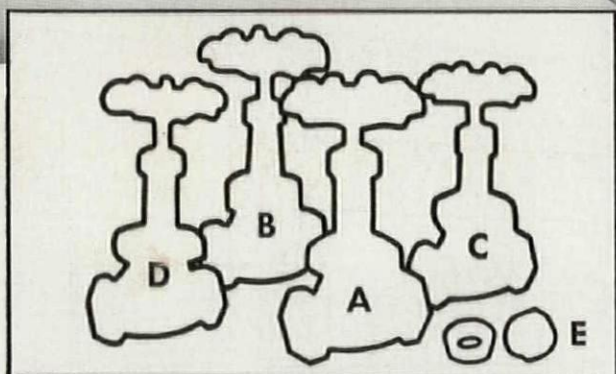
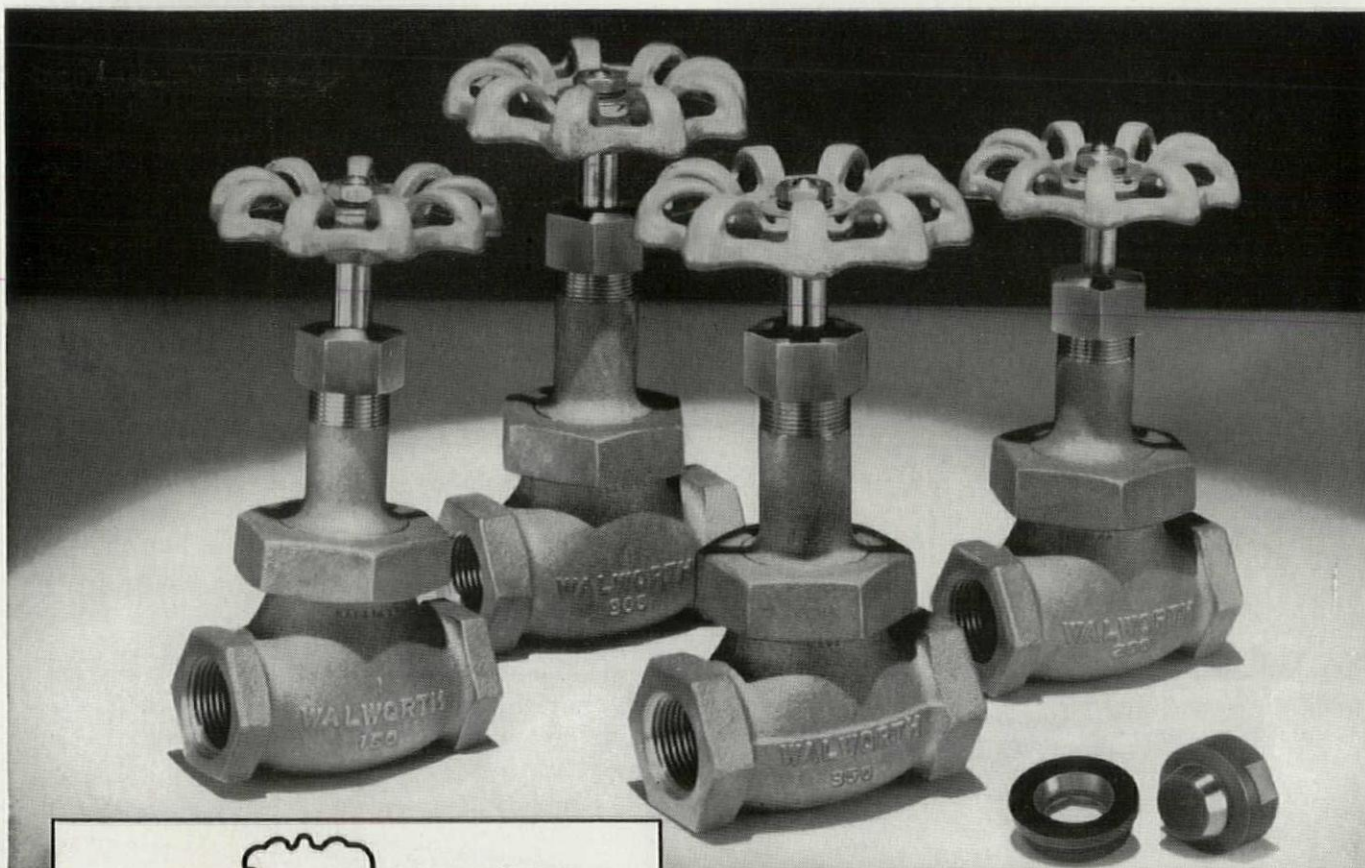
the owner likes living with Stainless Steel. It's always gleaming and beautiful, cleans with a wipe, and lasts forever. And, to complement her kitchen she loves to own those shiny pots, pans, tableware, and appliances, all made of Stainless Steel.

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- **Patented Handwheels** are air-cooled and designed with a "finger-fit grip." Makes turning easy even when wearing greasy gloves.
- **Identification Plates** secured by lock-washer under stem nut, show Figure Number of valves and make re-ordering sure and easy.

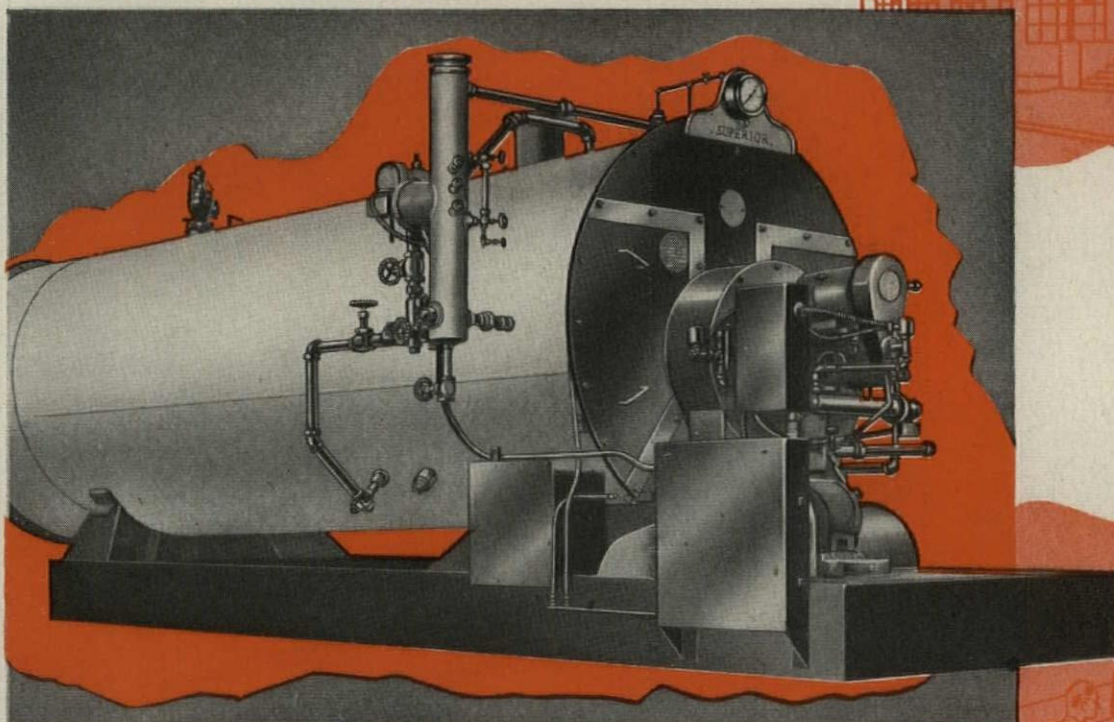
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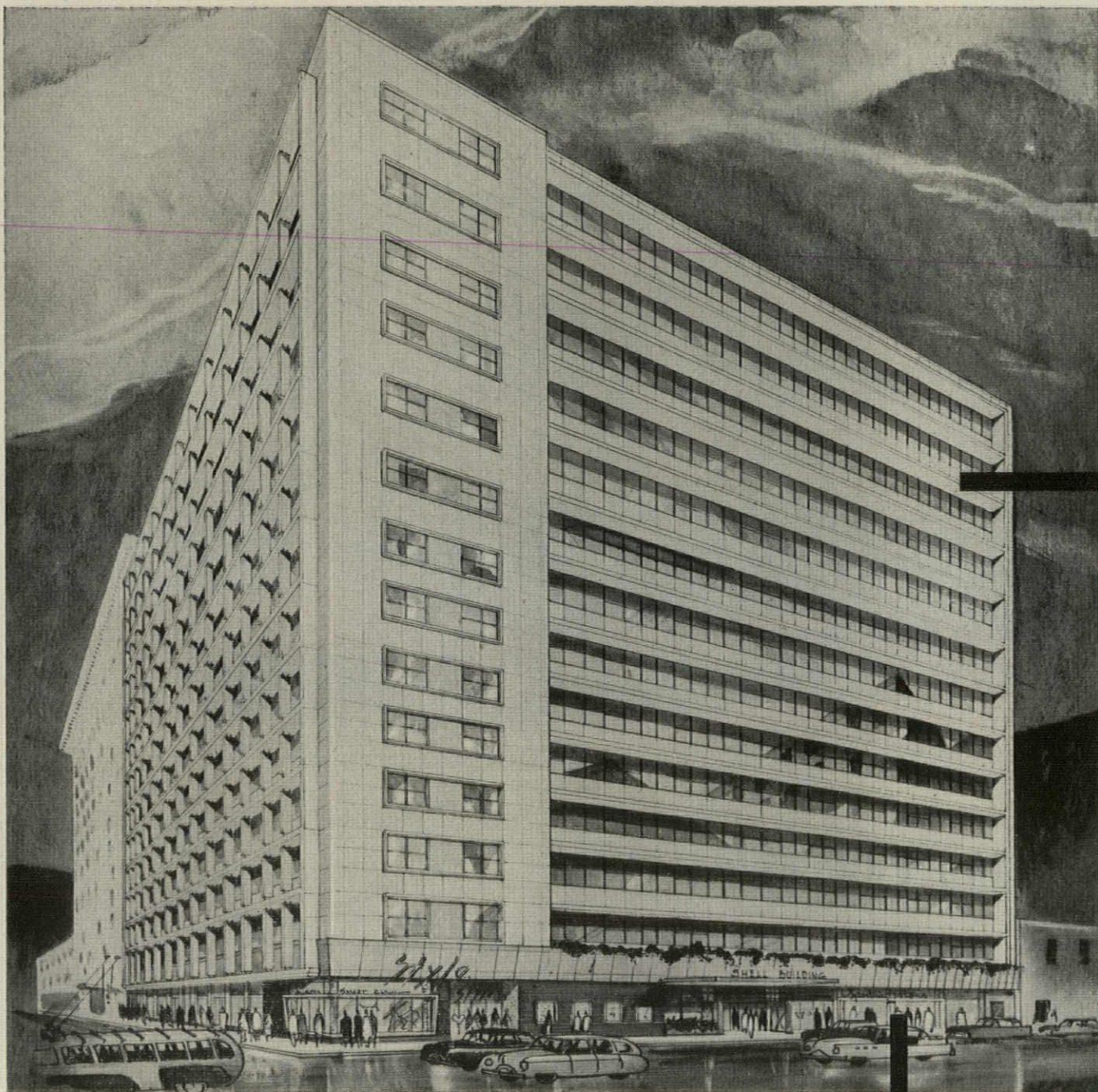
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With their eyes on the future, architects August Perez & Associates planned the Shell Building . . . a brilliant new addition to New Orleans' skyline . . . a building completely *ahead* by design.

Every one of its spacious, air conditioned offices is *custom-tailored* to the individual taste and needs of each tenant. And, setting a new trend in *convenience*, eight floors of one wing are hotel rooms . . . with a huge auditorium for business and social functions. Attractive shops, a bank and restaurant are conveniently located on the ground floor.

Built of limestone and glass with a granite base, the Shell Building represents a big step ahead in structural design . . . because its multi-story frame is the first ever constructed of all-lightweight concrete.

And . . . through the architects' foresight . . . *Westinghouse Water Coolers* daily refresh all those fortunate enough to work in or visit this great new building.

AHEAD...by design

Shell Building, New Orleans

Designed by August Perez & Associates

Built by Gurvais Favrot Company

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Were specified by architects August Perez & Associates because by design they, too, are . . .

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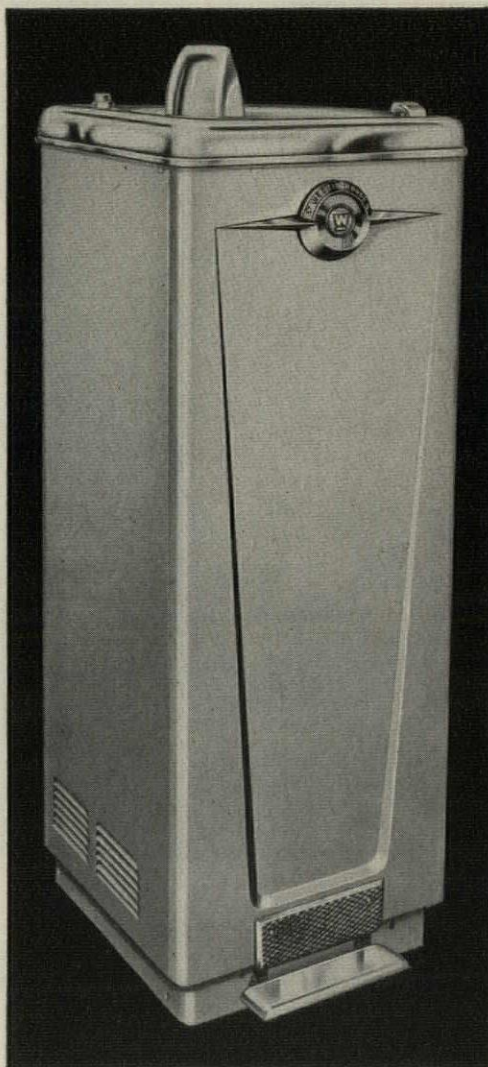
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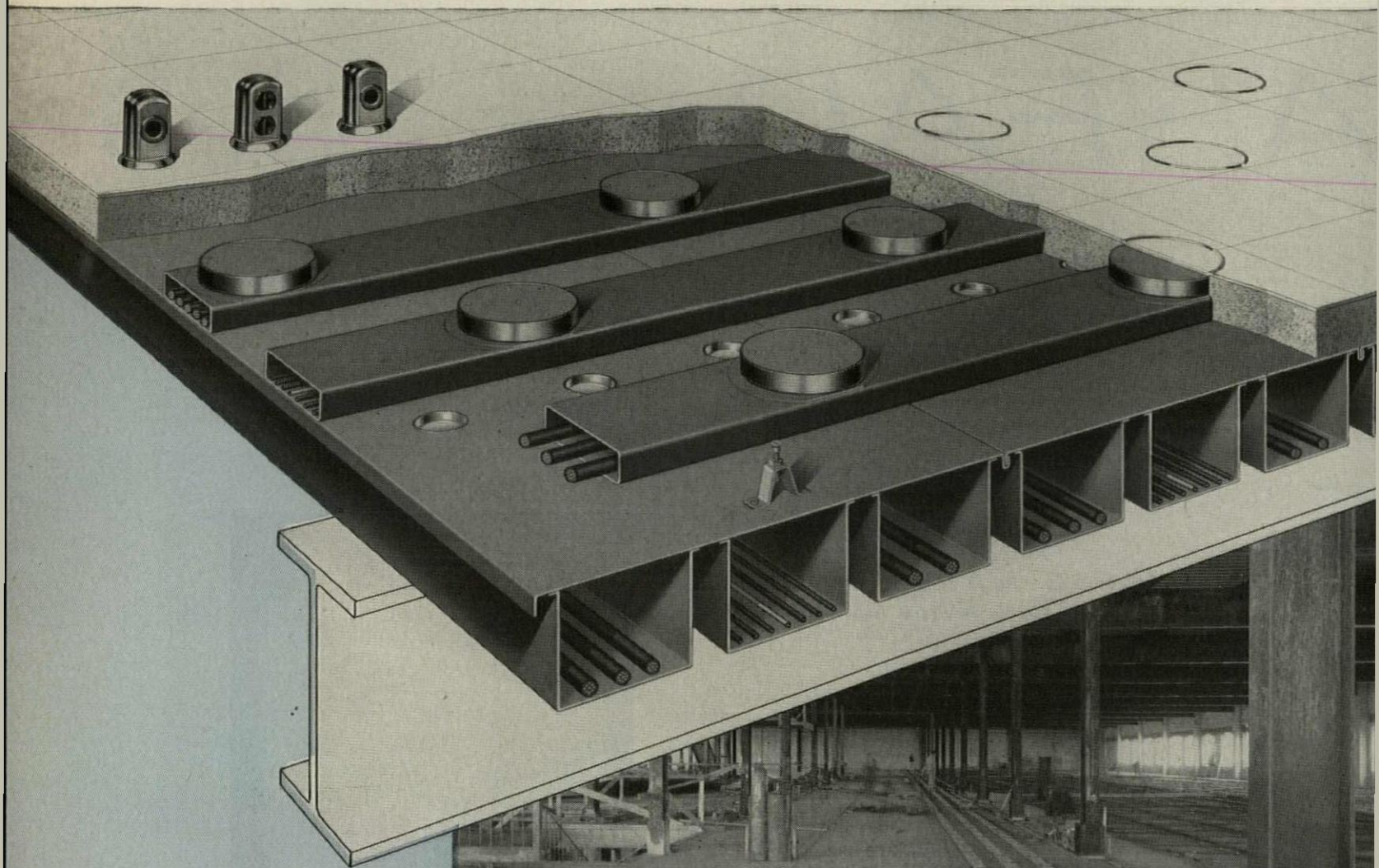
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WATCH WESTINGHOUSE WHERE **BIG** THINGS ARE HAPPENING FOR YOU!

M-FLOORS



Above is a cross section of a Mahon M-Floor constructed with M-Floor Section M-3 and energized with a Three Header Duct Electrical Distribution System. The installation at the right is Mahon M-Floor Section M-2 in the Body Engineering and Research Building, Ford Research and Engineering Center, Dearborn, Michigan. Voorheis, Walker, Smith & Smith, Architects. Bryant & Detwiler Company, General Contractors.



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Three exterior patterns with a "U" Factor equivalent to or better than a conventional 16" Masonry Wall. Constructed up to sixty feet in height without a horizontal joint.



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Standard Double Rib, Wide-Flange Double Rib, and Long Span M-Decks, which can be furnished perforated and fitted to provide an efficient acoustical ceiling.

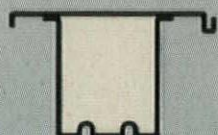


ROLLING STEEL DOORS

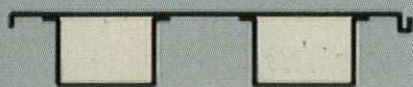
Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles, Underwriters' Labeled Automatic Rolling Steel Fire Doors and Fire Shutters.

• • Insure Against Electrical Obsolescence • • • Provide Convenience of Over-all Electrical Availability!

MAHON M-FLOOR SECTIONS



**M-FLOOR SECTION
 M1**

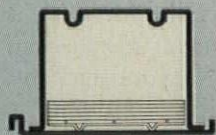


**M-FLOOR SECTION
 M2**



**M-FLOOR SECTION
 M3**

COMBINATION DECK/CEILING UNIT



**MAHON
 M-DECK SECTION
 M1SR**

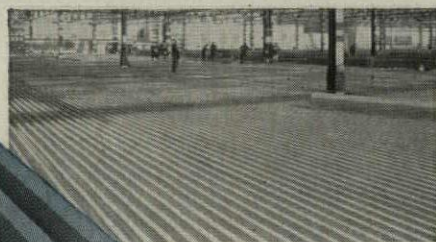
*And, to Build with M-Floors COSTS LESS than
 any other type of PERMANENT construction*

When you build with M-Floors, you build in unlimited circuit capacity for telephone, intercom, signal, and the various types of electrical service. It's there for the life of the building . . . all you have to do is drill a neat hole into a Cel-Beam Raceway and install a floor service fitting where you want it. Rearrangement of office space or moving of partitions poses no problem in buildings with M-Floor construction . . . floor service fittings can be removed and relocated or additional fittings installed quickly, easily and without fuss or muss.

This alone, should make M-Floors your choice for all new construction. But, M-Floors have many other advantages: Your building will cost less . . . the Strength/Weight ratio of M-Floor construction will save up to 30% in the structural frame and foundation of some multiple story buildings. Your building will be built in less time, too . . . M-Floors go in as fast as the steel frame goes up, and, it is dry construction which provides an ideal storage and working platform for other trades—allows them to get on the job at an earlier date.

To derive full benefit from M-Floor construction, costwise, your building must be designed, structurally, for this type of floor. Cellular steel floor construction and the particular Cel-Beam Section to be employed, should, therefore, be one of your first planning decisions. And, if you compare design and engineering features, you will find that M-Floors will meet your over-all requirements better.

See Sweet's Files for information, or write for Catalog M-57i



CONCRETE FLOOR FORMS

Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.

THE R. C. MAHON COMPANY • Detroit 34, Michigan
 SALES-ENGINEERING OFFICES in DETROIT, NEW YORK and CHICAGO • REPRESENTATIVES in PRINCIPAL CITIES

MAHON

Electronic control of commercial air conditioning is only seven years old, yet already it has set new standards in operating economy and convenience. Why? The answer lies in the basic advantages of the electronic system. They're presented here as another in a series of reports from the pioneer manufacturer of electronic controls.

The Electronic Revolution in commercial

Honeywell electronic Supervisory Data-Center permits complete management of air conditioning systems from a single point. This is centralized control — now practical and economical for installations of any size.

AS MODERN standards of indoor comfort become more refined, they demand year-round air conditioning plants of increasing complexity.

This is costly equipment. It must pay off in terms of efficient, economical operation. Hence the mounting interest in controls — most vital accessory the air conditioning system can have.

When Honeywell developed the electronic thermostat in 1949, it was possible at last to have a control installation that met every demand of architects, engineers and building managers.

For with electronics, *central control* comes into its own as a tool for getting the most out of the air conditioning system. The Supervisory Data-Center, an electronic panel, gives one man supervision over the entire system from one control point. The result is an entirely new kind of convenience and efficiency that means savings—*big savings*—in several important ways.

Take the case of the modern skyscraper, such

Honeywell Electronics

Report Number Two

as the huge new Mid-America Home office of the Prudential Insurance Company in Chicago. With a conventional control installation, this building's 203 thermostats could require the services of full-time maintenance men for operational checks alone.

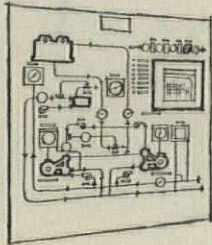
Not so with the Prudential's electronic installation. From a central location, one man can make a one-degree adjustment in the comfort level of a space 20 floors away, if needed. His control is based on complete information supplied by the Supervisory Data-Center, where it's displayed visually for analysis and interpretation.

Another example is in the new quarters of *The Houston (Texas) Post*. Here, a Honeywell electronic panel automatically oversees the entire 400-ton cooling plant's operation. Visual display of performance data permits convenient, instantaneous review of component function, indicating any adjustment needed.

Instrumentation's Role

Honeywell instrumentation, built into the central panel, is the ultimate refinement that stamps the electronic control installation with the mark of superiority.

For by combining Honeywell-made instruments with Honeywell electronics, engineers are able to achieve certain advantages that assure control efficiency never before realized.



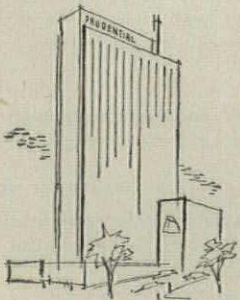
Typical Honeywell Electronic Panel

air conditioning

Precision indicators *at the panel*—the eyes of the central panel—show temperatures throughout the system. Through electronics, control points can then be adjusted remotely with unusual accuracy. Only electronics makes economically feasible such a convenient combination of data visualization *and* control point adjustment at a spot remote from the controlled equipment. It's this combination that affords the precise control needed to avoid costly overheating or overcooling.

Instruments also permanently record performance of heating and cooling components, providing precise data for efficiency studies.

Other Important Benefits



Mid-America Home Office,
The Prudential Insurance
Company, Chicago

Valuable as it is, central control is only one of the advantages that's proving the benefits of the electronic installation. Another is automatic sequencing, which only electronics makes fully practical for any commercial system.

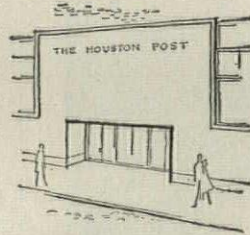
With electronics, automatic sequencing is *convenient*: the *same* thermostat may sequence from heating to full ventilating to mechanical cooling. It's *effective*: it utilizes the thermostat's full operating range. It's *economical*: automatic use of outside air to carry part of the cooling load cuts refrigeration costs.

With electronics, use of *averaging* thermostats—

although no substitute for adequate zoning—is no longer costly and complicated. In controlling an open area as a single zone, for example, it's simple to locate inexpensive electronic thermostats so that load changes peculiar to the enclosure's equipment or occupancy are sensed and averaged out, maintaining a constant comfort level.

Compensation Greatly Improved

Faster, more accurate, more stable compensation is achieved through electronics. Especially valuable for short-occupancy spaces such as retail stores, this feature also prevents discomfort due to variations of wind and sun effects or sudden changes in outdoor temperature. Automatic winter-summer reset, utilizing an outdoor thermostat, cures temperature drift in winter, air-cooling shock in summer. This means *consistent* comfort in any building, in any weather.



The Houston Post,
Houston, Texas

No specialist is needed for installing and servicing electronic controls. Wiring is low voltage, with standard color coding easily understood by any heating and air conditioning technician. Today's installations will be up-to-date for many years to come. Maintenance and equipment aging problems are minimized, because the electronic thermostat contains no moving parts.

Key Word: Flexibility

These advantages are summed up in one word: *flexibility*. It means that all or any combination of the electronic installation's features are readily adaptable to the solution of any control problem. The results are better, more efficient, more convenient operation of the air conditioning system—and important dollar savings.

In fact, it's *flexibility*—in the entire field of temperature control—that helps establish clearly Honeywell's leadership. For only Honeywell makes *all three types* of control systems: pneumatic, electric, electronic, each with distinctive advantages for certain applications. Thus only Honeywell is able, with complete objectivity, to help you select the one system shaped perfectly to the needs of the building and its occupants.

• • •

Ask for our new electronic control booklet which tells more fully how to apply electronics to your control problems. Write Honeywell, Dept. MB-7-04, Minneapolis 8, Minn.

Minneapolis-Honeywell Regulator Company

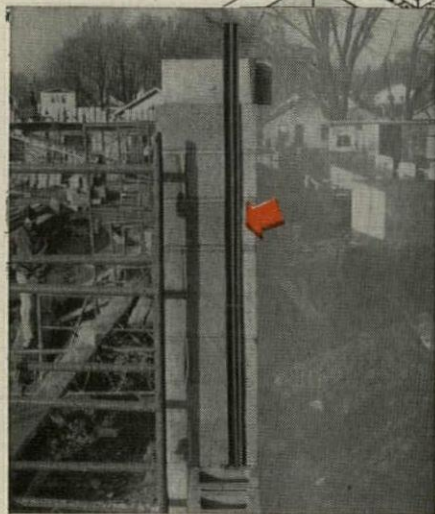
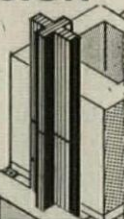
For Better Control Joints

BLOK-JOINT

Pat. Pending

RUBBER EXTRUSION

- No Cutting or Sawing.
- No Need for Special Blocks.
- Use with Any Standard Metal Sash Block.
- No Building Paper or Mortar Filling Needed.



BLOK-JOINT'S "cross-shaped" rubber extrusion design simplifies construction of masonry wall control joints. Use BLOK-JOINT with any standard metal sash block!

"100 Year Life" rubber assures maximum effectiveness for the lifetime of the building. BLOK-JOINT forms a secure interlock, actually adds stability to the wall.

Use BLOK-JOINT for all types of masonry wall construction!—Block walls, brick veneer over blocks, cavity walls and many other types!

Simplicity, Versatility and maximum effectiveness are yours with Carter-Waters BLOK-JOINT.

NOW! See For Yourself how BLOK-JOINT fits masonry wall construction!

Write Today for FREE sample!
Use this coupon.



Carter-Waters Corporation
2440 Pennway • Kansas City 8, Mo.
Please send me a FREE sample and specifications on the new Carter-Waters BLOK-JOINT.

Name.....

Address.....

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

CONSTRUCTION IN MATERIALS

CARTER-WATERS

KANSAS CITY 8 MISSOURI
2440 Pennway Phone GRand 1-2570

LETTERS

ST. LOUIS' AIR TERMINAL

Forum:

I have received the May issue of FORUM which features St. Louis' new Airport Terminal building.

Words cannot express my deep appreciation for the treatment which your fine magazine has given this new facility. As the leading architectural magazine in the country, your publication has done much to publicize this new terminal building.

We have many reasons here in St. Louis to be grateful to FORUM for the tremendous amount of assistance it has given the community. The round table meeting which FORUM sponsored (How to Rebuild Our Cities Downtown; AF, June '55) came at a most opportune time and was of great assistance to us in expediting our redevelopment plans.

The inspiration and encouragement given by FORUM during this period of progress have been of great value in the rebuilding of St. Louis.

RAYMOND R. TUCKER, mayor
St. Louis, Mo.

FT. WORTH PLAN

Forum:

As chairman of the Baton Rouge City-Parish Planning Commission I wish there were some way every citizen here could see your article on Fort Worth in the May issue of FORUM. Our city is growing faster than Fort Worth and our downtown problem has become a real headache.

Can you furnish me with reprints?

W. J. EVANS
Bodman & Murrell & Smith, architects
Baton Rouge, La.

• Reprints are available at 15¢ each.—ED.

GAUDI

Forum:

I notice that your article on Gaudi (AF, March '56) contains a marginal note to the effect that it is based on a forthcoming book. I do hope this good news will finally prove true. There is a great need for a book in English on this architect. As a librarian, I am very much aware of the student interest in him.

ARTHUR B. WAUGH, head
Architecture Library
University of California
Berkeley, Calif.

PUBLIC ROOMS

Forum:

Your article on "Open Kitchens" (AF, March '56) is especially well done, containing a wealth of interesting material for anybody—undertaking a remodeling or rebuilding program. We would like 100 copies since we frequently get requests for just that type of information.

RALPH G. PETERSON
Director of Public Relations
National Restaurant Assn.
Chicago, Ill.

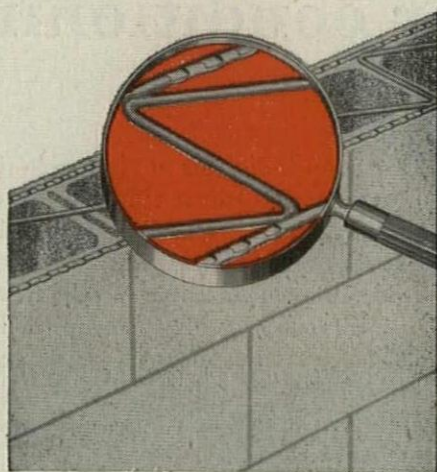
continued on p. 66

For Better Reinforcing With "Deep-Grip" Swedging

BLOK-MESH

MASONRY WALL REINFORCING

- Exclusive Deforming Provides Large, Well Defined "Squared Edges"
- Provides "Sure Lock" Between Reinforcing and Mortar
- Requires No More Area in the Joint Than Superficial Deforming
- As Easy to Handle as Other Types



You can see at a glance the extra "grip-ability" of Carter-Waters BLOK-MESH. The horizontal and vertical surfaces provide a sure lock even under lateral pressure and shrinkage.

BLOK-MESH Minimizes Cracking above lintels, below sills, at corners.

BLOK-MESH Is Best to tie brick to back-up blocks, for cavity wall construction, double walls, ordinary block wall construction.

Remember, **BLOK-MESH** by Carter-Waters is the only masonry wall reinforcing with the "deep-grip", positive anchor swedging.

SEE The Big Difference In Sweet's File or...

Write Today for your FREE illustrated brochure on the New Carter-Waters Blok-Mesh! Use This Coupon.

Carter-Waters Corporation
2440 Pennway • Kansas City 8, Mo.
Please send me FREE brochure and specifications on new Carter-Waters BLOK-MESH.

Name.....

Address.....

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

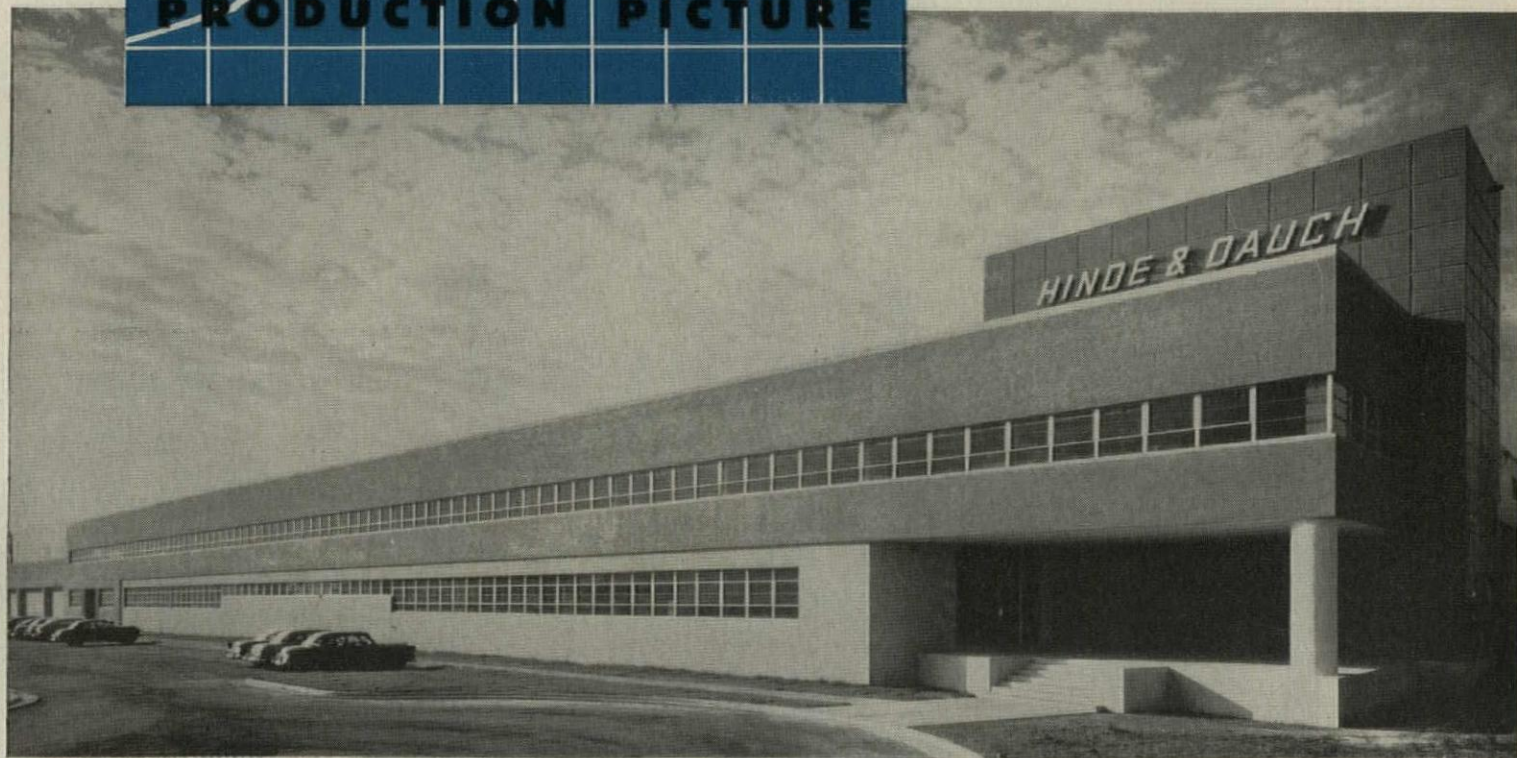
CONSTRUCTION IN MATERIALS

CARTER-WATERS

KANSAS CITY 8 MISSOURI
2440 Pennway Phone GRand 1-2570

COOLITE GLASS BRIGHTENS PRODUCTION PICTURE

Architect: Gibbs & Hill, Inc.
General Contractor: Robert H. Pinnix Construction Co.
Glazing Contractor: Binswanger & Co.

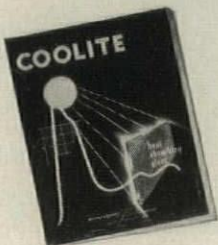


Corrugated Box Plant Achieves Better Daylighting With Heat Absorbing, Glare Reducing Glass

Production efficiency and quality controls benefit from the high levels of natural illumination possible with Coolite. For Coolite, the heat absorbing and glare reducing glass, filters out unwanted elements in "raw sunlight." For example, this modern Hinde & Dauch corrugated box plant, Gastonia, North Carolina, takes full advantage of southern sunshine without distracting, uncomfortable glare and heat. 12000 sq. ft. Coolite, glare reduced both sides for maximum diffusion, is installed in two elevations . . . throws eye-easy daylighting deep into the structure. And since Coolite absorbs up to 50% of unwanted heat rays, the interior remains comfortable while flooded with low cost, natural illumination.

Employees feel better, work better, under Coolite-conditioned daylighting. In your new building or remodeling projects, let light give a lift to production. Specify Coolite by Mississippi . . . the heat absorbing and glare reducing glass that brightens any production picture.

Translucent, light diffusing glass by Mississippi for better daylighting, is available, wired and unwired, in a wide variety of patterns and surface finishes, all scientifically designed to distribute light to best advantage. Available at most leading distributors of quality glass.



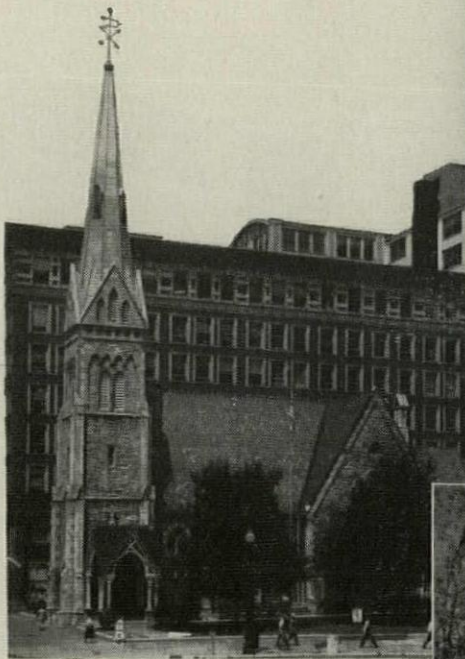
Write today for free
Coolite catalog.
Address Dept. 6.



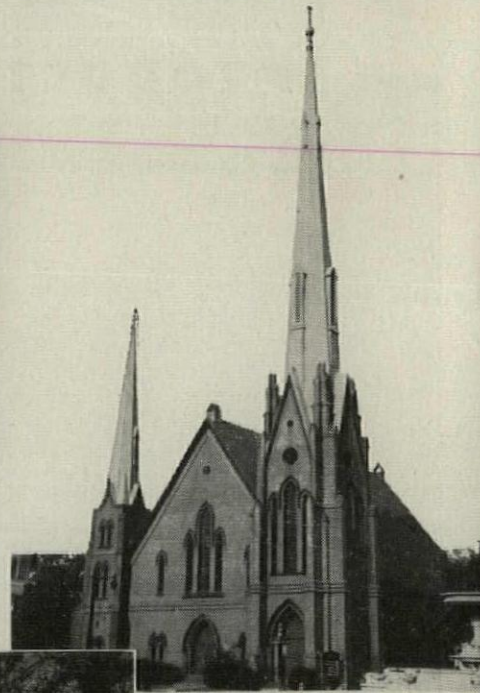
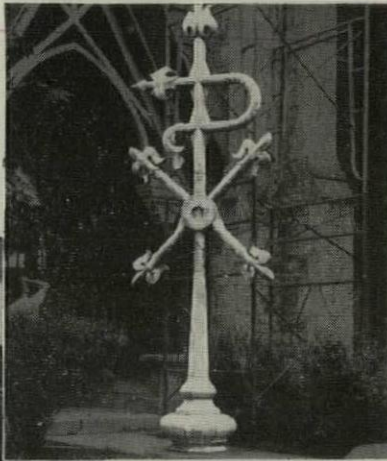
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GLASS COMPANY
88 Angelica St. • St. Louis 7, Mo.
NEW YORK • CHICAGO • FULLERTON, CALIFORNIA

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

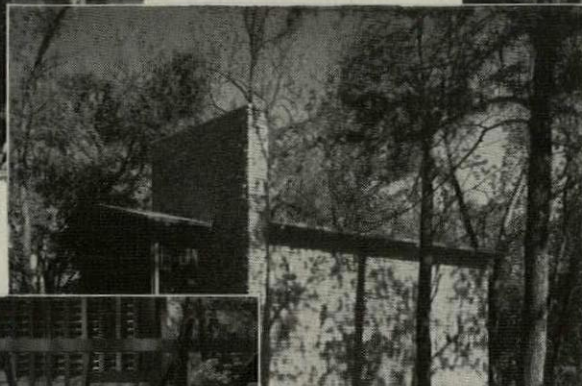
Since its use on the



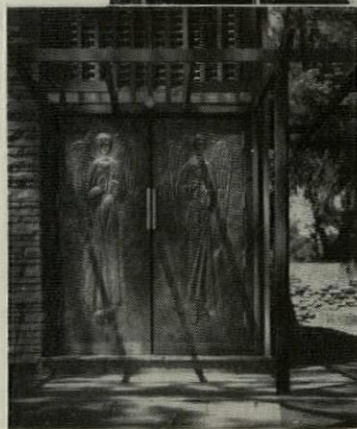
(above) CHRIST EPISCOPAL CHURCH, Indianapolis, Ind. 1,000 lbs. of Revere Copper were used to form the spire and finial of which a close-up view can be seen above. Finial is a fine example of how Revere Copper can be worked into any shape or form. Re-roofing of spire and fabricating of finial were done by RALPH R. REEDER & SONS, with HUBBELL METALS supplying the Revere Copper.



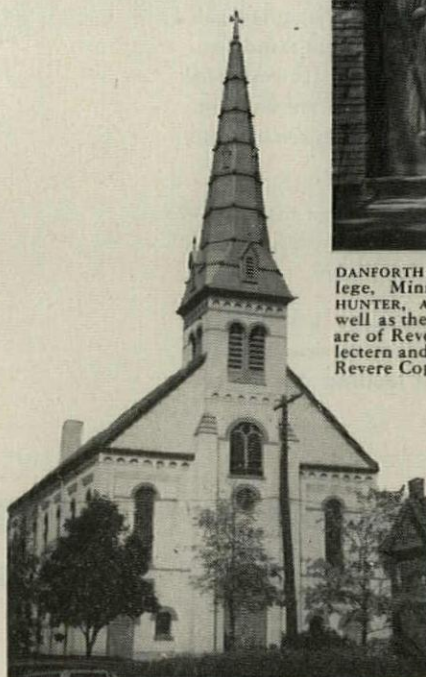
FIRST BAPTIST CHURCH, Wilmington, N.C. Architect: CHARLES C. HARTMAN. Wilmington and Greensboro, N.C. Sheet Metal Contractor: E. S. PIVE & SON. 12,000 lbs. of non-rusting Revere 16, 20 and 24 oz. Cold Rolled Copper replaced a heavy material with which the two steeples were originally covered and which was deteriorating. The larger of the two steeples is 212' high with a 4' base tapering to 1' at the top. Revere Copper supplied by LYON CONKLIN and POTTS FARRINGTON.



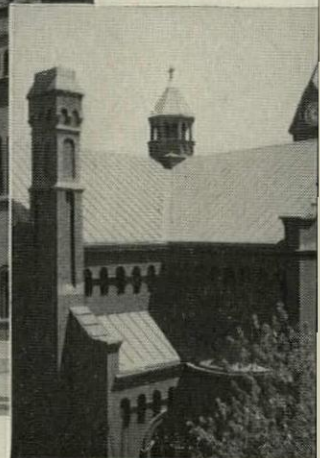
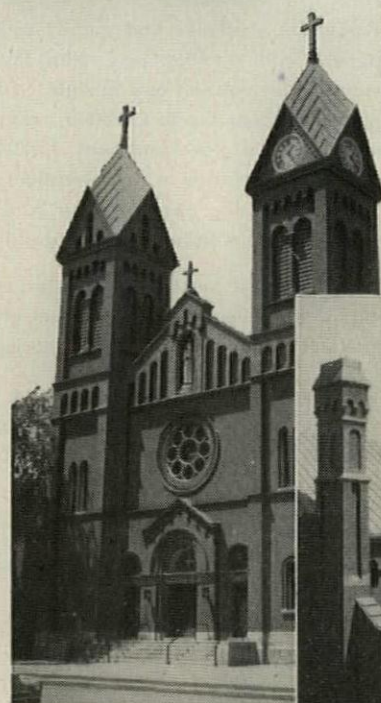
ST. ANTHONY CHURCH, Detroit, Mich., where 30,000 lbs. of enduring Revere Sheet Copper were used to replace a roof that was costing considerable to keep in repair. DAVE POMAVILLE & SON, ROOFING & SHEET METAL COMPANY did the job. Revere Copper was supplied by SEMLER WHOLESALE SUPPLY CO.



DANFORTH CHAPEL of Colorado A&M College, Minneapolis. Architect: JAMES M. HUNTER, A.I.A. Flashing and louvers as well as the repousse doors (see close-up) are of Revere Copper. Inside, candelabra, lectern and cross also are fashioned from Revere Copper.



ST. JOSAPHAT'S UKRAINIAN CHURCH, Rochester, N.Y. Architect: E. M. LORSCHMEIDER. Sheet Metal Contractor: SPRING SHEET METAL & ROOFING CO. Revere Distributor: FOLLANSBEE METALS CORPORATION OF NEW YORK. 2,500 lbs. of Revere 20 oz. Leadex Copper replaced material on entire steeple that was cracking and endangering pedestrians.



Old North Church in 1806

REVERE COPPER

Has protected our houses of worship the Country over

According to a record book recently discovered in an old chest stored in a stable, Paul Revere once sold 681½ pounds of sheet copper at .48 per lb., and assorted copper wrought nails at .54 per lb. for use on the steeple of the Old North Church, Boston. The dates were July 19th and September 18th, 1806, five years after Paul Revere rolled the first copper sheet in America at his mill in Canton, Mass.

In 1954, the modern mills of Revere rolled and donated approximately 8,000 lbs. of copper for sheathing the new steeple of the Old North Church replacing the one toppled by Hurricane Carol (see photos this page).

So, for a century and a half Revere Sheet Copper has been used on churches of every denomination, for crosses, roofs, gutters, leaders, flashing, doors, spires, fleches and other ornamentations. And, on the inside, Revere Copper Water Tube is being used extensively in radiant panel heating systems and water lines. Not alone in churches, but in Government Buildings, State Capitols, hospitals, schools, municipal and office buildings, from one end of our land to the other, Revere Copper has served faithfully.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y.

Sales Offices in Principal Cities, Distributors Everywhere



When final assembly of the steeple was made at the site, the largest crane in Boston was called on to hoist steeple into place. All trim, flashing, roofing and deck are Revere Leadtex Copper.



Architect: CHARLES R. STRICKLAND, A.I.A., Boston. Main spire on Old North Church, 50' in height, 7' at the base and tapering to 1' at the peak, originally was made from wooden shingles. Here you see new spire with Revere Lead-Coated Copper being formed to simulate original shingles. Each shingle is attached to the plywood sides which in turn are fastened to a steel frame running the length of the steeple. This frame is fastened to the foundation. Sheet Metal Contractor: PAUL E. DUTELLE. Basic copper work was done in shop, using approximately 8,000 lbs. of 16 oz. Revere Lead-Coated Copper (Leadtex).



THE FIBERGLAS-REINFORCED BUILT-UP ROOF

FIRST MAJOR BUILT-UP ROOFING

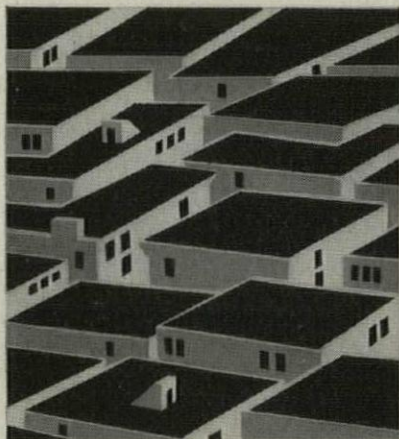


THE DILEMMA

For 100 years, roof decks have been built up by applying successive layers of asphalt or coal-tar pitch. The application problem has always been: *How to use enough bitumen to protect the deck, and still keep the built-up roofing from cracking or alligatoring?* To add to architects' building worries, there's the possibility of voids and holidays between the roofing layers.

THE RIGHT REINFORCEMENT

Owens-Corning Fiberglas has found the answer to this dilemma in the revolutionary *but proved-in-use* Fiberglas*-reinforced built-up roof. Ageless fibers of glass in Fiberglas Perma-Ply* roofing reinforcement weld the hot bitumen into one continuous monolithic sheath. It's the same principle of reinforcement that puts strength into Fiberglas-reinforced fishing rods and bulletproof vests!



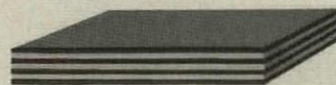
THE PROOF

Nine Years of field testing, over 6 million square feet of roofing, show that Fiberglas roofing reinforcement will not rot or decay . . . *will outlast the bitumen itself!* And look at these *extra* advantages:

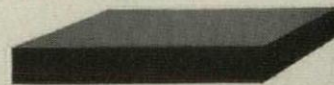
- Use 40% more bitumen without risk of cracking!
- Inorganic glass felts will not absorb or hold moisture . . . can't wick out essential oils!
- Three plies do the work of 4 plies of conventional felts—roofing-in goes faster!
- Owens-Corning will bond Fiberglas-reinforced built-up roofs for up to 20 years!

INDESTRUCTIBLE "ALL-GLASS" ROOFS

Beneath the Fiberglas-reinforced built-up roof, specify the most widely used of all roof insulations—light and durable *Fiberglas* Roof Insulation. Make your new roofs ALL-GLASS from top to bottom—for strength, insulating efficiency, fire-safety and permanence. *It's amazing the difference Fiberglas makes!*



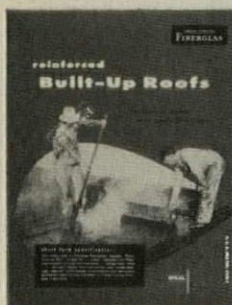
ORDINARY ROOFING felts *separate* bitumen applications, creating layered construction. Destructive air or moisture may be trapped in poorly bonded areas, causing premature roof failure.



FIBERGLAS ROOFING Reinforcement is highly porous . . . allows bitumen to penetrate and bond all layers *together* forcing out air and moisture. The result is a monolithic, reinforced, long-lasting roof.

DESIGN DATA

Specification information on Fiberglas Reinforcement for Built-Up Roofing, even later than that in Sweet's Catalog, is contained in new 32-page booklet—Reinforced Built-Up Roofs. For your free copy, contact local Fiberglas sales representative or write directly to Owens-Corning Fiberglas Corporation, Dept. 171-G, Toledo 1, Ohio.



OWENS-CORNING
FIBERGLAS

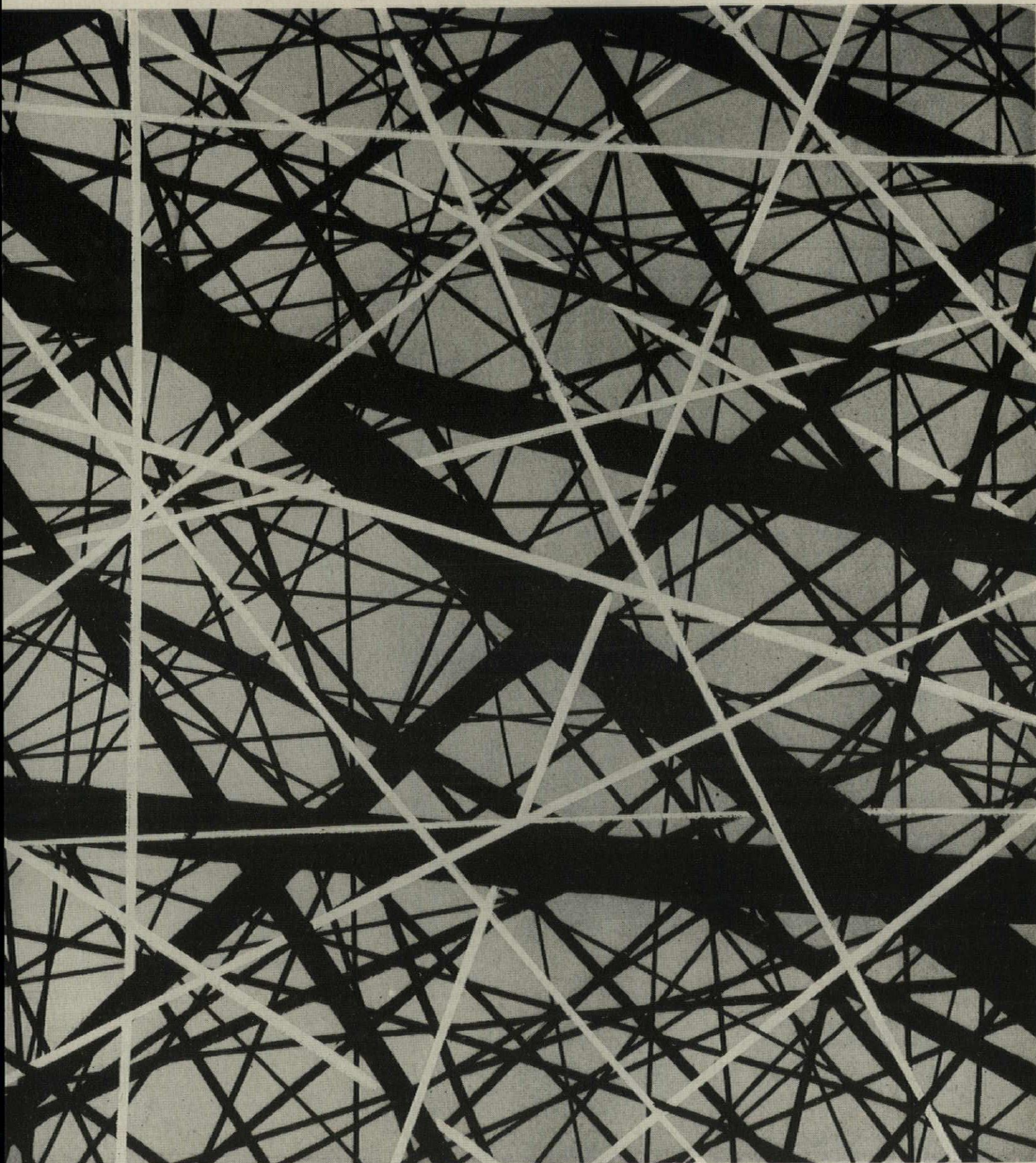
*T-M. (Reg. U. S. Pat. Off.) O-C. F. Corp.

ROOFING PRODUCTS

Fiberglas Perma-Ply No. 5. Fiberglas Base Sheet. Fiberglas Roof Insulation. Fiberglas Form Board. Fiberglas Mop Yarn. Fiberglas Core-top* (Cold-application roof resurfacing).




IMPROVEMENT IN 100 YEARS!



This illustration was taken from a micro-photograph showing strong reinforcing structure of Fiberglas strands.

It's Quiet!



**in AIR CONDITIONING
AND REFRIGERATION SYSTEMS
with NEW
Space Saving INNER-FIN...**

BUSH 'BC' Blower-Condensers

Bush 'BC' Blower Condensers permit air conditioning or refrigeration systems to operate *without* condensing water . . . provide the answer to excessive water costs, limited supply, excessive impurities or disposal problems.

Available in capacities up to 20 Tons, new Bush 'BC' Blower Condensers feature *low noise level* . . . quiet operation.

Patented Inner-Fin coil construction, a *Bush exclusive*, makes these the most compact units on the market. Units are easy to install, have rugged all-steel cases with durable rust-resistant finish . . . are available arranged with either blower fan or propeller fan.

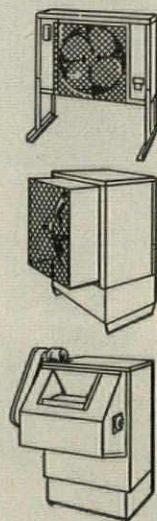
The BUSH line of water-savers, most complete in the industry, also includes:

'CDT' COPPER DECK COOLING TOWERS with all copper decking which cannot rust or rot. Capacities from 3 to 75 tons.

'IEC' INNER-FIN EVAPORATIVE CONDENSERS featuring patented inner-fin coils. Both units available with blower or propeller fan. Capacities from 3 to 90 tons.

'PFC' PROPELLER FAN CONDENSERS — Two basic models, 2.2 Tons and 3.3 Tons, can be combined by mounting in banks to obtain any desired tonnage.

'PS' PRESSURE STABILIZERS which automatically maintain satisfactory head pressure when air cooled condensers operate outside in low ambient temperatures.



Write direct for complete information or contact your experienced BUSH representative for valuable engineering and application assistance.



BUSH MANUFACTURING COMPANY

WEST HARTFORD 10, CONNECTICUT

RIVERSIDE • CALIFORNIA

LETTERS *cont'd.*

MODERN MAIN STREET

Forum:

I find your article "Modernizing Main Street" (AF, Feb. '56) a most interesting discussion and one which contains very valuable information for a broad cross section of professional and public activities.

I am, naturally, somewhat biased in my own views and feel that the whole modernization program must be very carefully attuned to the transportation system of the community. This point does not seem to have been stressed at the round table. Presumably, it fell outside the scope of the planned discussion.

Congratulations on a very good job.

WILBUR S. SMITH
Bureau of Highway Traffic
Yale University
New Haven, Conn.

Forum:

Both the shopping center and Main Street fill important roles in our economy. The chains have an important stake in their downtown locations and you may be sure that they will work hard to maintain their positions in the central business districts.

Modernization is a major key to the revitalization of downtown shopping districts and we believe you have given this matter the correct emphasis in your article.

ARNOLD D. FRIEDMAN, publisher
Chain Store Age
New York, N.Y.

M.I.T.'S AUDITORIUM

Forum:

I have read the article by Professor Bruno Zevi in which there were attributed to me severe and very precise opinions on the M.I.T. auditorium (AF, March '56), and I was surprised greatly.

When I asked for an explanation, Professor Zevi told me that in a general discussion on architecture some months ago (which frankly I don't remember) I had given an opinion like the one he mentioned. I assure you that the critical observations on such works which I have always thought, and which in consequence I could have expressed to Professor Bruno Zevi, as I have expressed to others, concern a theoretic aspect of the static scheme: the conflict between the exterior aspect of a thin vault and the static impossibility of a real thin spherical vault supported at three points.

I particularly regretted the last sentence of the article concerning the advantage of publishing such works, a sentence which is absolutely contrary to my thoughts and which can only be the result of an unfortunate misunderstanding.

PIER LUIGI NERVI
Rome, Italy
continued on p. 72

How to save your clients \$194 a year in maintenance costs per 1,000 square feet of floor space

For every 1,000 square feet of floor space in heavy traffic areas, you can actually save your clients an average of \$194 a year, or 50.7% on maintenance costs by carpeting those areas.

New studies prove that carpet in reception rooms, busy work areas, and corridors cuts costs 50.7%. The average cost, per 1,000 square feet, of maintaining carpeted floors at accepted standards of maintenance averages \$189 a year in heavy traffic areas. For non-carpeted floors, this figure shoots up to \$383 — an increase of \$194 a year for each 1,000 square feet.

This tremendous difference in maintenance cost exists simply because carpet is so much easier to clean. Fewer man-hours, less equipment are needed because carpet's "brushing" action confines soil to a small area, and soil stays high in the pile where routine vacuuming can easily remove it. One operator — one operation.

And since there's no gloss to wear off to reduce the appearance level, carpet looks better between cleanings. In addition, carpet compares very well for durability.

Figure the floor space on the job you're now doing to see how much carpet can save your client. On top of this tremendous economy, carpet acts as a blotter to absorb noise and provides safe, sure, slip-proof footing. In general office areas, corridors, reception rooms and other heavy traffic areas, carpet will prove the most economical, most dignified, most practical choice for your clients.

Send for your file copy of "Cutting Costs With Carpet," the complete breakdown of actual field costs on maintaining carpeted and non-carpeted floors. Write to Dept. A3, Carpet Institute, Inc., 350 Fifth Avenue, New York 1, N. Y.

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DESIGN STUDY
NUMBER

2

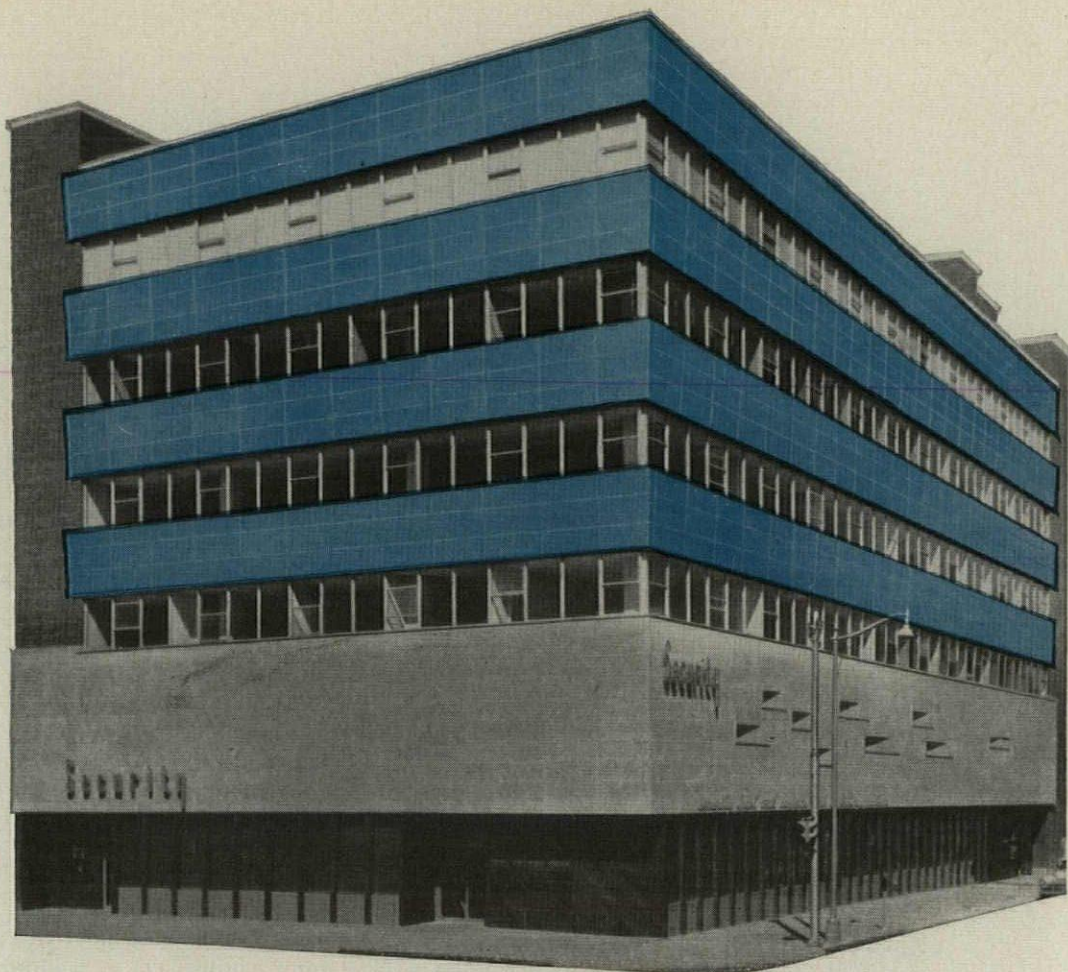


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anical Engineering, R. L. Prussing


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Davidson Type 2 Porcelain Panels:
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Good creative design, planning and construction are the results indicated in the completed structure shown above. Results of the "finished job" begin with materials that offer compatibility with others and yet maintain freedom of design as well as economy to over-all construction costs. Davidson Architectural Porcelain for the building shown above was Type 2 Facing Panels in a ripple powder blue finish, which were mounted on steel framing and set at an angle.

Whether the application is porcelain facing panels or curtain-wall panels for new or remodeling use, you can rely on Davidson Architectural Porcelain Panels to offer unlimited freedom of design expression.

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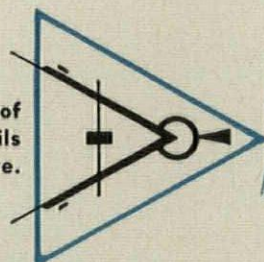
Davidson



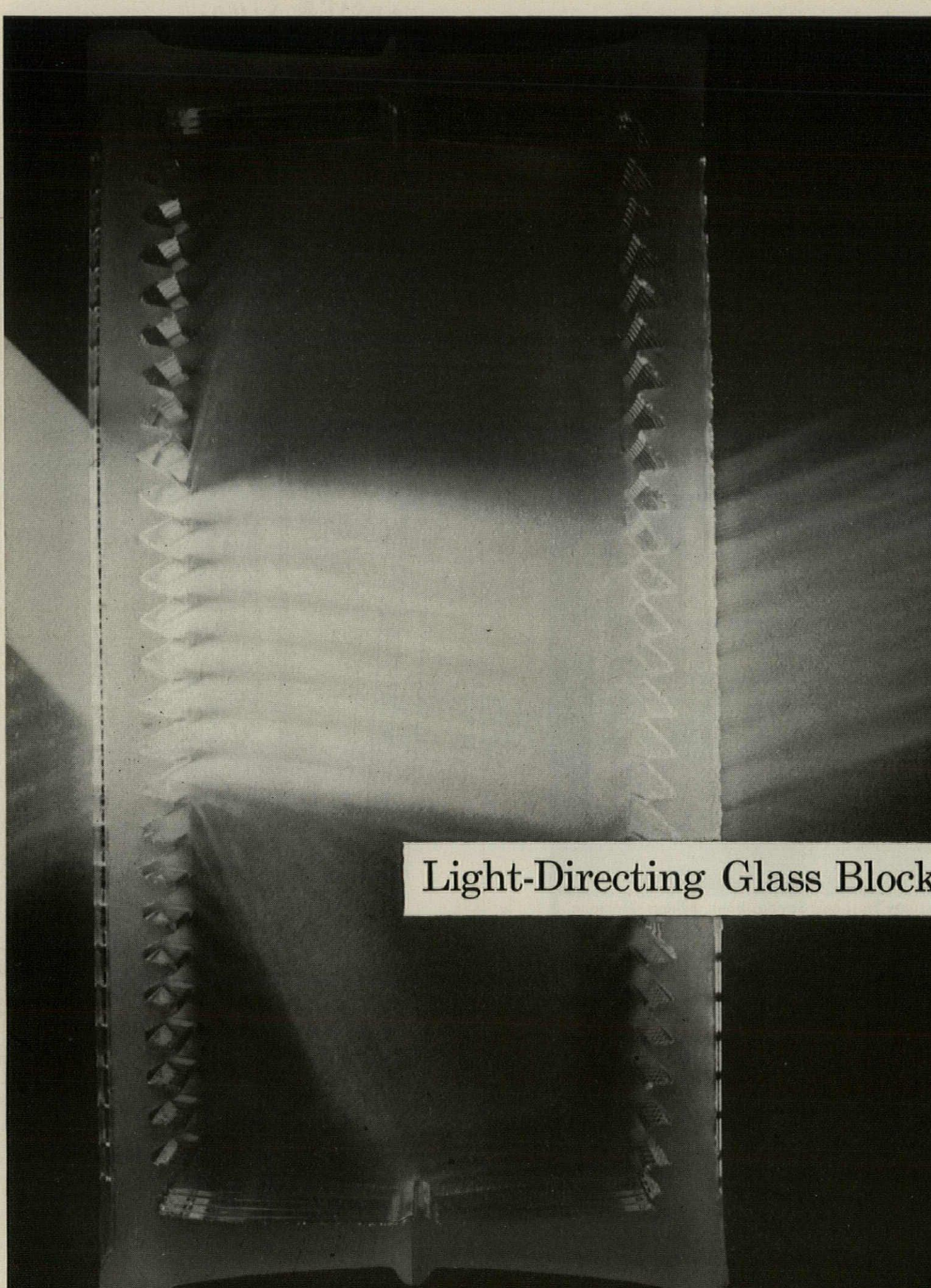
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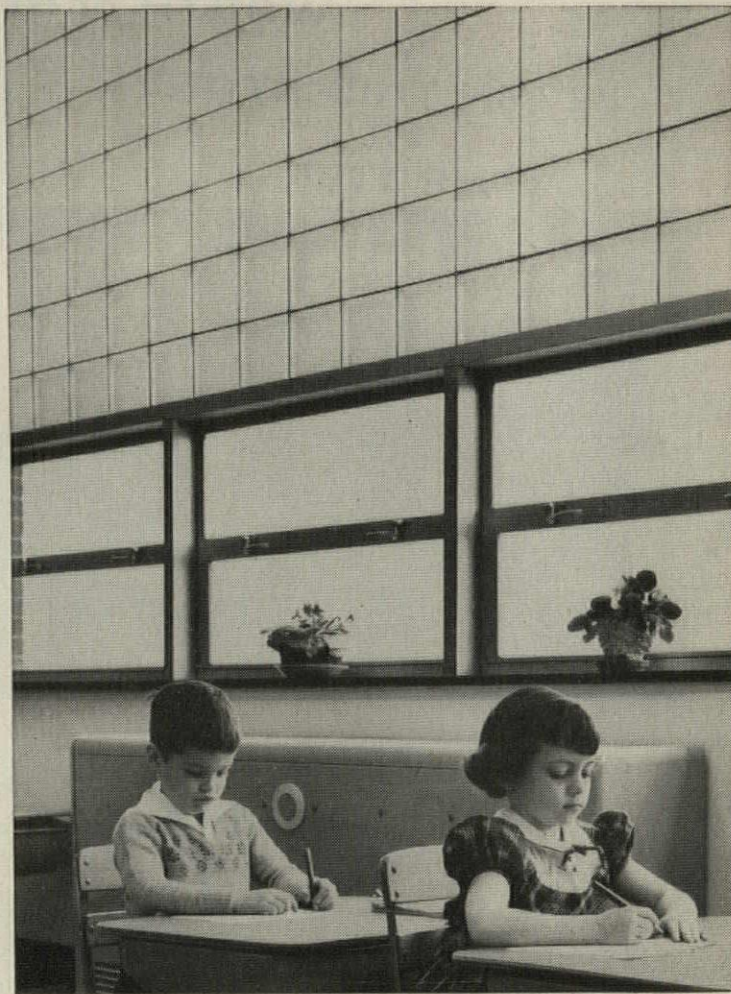
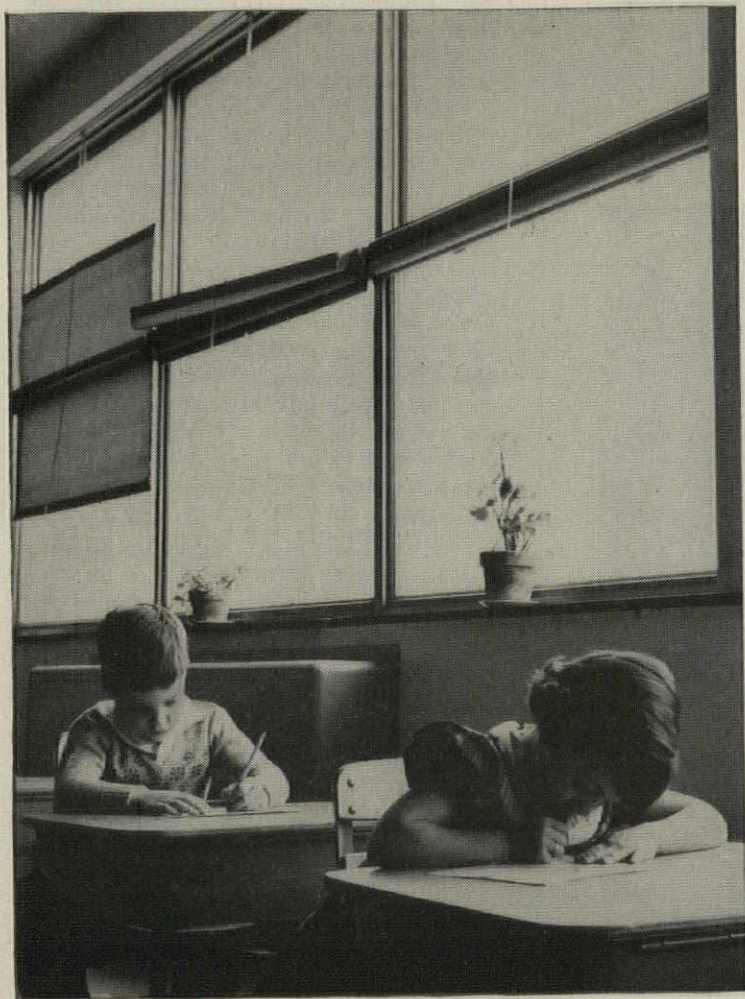
See next page for study of
porcelain construction details
of the building shown above.



Watch for Design Study Number 3 which
will appear in this publication in Oct.



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.....change this.....to this

You see in the enlarged cut-away view at the left how PC Glass Blocks "discipline" daylighting. Tiny prisms, pressed into the inner faces of the block, collect the daylight, bend the rays and direct them upwards. Installed in panels, these *light-directing* Glass Blocks bounce daylight off the ceiling, and distribute it uniformly throughout the room. This *balanced* illumination bans glare

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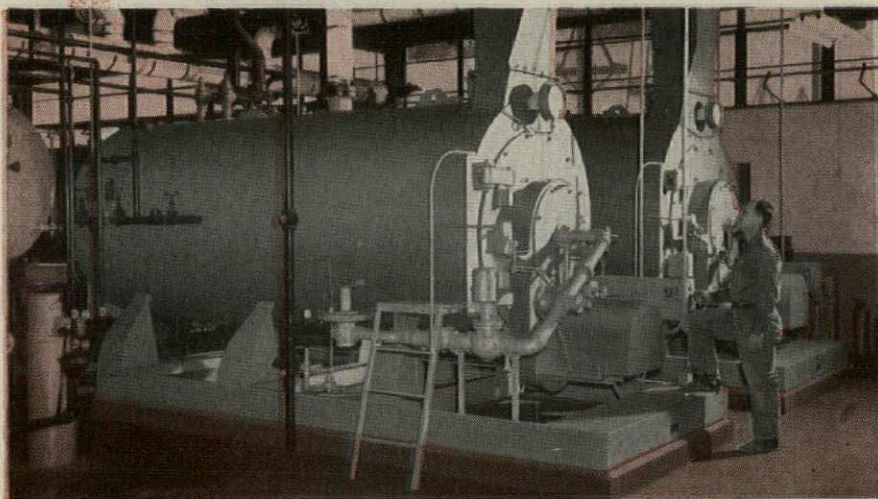
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LETTERS *cont'd.*

HIGH STAGEHOUSES

Forum:

According to the judges who selected the prize-winning plans for the community youth center in the Porcelain Enamel Design Competition (AF, March '56), the "high stagehouse remained an unsolved problem." I did not see a copy of the design program for this competition, but I would like to ask why the judges think such a high stagehouse is necessary. Do the architects who set up this program expect this youth center theater to house nothing but touring Broadway musical shows? Most Broadway theaters with their high stagehouses and counterweight systems for flying scenery date from a period when old-fashioned, late Victorian wing and drop settings were still in use. New York theaters continued to be constructed in this way until all theater building stopped in the late twenties when excessive land values made it impractical to provide sufficient off-stage area for other methods of shifting.

WENDELL COLE
Associate Professor of Speech and Drama
Stanford University
Stanford, Calif.

• The stagehouse tower was required by the competition program to force contestants to study the difficult problem of sheathing a multistory blank wall in porcelain enamel metal.—ED.

NEW FASTENERS

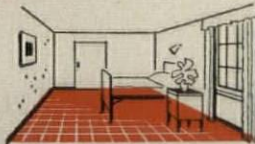
Forum:

In your article on fastening in the April issue I believe you overlooked the tremendous possibilities of using these new methods in specialty work. While bolting and welding are having their greatest advancement in heavy or structural connections, the powder-actuated and stud welds are just coming into their own in building specialties. The initial high cost of the equipment, charges and pins are rapidly overcome by the time saved in these days of high-priced labor. The time required for setting sash, door bucks and anchoring attachments has been cut appreciably by the use of these tools. In one small curtain wall job of some 4,000 sq. ft. of surface we used powder-actuated studs to fasten into the structure consisting of ½" thick steel or a concrete surround. So effective was this means of anchoring that we were able to erect the aluminum for well under 50¢ per sq. ft. We have never come close to this cost when required to use such old-fashioned methods as welding or drilling and tapping the structural steel.

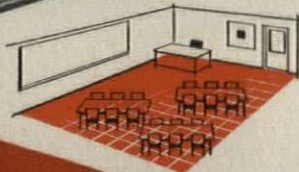
STANLEY E. ARONOFF
Southern Plate Glass Co.
Baltimore, Md.

• Incidentally, FORUM failed to credit to the pioneering Nelson Stud Welding Division of Gregory Industries Inc. the photo at the top of p. 161.—ED.

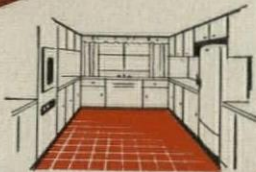
there's



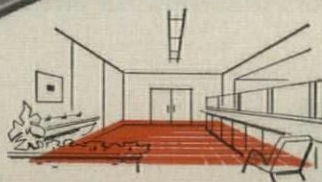
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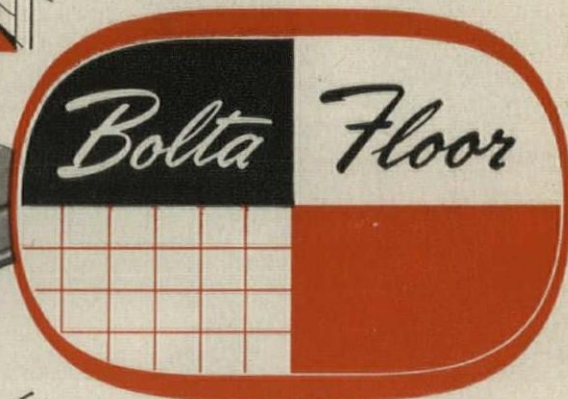


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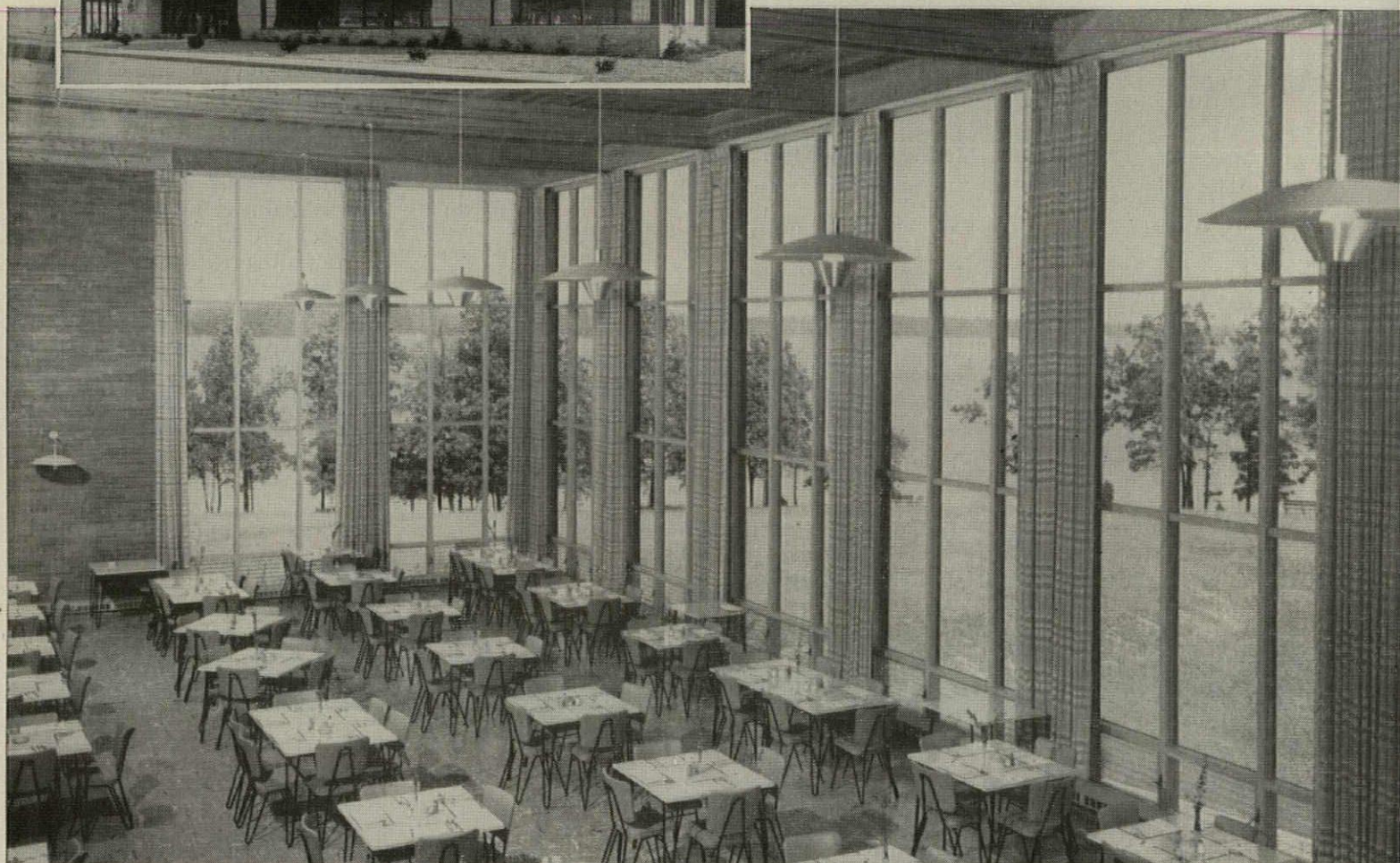
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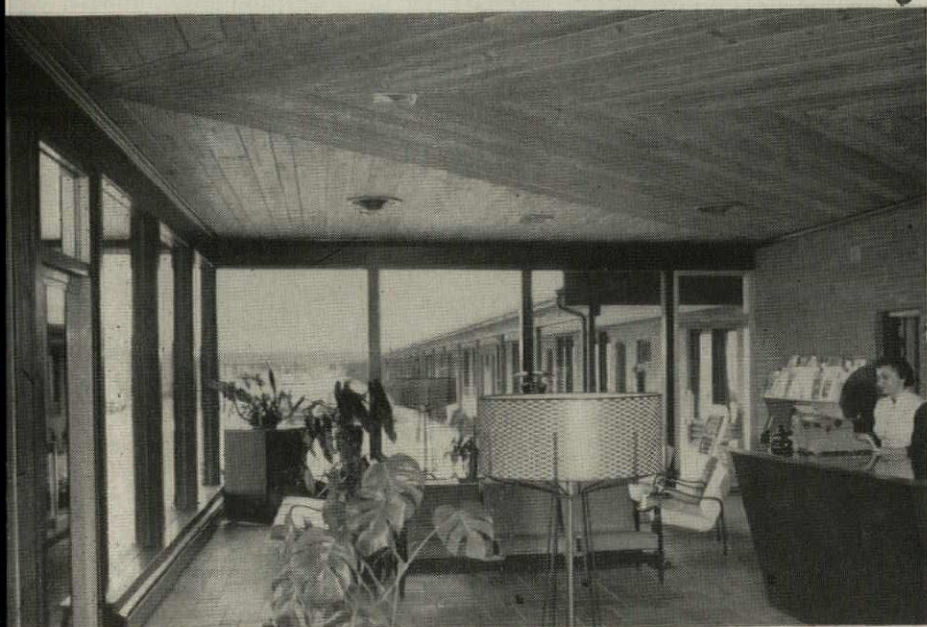
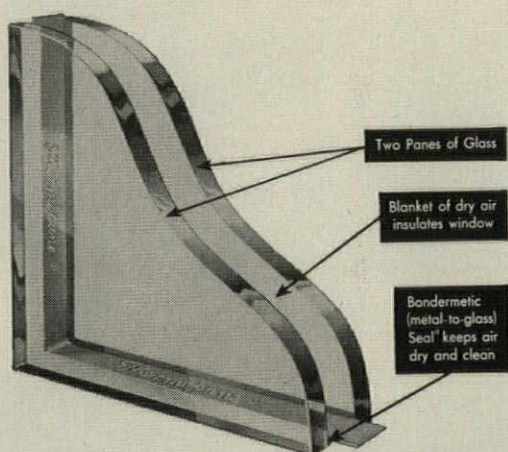
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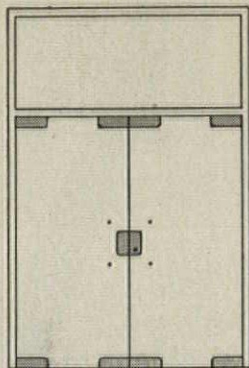
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Doors are furnished complete with fittings only, which are designed to receive pivot hinges and other builders' hardware. Installed like any pivot-hinged door. Frames or jambs of aluminum, bronze, stainless steel or other metal are preferable.

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EXCERPTS

Technique vs. style

Excerpts from an address by Architect Robert Barnard O'Connor at the Trinity College Convocation on "Liberal Education and the Creative Man"

In the early years of the modern movement in architecture there was endless talk of functionalism as if Louis Sullivan or Frank Lloyd Wright or the Bauhaus had suddenly discovered something new in history and through it had brought new dimensions to their art. The truth is: there never was a serious architecture that was *not* functional. Whether it was great or not is another matter.

The difficulty, indeed, with architecture is the dichotomy inherent in it since it first became an art, between building as technique and building as esthetic expression—between the skeleton and the life. So far has modern invention gone in providing a well-nigh endless choice of materials and structural methods, and so complex have become the necessities of the mechanical services, that we have come to mistake the bare coordination of technical detail for the whole art of architecture. It is because of this possibility of producing architecture of high technical efficiency without any effective claim whatever to esthetic depth that we see such thinness, such uncertainty, and such lack of emotional impact in architectural design today.

Success in the one aspect and failure in the other epitomizes the modern life our architecture reflects. With brilliant achievement in science and technology our mechanomorphic society has yet almost lost touch with all that conduces most to emotional balance and spiritual enrichment; with everything, in short, that has contributed qualitative values in the struggle for human growth.

Style, which in architecture is the ageless factor that remains when technical innovation and functional detail have passed into history, and which comes at last to summarize for posterity the whole intricate balance of need and beauty, intellect and emotion, ambition and idealism from which is woven the physical fabric of its time, will not again attain coherence and grandeur until man achieves it.

Reliance on technology and science, and training, however thorough, in the analytical method, is not enough. Nor is even a knowledge of all the facts of history and the arts. "The tree of knowledge," as Ruskin says, "is not the tree of life." We must again enlist the whole capacities of man, the emotional as well as the intellectual, the intuitive as well as the analytical. And we must regain that firm sense of purpose without which change ceases to be progress and creation loses all feeling of joy and fulfillment.

continued on p. 82

Q

Question:

ARE YOU A "Big Spender" --TOO LATE?

A

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"Yes" is the answer every time you sign dollars away for pipe repair and replacement. You are a "Big Spender" because the cost for replacement and repair of pipe comes much higher than the money spent for the original installation. And you're "too late" because a little more for wrought iron pipe to start with would have prevented your big spending later on.

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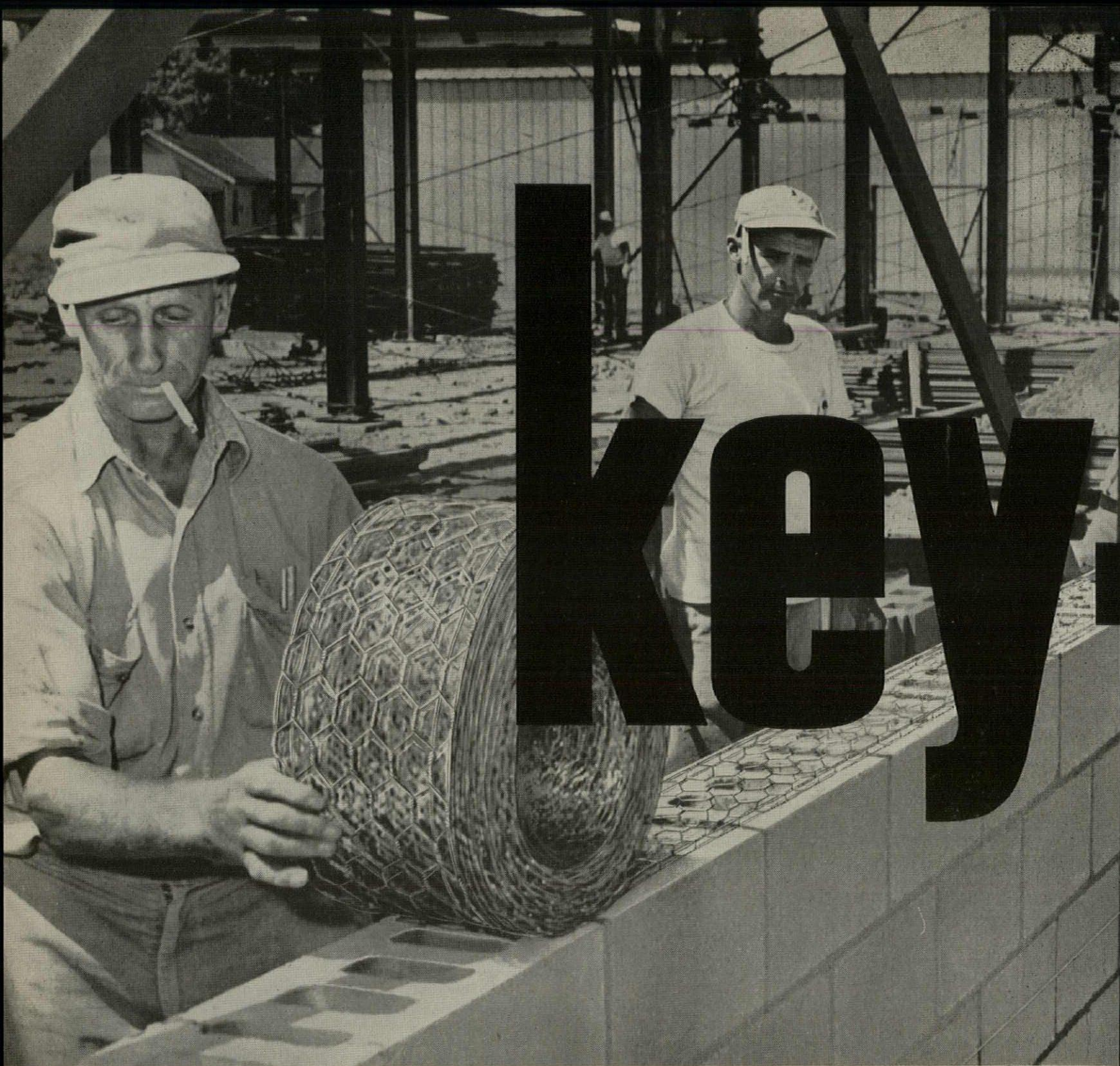
Solution:

Wrought iron pipe has the unique ability of lasting a long, long time. This durability is solving corrosion problems in a variety of piping services in industrial plants across the country. These users have found that it makes good business sense to ask "How long does it last," instead of, "How much does it cost, initially." This economy story is interestingly told in our booklet, *True Piping Economy*. Write for your copy. A. M. Byers Company, Clark Building, Pittsburgh, Pa.

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Facts You Should Know About Masonry Reinforcement

By Edwin L. Saxer: Professor and Chairman, Civil Engineering Department, University of Toledo

For some time, there has been a growing tendency to rely on steel reinforcing in mortar joints to improve the capacity of masonry walls to resist the stresses which develop.

The usage of joint reinforcement has often proven unsuccessful in the past. The chief reason for this has been the failure to use reinforcement in more than every third or fourth joint—a practice which provides little or no benefit to the intermediate joints.

A contributing factor in many cases has been the inability of some forms of reinforcing to develop adequate bond strength.

As a result of research at the University

of Toledo, and at other laboratories, the principles of effective joint reinforcement are now well understood. All indications point to the fact that reinforcement should be used in every joint, or at least in every other joint, to insure reasonable effectiveness.

Our research on the effectiveness of Key-Wall leads us to the following conclusions: (1) The design of Key-Wall results in a highly efficient distribution of steel. (2) The use of Key-Wall can reduce significantly the cracks resulting from shrinkage of the masonry; and (3) Key-Wall is effective in improving the lateral strength characteristics of masonry walls.

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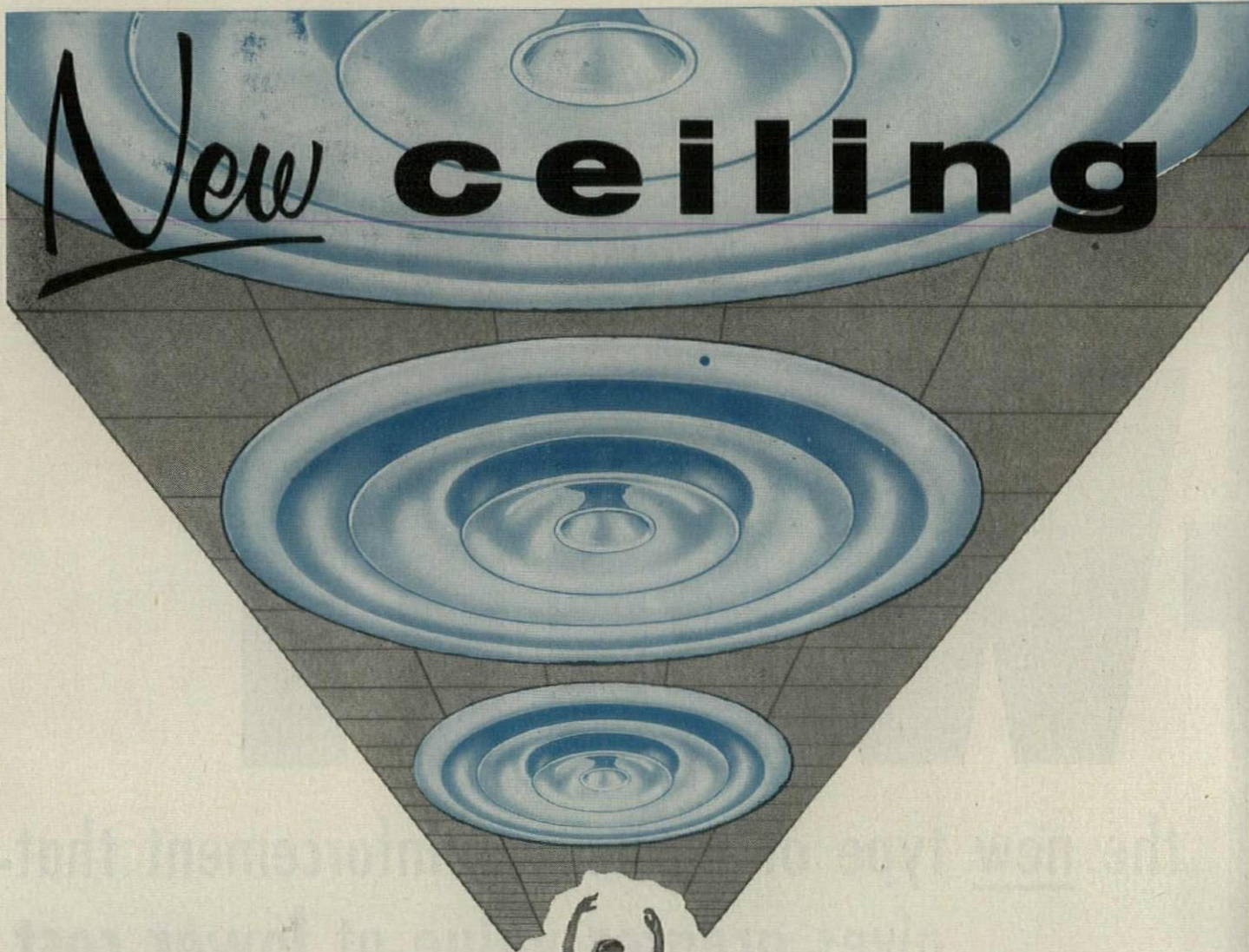
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EXCERPTS *cont'd.*

The architect's office

Excerpts from an article on the US architect's relationship to the US building business by Martin Pilch in The Architectural Review of Britain

The building industry in America is one of the highest paid industries, and one of the most competitive. It commands the best technical skill available and is very cost-conscious. It has to deal with well-organized labor unions and pays very high wages. Only a well-above-average architectural employee in New York City commands a salary equivalent to that of a bricklayer. The average tradesman is well educated and highly skilled. Large contractors have a tendency to become brokers, as they may only do one trade themselves and subcontract all else. They comprise a small, very efficient organization of specialists in planning and organizing building operations.

The normal practice in large jobs where the clients are private individuals or corporations as contrasted with public bodies, is to employ a contractor almost at the same time as the architect. In fact the client may approach the contractor, and, in consultation with him, appoint the architect, or vice-versa. The contractor then acts as a consultant, and is paid either by a fixed fee, a percentage of the cost of the job upon completion, or in any other mutually agreed way. Subcontracts are then sent out to tender in the usual way.

The American client has long ago accepted modern mechanical services, and demands the best in heating, lighting, air conditioning, lifts, etc. The American architect, therefore, employs consultants early, and much more frequently than is the case in Britain—in fact they are employed universally. Certain states will not grant permission to erect any building regardless of size, unless structural and mechanical drawings are accompanied by calculations, and the drawings are stamped by a licensed engineer. Large architectural offices at one time employed their own specialists, but that method is being superseded in favor of outside consultants as this gives the architect freedom to choose the most appropriate firm for the job. The consultants used for an average job are: heating and ventilating, plumbing, electrical, structural. These consultants are usually paid by the architect either by a fixed fee or a mutually agreed percentage of the cost. This service is included in the architect's fee from his client, and the client is only asked to pay separately for special services, if required, i.e., town planning consultants, grading or foundation specialists, etc.

continued on p. 92



Specify PHELPS DODGE HABIRITE-INSULATED ARMO-LOK CABLE

Phelps Dodge Armo-Lok cable with Habirite (butyl rubber) insulation—a companion to Phelps Dodge Varnished Cambric insulated interlocked armor cable—is more than “just another interlocked armor cable.”

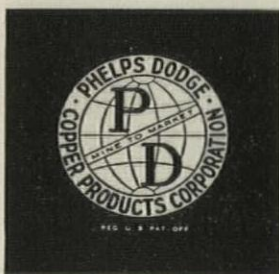
Habirite—developed through years of Phelps Dodge experience in the design and manufacture of high voltage cables—is a specially engineered butyl rubber compound. It far surpasses any other type of rubber insulation for dependable service.

Habirite offers these distinct advantages over other rubber insulations:

- ▶ Far greater resistance to heat and oxidation with consequent higher temperature rating and lower conductor size and cable cost.
- ▶ Far greater resistance to ozone found around high voltage equipment.
- ▶ Far greater mechanical toughness.
- ▶ Better electrical properties affording a greater safety factor in operation.
- ▶ Highest uniformity due to controlled uniformity of raw material.

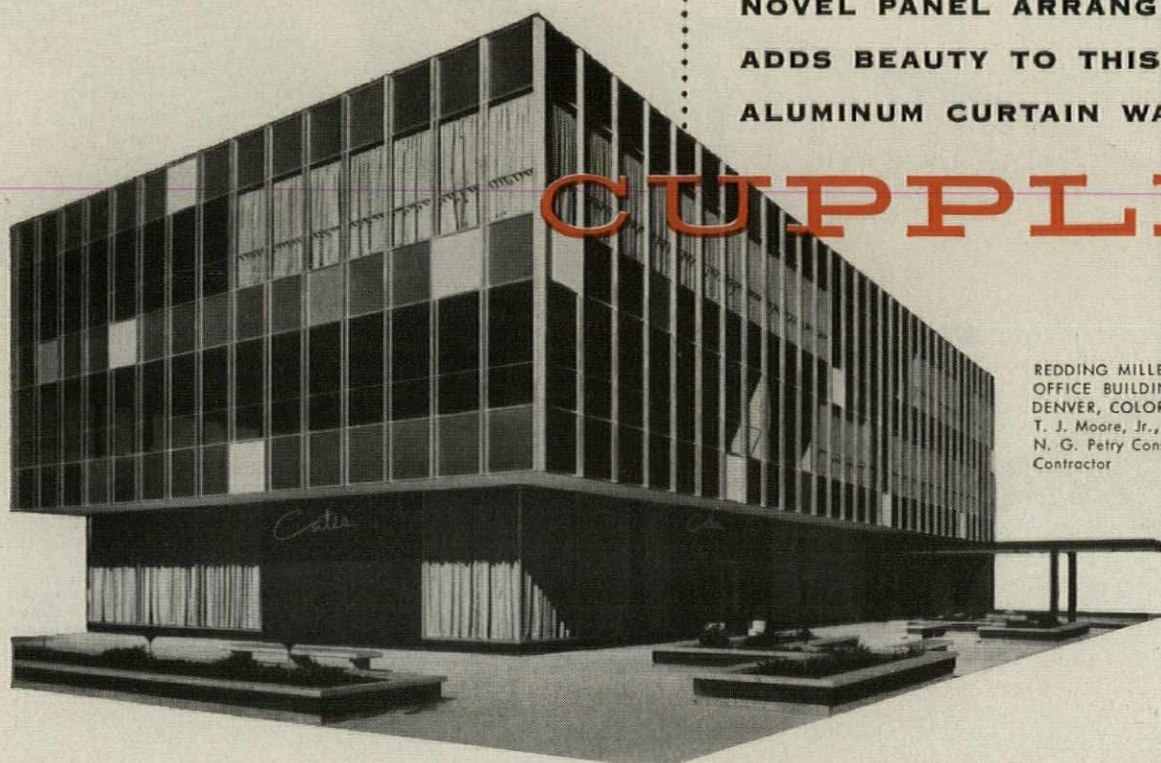
★ ★ ★

See your Phelps Dodge distributor for information on a complete Armo-Lok system. For catalogue and specification data on Habirite or Varnished Cambric insulated Armo-Lok cable, write: Dept. M-6, Phelps Dodge Copper Products Corporation, 300 Park Avenue, New York 22, N. Y.



PHELPS DODGE COPPER PRODUCTS **CORPORATION**

SALES OFFICES: Atlanta, Birmingham, Ala., Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensboro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.



NOVEL PANEL ARRANGEMENT
ADDS BEAUTY TO THIS
ALUMINUM CURTAIN WALL BY

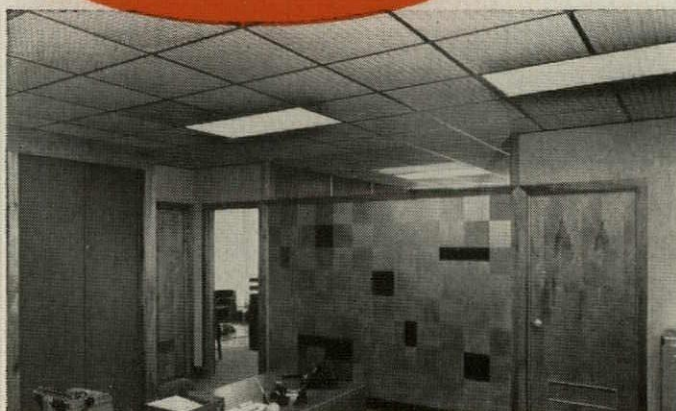
CUPPLES

REDDING MILLER
OFFICE BUILDING
DENVER, COLORADO
T. J. Moore, Jr., Architect
N. G. Petry Construction Co.,
Contractor

This is another example of the many design patterns possible with Cupples' versatile curtain wall construction. By intermixing gray aluminum and vari-colored porcelain panels on the facade, an unusually pleasing, colorful effect is obtained. A series of horizontal and vertical tubular aluminum mullions supports the panels and the fixed, double-weatherstripped lights.

Cupples' dominance in curtain wall design, construction and erection keeps pace with its leadership in the manufacture of aluminum windows, doors and other aluminum products. Our catalogs are filed in Sweet's.

CUPPLES
ALUMI-COUSTIC CEILING SUSPENSION
USED THROUGHOUT BUILDING



The ALUMI-COUSTIC Grid System—exposed aluminum tees—was used to support the acoustical metal ceiling panels, as well as the lighting fixtures. Cupples ALUMI-COUSTIC Grid Systems for Suspended Ceilings permit complete accessibility and flexibility by easy removal and interchange of ceiling panels and lights. Add beauty and washability... at an extremely low cost.

Cupples

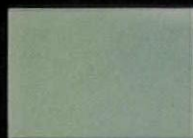
PRODUCTS CORPORATION
2659 South Hanley Road • St. Louis 17, Missouri



vid H. Horn, A.I.A. & Marshall D. Mortland, A.I.A., Architects. Fresno Marble & Tile Co., Tile Contractors.



RILEY
TILE



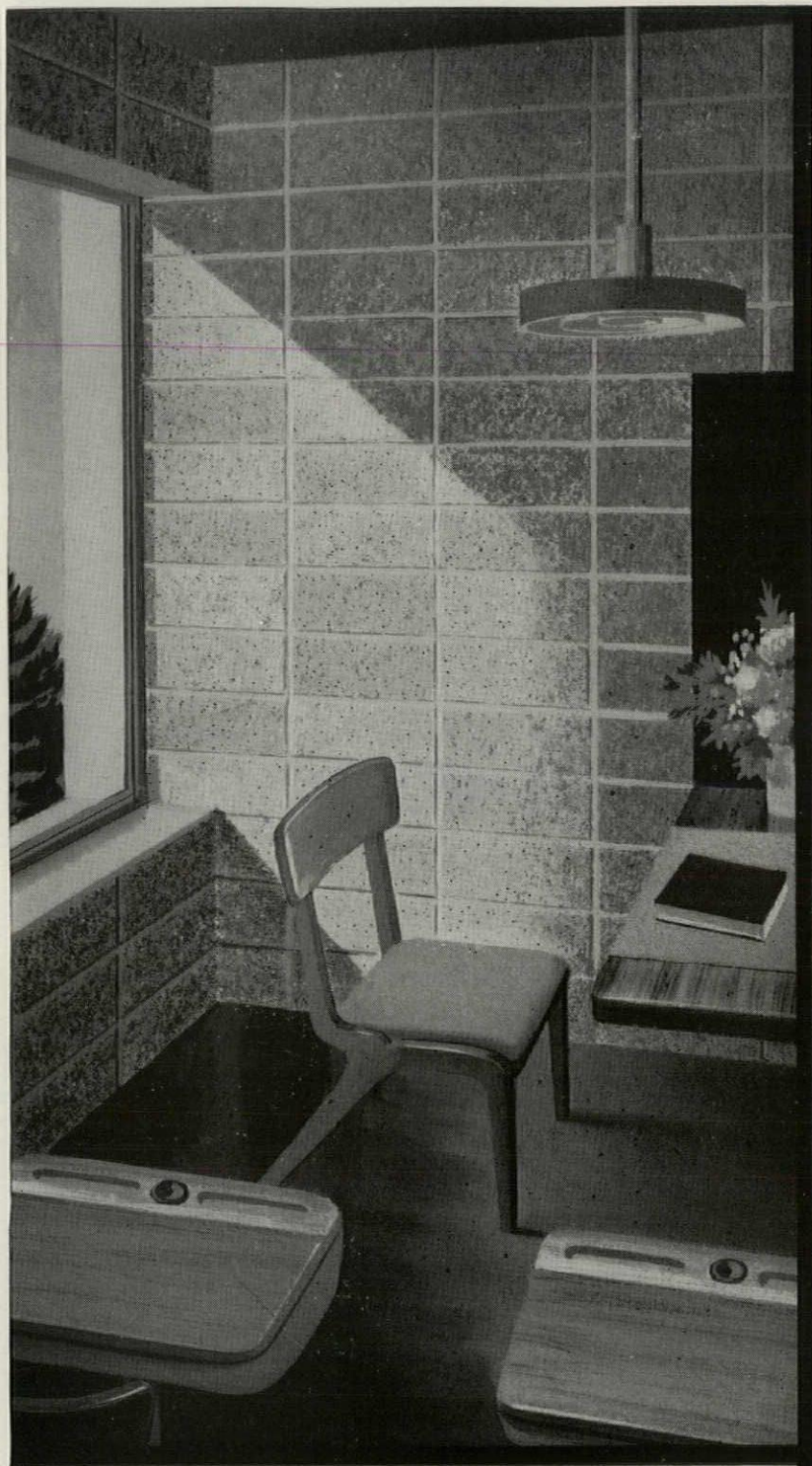
GLAZED
WALL TILE

MOSAIC® *The only complete ceramic tile line*
from America's largest ceramic tile manufacturer

Ask your Mosaic Representative for helpful, informative Mosaic literature or write THE MOSAIC TILE COMPANY, Dept. 51-10, Zanesville, Ohio. Member: Tile Council of America and The Producers' Council, Inc.

Showrooms, Warehouses, Factories from Coast to Coast . . . WAREHOUSES & SHOW-ROOMS: Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Detroit, Fresno, Greensboro, E. Hartford, Hempstead, Hollywood, Miami, Minneapolis, New Orleans, N. Hollywood, Philadelphia, Portland, Rosemead, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C. SHOW-ROOMS: Milwaukee, New York. OFFICES: Birmingham, Buffalo, Cincinnati, Kansas City, Oklahoma City, Pittsburgh. FACTORIES: Corona, El Segundo, Ironton, Jackson, Little Rock, Matawan, Zanesville.





A WAYLITE SURFACE

needs no acoustical treatment

In addition, it has high thermal insulative qualities . . . offers many decorative possibilities . . . it is low in cost . . . fire-safe

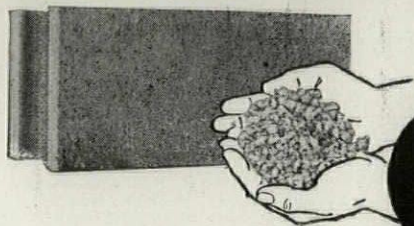
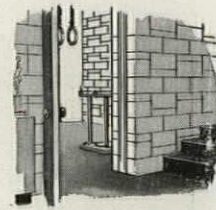
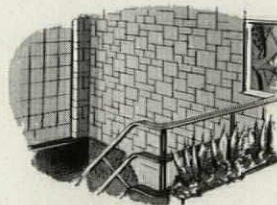
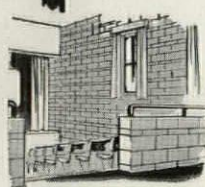
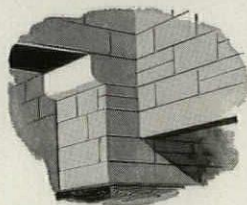
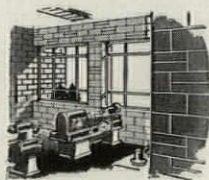
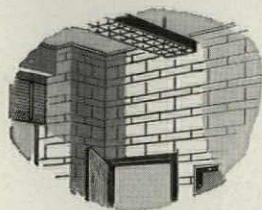
A large number of schools are being built these days of Waylite concrete masonry units.

The fact that the exposed surface of Waylite is one of the most efficient acoustical treatments known is in part responsible. Rooms that are comfortable to the ear are equally important in churches, auditoriums, offices, and many other structures.

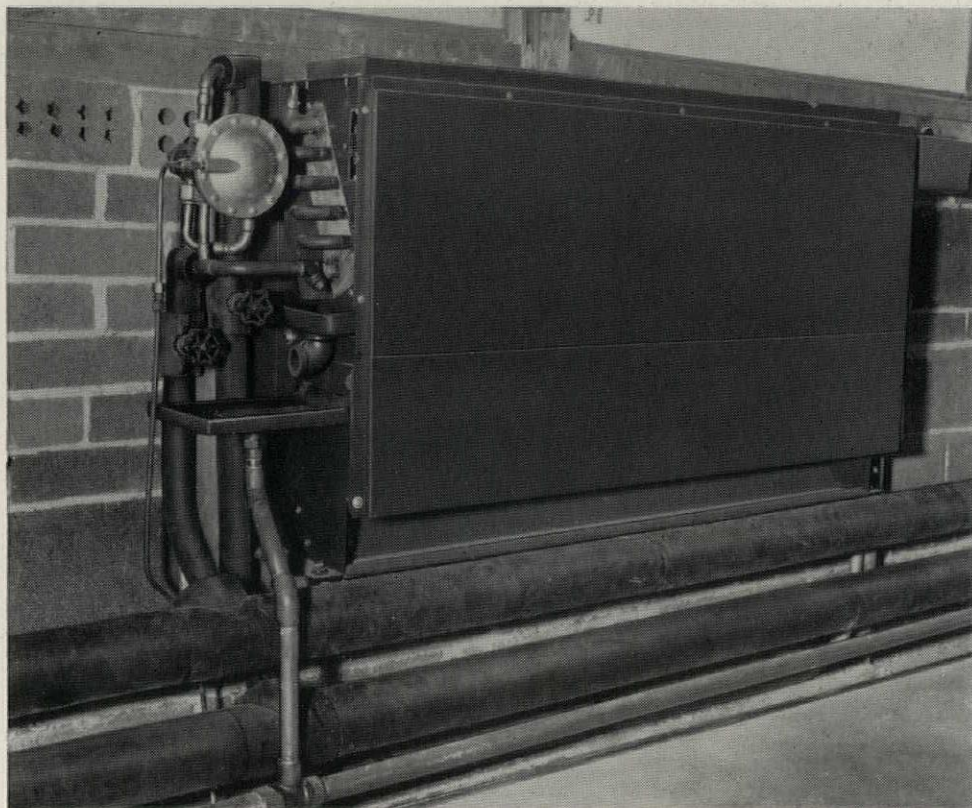
Exposed Waylite is not only comfortable to the ear, but it is pleasing to the eye. The unit patterns shown give some idea of the varied decorative effects that can be easily achieved. The natural surface of Waylite units is attractive in color and texture. Units may be painted—or pigmented during manufacture.

Waylite concrete masonry units are structurally adequate and give a combination of four important factors: (1) high thermal insulative qualities; (2) excellent acoustical values; (3) a wide range of decorative possibilities; (4) low in cost—and fire-safe.

You will find 24 pages of engineering data on Waylite in Sweet's Catalog. Additional information is available on request. Address the Waylite Company, 20 North Wacker Drive, Chicago, Illinois or Box 30, Bethlehem, Pennsylvania.



WAYLITE
MASONRY UNITS



Condensation is prevented by Armaflex's closed cell structure and high insulation efficiency. Armaflex has a conductivity of 0.28 Btu./sq. ft./in. thickness/hr./degree F. temp. difference at 75° mean temperature. This installation is in new office building of Aircraft Marine Products, Inc., Harrisburg, Pa.

New insulation for liquid cooling lines **stops dangerous condensation**

Now you can stop condensation for good on liquid cooling, chilled water, and other cold lines. Armstrong Armaflex*, a flexible new pipe insulation, completely seals out moisture and air. Armaflex is made of foamed plastic, with a closed cellular composition that provides an exceptionally efficient vapor barrier. In 1/2" thickness, Armaflex prevents condensation under normal design conditions on indoor lines operating as low as 32° F. Insulating efficiency always stays high because Armaflex stays dry.

Flexible enough to tie in knots, Armaflex can cut application costs by as much as 50% when compared with wrap-on or rigid type pipe coverings. It fits easily over pipe or tubing, fol-

lows contours without cutting or fitting. If lines are already in operation, Armaflex can be slit lengthwise, snapped into place, and sealed with Armstrong 520 Adhesive.

Armaflex is clean to work with, too. It is soft, odorless, and will not rub off, crumble or chip. There's practically no waste. Self-extinguishing, Armaflex can be safely installed before sweat fittings are made.

Armaflex comes in 6' lengths, for pipes and tubing to 3 1/8" i.d. It can be used on lines operating from 32° to 200° F.

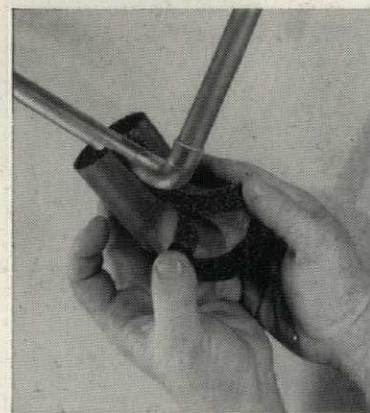
For the free booklet, "Armstrong Armaflex, a Flexible Pipe Insulation," write Armstrong Cork Company, 2007 Rooney St., Lancaster, Pennsylvania.

Armstrong
INDUSTRIAL INSULATIONS

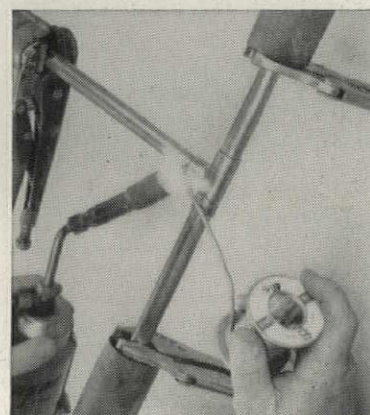
TRADE-MARK



Fast, easy to apply, Armaflex can be slipped right over tubing or piping as it's being installed. A talc coating inside covering speeds application.



Rapid fabrication of fitting covers is accomplished by miter-cutting Armaflex. Then slit, snap into place, and cement with Armstrong 520 Adhesive.



For added safety, Armaflex is self-extinguishing. It can be applied in advance to copper tubing and held back with clamps while fittings are sweated.



New RCA buildings brighten the landscape with

Curtain walls of Porcelain-enameled and Stainless Steel

RCA's Cherry Hill Offices and Laboratories near Camden, N. J. are an important outpost in the field of industrial building design. 1400 people work here; and some 320,000 square feet of floor area are encased by the richly colored steel wall panels, which in turn are supported by a bright grid of durable Stainless Steel mullions.

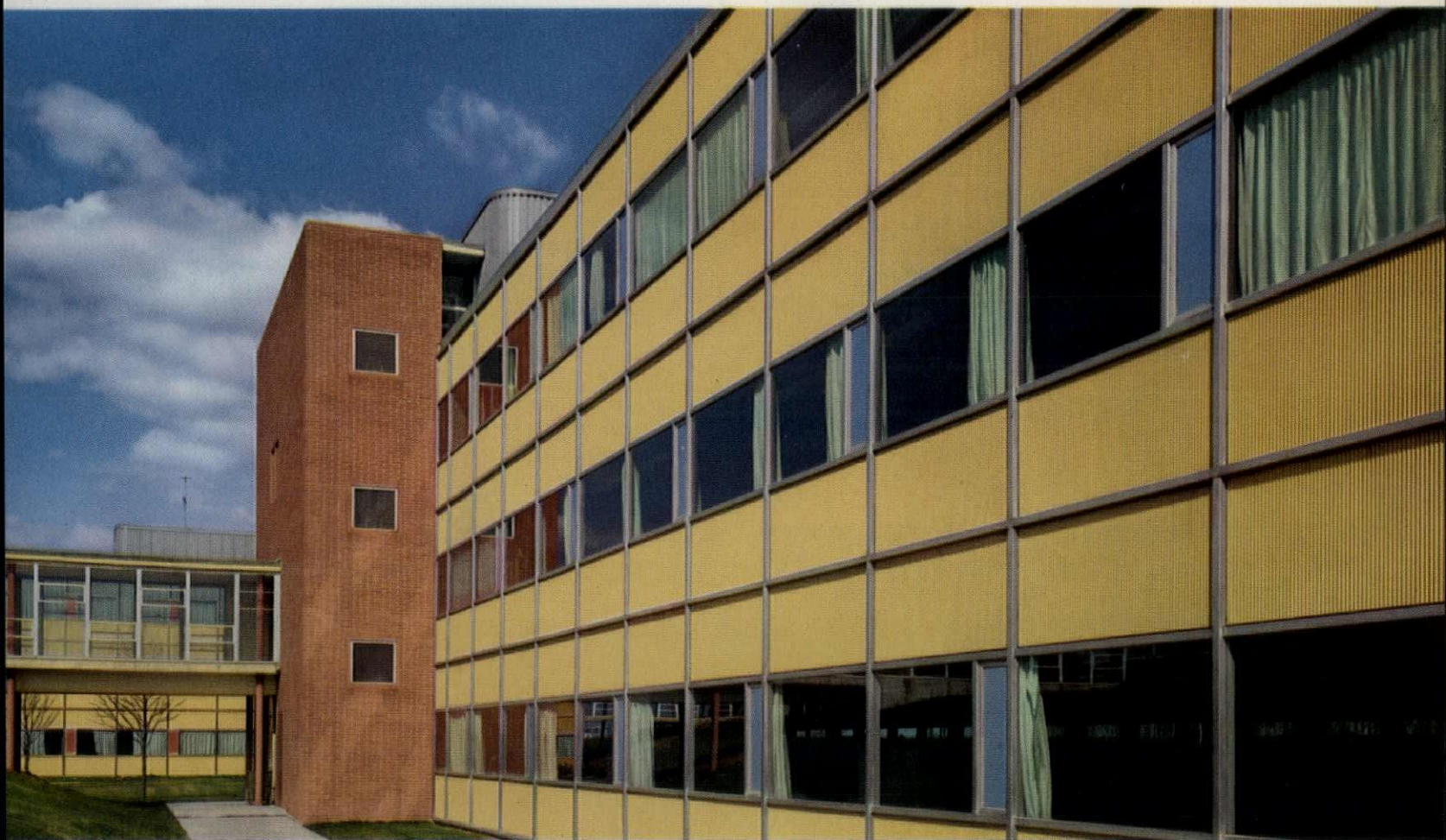
The porcelain fused to the surface of steel enameling sheets is highly resist-

ant to abrasion. The panels reflect radiant heat and lower the air-conditioning load. Total wall thickness is only $2\frac{1}{16}$ ", so thousands of square feet of floor area are added beyond the area provided in masonry construction. The panels *wash themselves* every time it rains, and the Stainless Steel framing and porcelain panels will last as long as the projected life of the building.

The curtain wall weighs only $6\frac{1}{2}$ psf,

so there is a notable saving in structural framing. The panels also serve another purpose: they are resistant to radioactive contamination.

No other curtain wall system can offer such rich color and durability at anywhere *near* the low price of Porcelain-enameled and Stainless Steel. For more information, write to United States Steel, Room 5347, William Penn Place, Pittsburgh 30, Pennsylvania.



Architect: Vincent G. Kling, Philadelphia, Pa.
General Contractor: Turner Construction Company, New York, N. Y.
Panel Contractor: General Bronze Co., Garden City, Long Island, N. Y.
Panel Manufacturer: Ingram-Richardson Mfg. Co., Beaver Falls, Pa.

USS STEELS FOR ARCHITECTURAL DESIGN

USS STAINLESS STEEL

USS VITRENAMEL SHEETS

U N I T E D S T A T E S S T E E L

GENERAL ELECTRIC BUILDS THEM

dependable

Equipped with time-tested hermetically sealed compressor for long life and trouble-free operation.

handsome

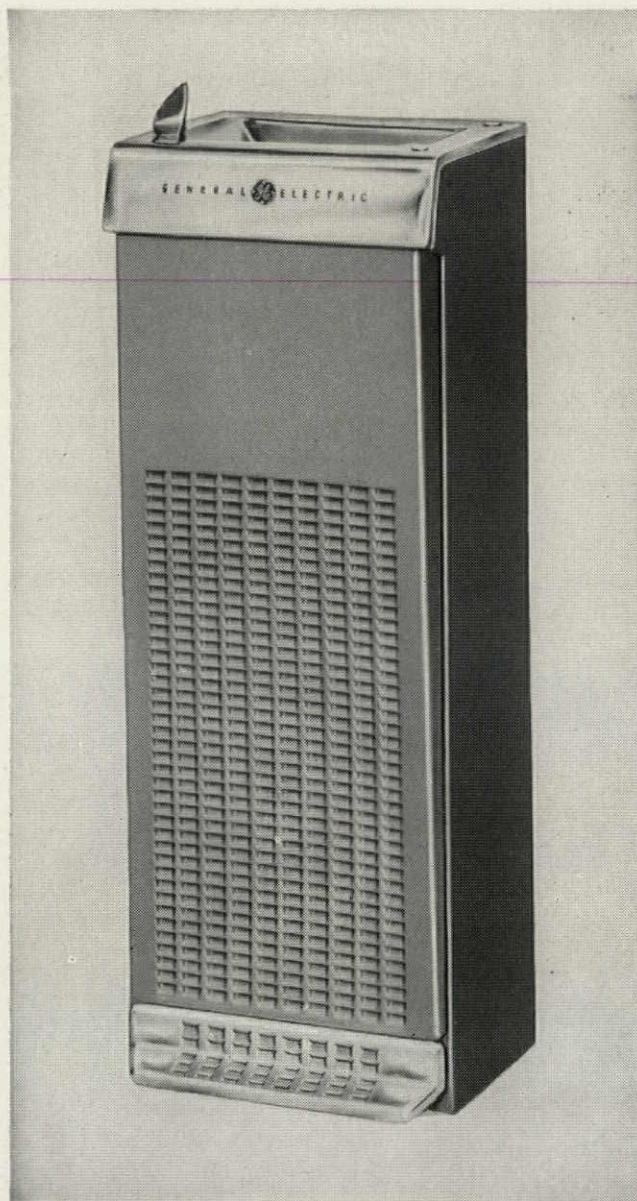
Simple, modern styling with louvered front. Hammered soft gray finish lends itself to every interior.

compact

Take up to 30% less floor space. Fit easily in shallow corners. Over-all depth is up to 5" less than other makes.

and thrifty

General Electric engineering for maximum efficiency cuts water and electricity bills. Operating cost is only pennies a day.



WATER COOLERS

for offices, stores, institutions and factories

These features make the big difference:

- 1. Full-width foot pedal** for easier water control.
- 2. Anti-splash basin** prevents splattering.
- 3. Adjustable dial** has 8 settings for control of water temperature.
- 4. Extra-large stainless steel reservoir** guarantees ample supply on peak demand days.
- 5. Direct rod** to bubbler control assures steady stream of water.
- 6. Snap-off front panel** for easy maintenance.

Whenever you include water coolers in your floor plans, specify General Electric Water Coolers...not only for quality and special features, but because there's a General Electric model to fit your particular requirements. They range in capacity from 2.85 to 21.5 gallons per hour. The standard General Electric 5-year protection plan backs up famous General Electric quality. Call your local General Electric Water Cooler dealer or write to General Electric, Commercial and Industrial Air Conditioning Department, 5 Lawrence Street, Bloomfield, N. J.

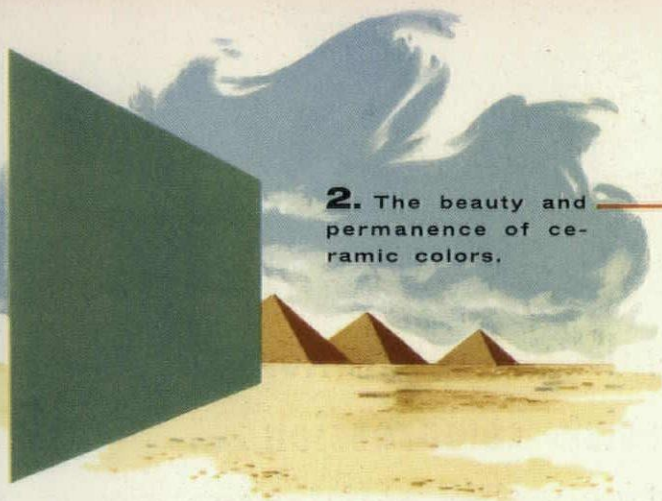
Progress Is Our Most Important Product

GENERAL  ELECTRIC

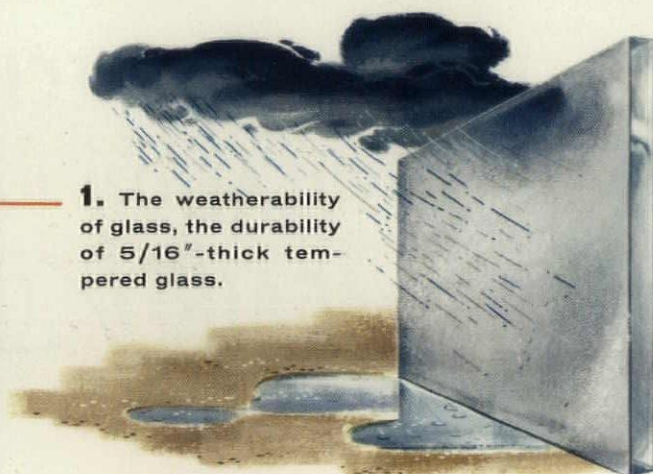
Announcing

HUETEX

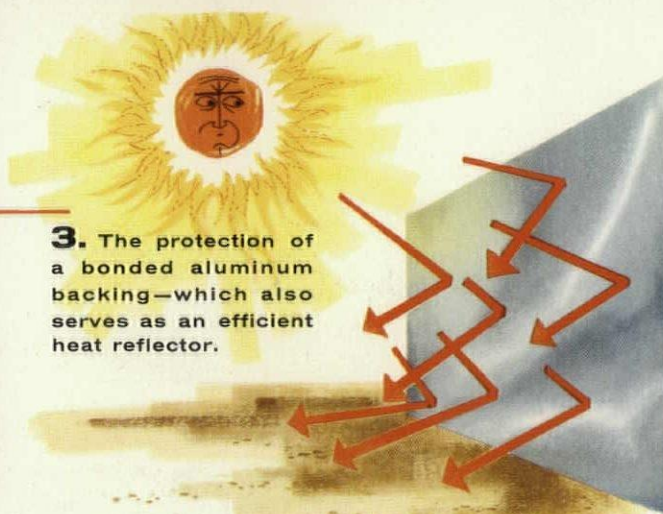
—aluminum-backed,
enameled glass for
curtain wall spandrels



2. The beauty and
permanence of ce-
ramic colors.



1. The weatherability
of glass, the durability
of 5/16"-thick tem-
pered glass.



3. The protection of
a bonded aluminum
backing—which also
serves as an efficient
heat reflector.

It's all fused into one unit for a combination of rich, permanent color, pleasing surface texture and reflective insulation.

The uniformly textured surface of the patterned glass subdues bright reflections.

It's TEMPERED. *Huetex* is tempered to a mechan-

ical strength of 3 to 5 times that of regular glass of the same thickness; 6 to 8 times the impact strength.

Huetex can be used with a variety of framing systems and insulation of your choice. For further information, write to Libbey-Owens-Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.

HUETEX GLASS by Blue Ridge



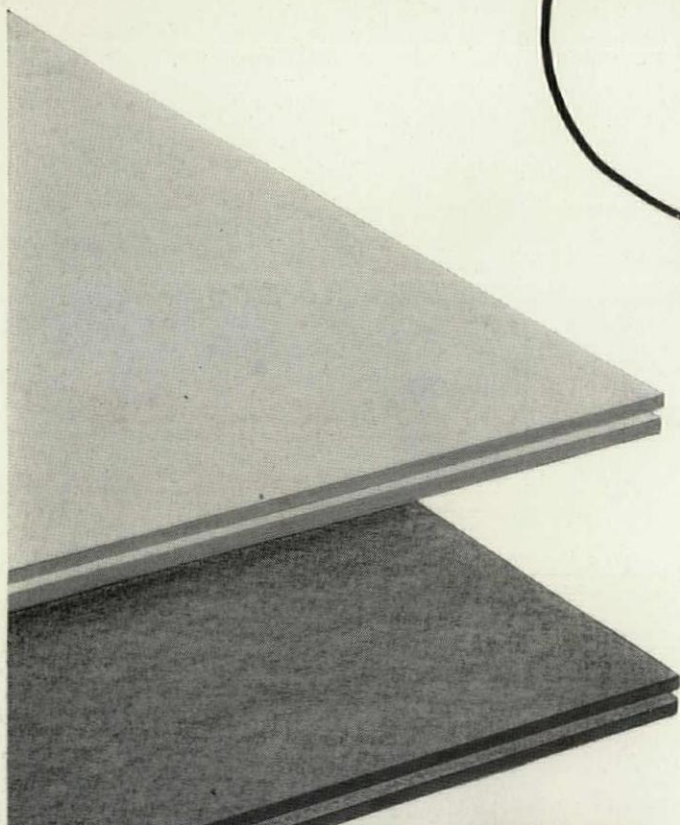
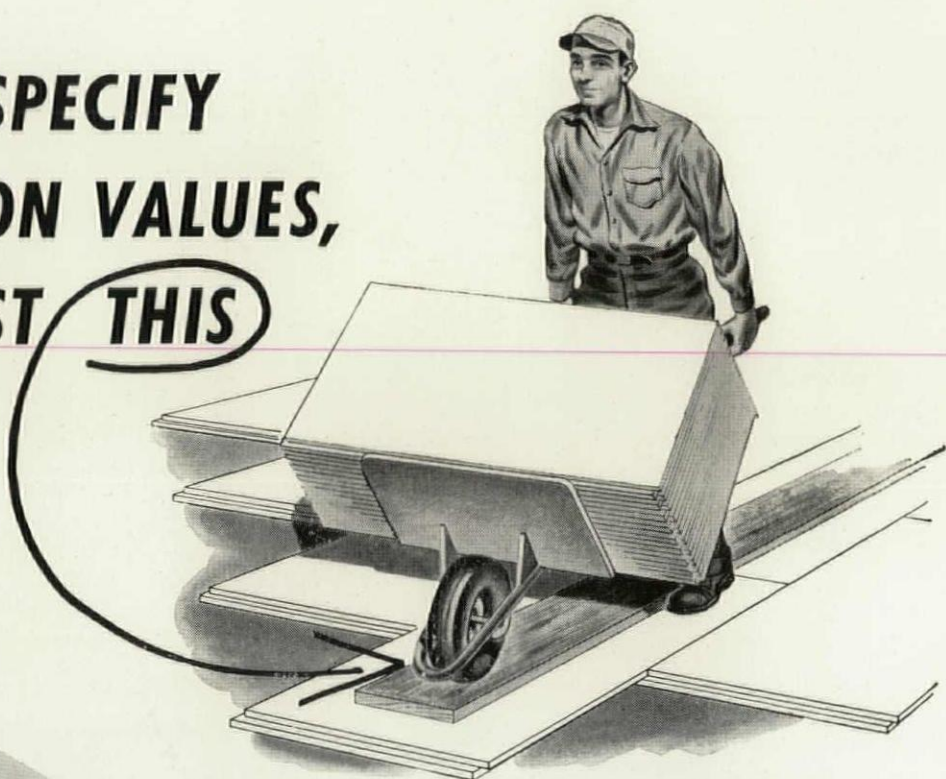
Made by BLUE RIDGE GLASS CORP., Kingsport, Tennessee • Sold by LIBBEY-OWENS-FORD GLASS Distributors and Dealers



IN 12 BEAUTIFUL STANDARD COLORS OR CUSTOM-MADE TO YOUR COLOR SAMPLE



**WHEN YOU SPECIFY
ROOF INSULATION VALUES,
GUARD AGAINST **THIS****



Gold Bond Roof Insulation Board is quickly installed; available in natural or asphalt coated finish; square, shiplap or offset edges.

Gold Bond Roof Insulation Board resists compression . . . retains insulating efficiency

Make sure that construction traffic can't squeeze insulation value out of the roof board you specify. Gold Bond Roof Insulation Board stands up under loaded wheelbarrows, heavy workmen's footprints, sharp-rimmed buckets of asphalt. It delivers the insulation value you specified for the job. And that's only one of its advantages:

It is moisture-resistant. Each fibre is impregnated with water-resistant resin. It is also available with full asphalt coating . . . further protection of full insulating value for your job.

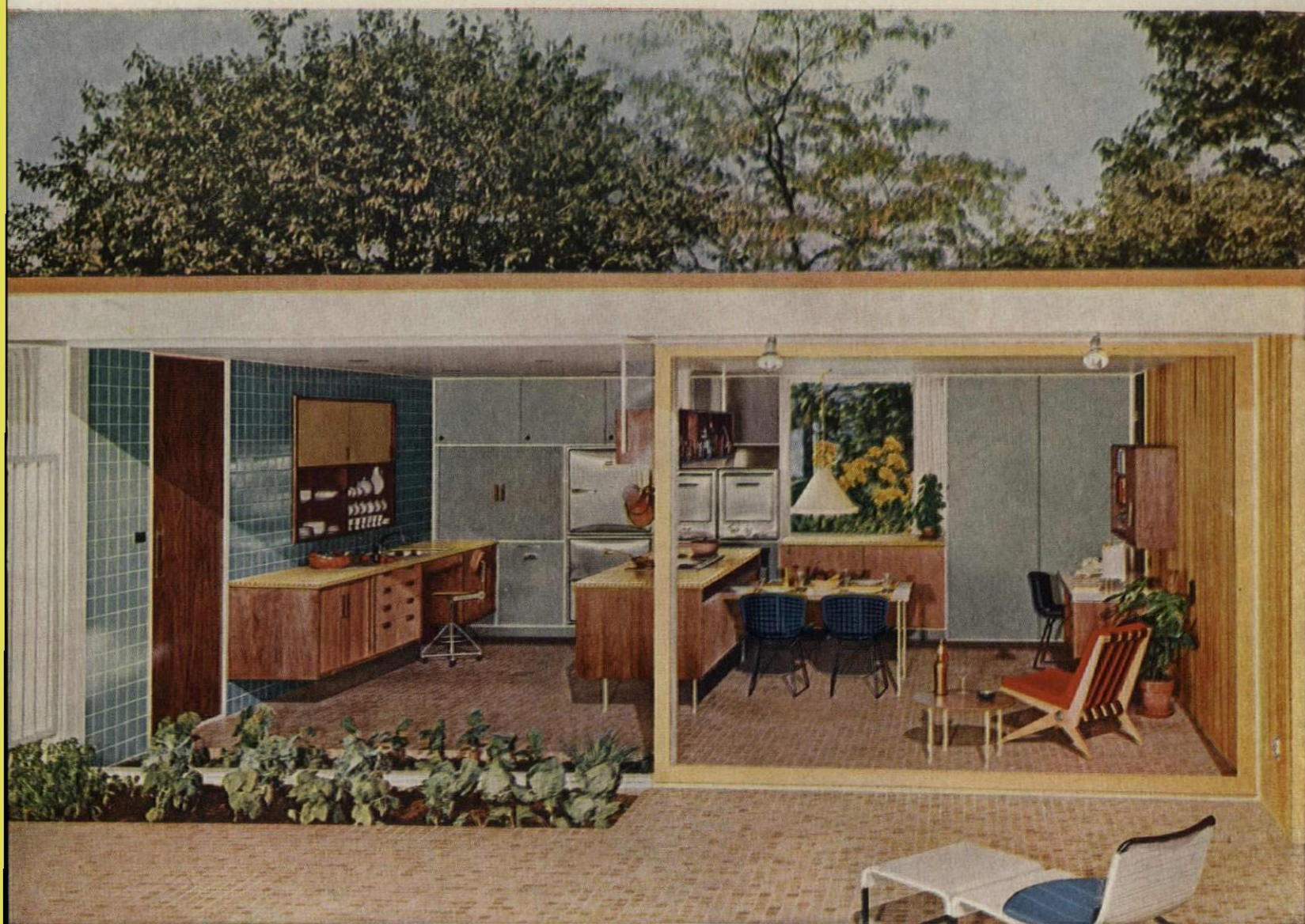
Gold Bond Roof Board has low absorption of hot pitch or asphalt — another safety factor for insulation values. Its smooth surface can be mopped quickly and easily to give maximum coverage of the bonding material and to hold down application costs, too!

See Sweet's Catalog under index 10a/Na for further data, or write National Gypsum Company, Dept. AF-76, Buffalo 2, N.Y.

INSULATION BOARD PRODUCTS

NATIONAL GYPSUM COMPANY

Gold Bond®
BUILDING PRODUCTS



Design for a modern kitchen by Huson Jackson, A.I.A.

"CERAMIC TILE MAKES THE DIFFERENCE... EASY TO WORK WITH...RELAXING TO LIVE WITH..."

Huson Jackson

To help create a warm functional kitchen, Architect Huson Jackson used ceramic tile . . . and captured this rare combination for work-free convenience and relaxed living.

The semi-separation of the breakfast area—to the right of the ceramic tiled cooking island—affords a pleasant place for eating and relaxation. In the kitchen section an aqua tone ceramic tile wall from floor to ceiling keynotes an easily cleaned, colorful work center. The tiled counter tops and drainboards guarantee lifelong service and economy because ceramic tile won't burn, scratch or stain.

To answer the rugged demands of family living, a ceramic tile floor is used throughout—linking kitchen and outdoor


patio into a single attractive living space when the sliding window wall is open. Specify a ceramic tile floor and you give your client an easily cleaned floor that lasts the life of his home.

Ceramic tile helps you offer your clients unique benefits: custom designs from standard tiles, minimum maintenance and lifetime economy. This is true whether you specialize in residential, commercial or institutional projects. You choose from a broad range of colors, surface textures and sizes. And don't forget to explore the savings made possible by adhesive installations. This type of installation is ideal for many dry wall surfaces.

The Modern Style is



TILE COUNCIL OF AMERICA, Inc., Room 3401, 10 East 40th St., N.Y. 16, N.Y. or Room 933, 727 W. 7th St., Los Angeles, Calif.
PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co.
 Cambridge Tile Mfg. Co. • Carlyle Tile Co. • Dover Ceramic Co. • General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co.
 Mosaic Tile Co. • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pomona Tile Mfg. Co. • Ridgeway Tile Co.
 Robertson Mfg. Co. • Royal Tile Manufacturing Co. • Sparta Ceramic Co. • Stylon Corp. • Stylon Southern Corp. • Summitville Tiles, Inc.
 United States Ceramic Tile Co. • Winburn Tile Mfg. Co.



A NEW KIND OF ARCHITECTURE WAS BORN HERE

Several years ago, Alcoa® dared a venture into architecture's never-never land.

The venture: a 30-story headquarters building that ignored many architectural conventions by employing *aluminum* as a primary building material. Wherever aluminum could be used, Alcoa used it . . . walls, windows, ductwork, piping, hardware, trim, electrical system.

The response of architects and builders was immediate, spectacular, far-reaching. Here was a way to unfetter ideas that had long sought expression. Here was a new medium, a new dimension . . . less restricting, far more fluid!

Result: hundreds of aluminum-skinned buildings have been completed or are under construction . . . buildings of startling conception, yet wonderfully practical . . . more gracious, more spacious, superbly comfortable.

Everything we predicted for aluminum as a basic building material has come true: faster erection . . . reduction in steel requirements . . . lower cost foundations . . . more floor space . . . lower heating and cooling costs . . . virtual elimination of exterior maintenance.

This pioneering taught us lessons that can be invaluable to those projecting new buildings. Our architectural consultation service is at your disposal. Have your architect or engineer call any Alcoa sales office. Or write ALUMINUM COMPANY OF AMERICA, 1887-G Alcoa Bldg., Pittsburgh 19, Pa.

ARCHITECT: Harrison & Abramovitz, New York, N. Y.
ASSOCIATED ARCHITECTS: Altenhof & Bown, Pittsburgh, Pa.
Mitchell & Ritchey, Pittsburgh, Pa.
GENERAL CONTRACTOR: George A. Fuller Co., New York, N. Y.




Your Guide to the Best
in Aluminum Value



THE ALCOA HOUR, Television's Finest Live Drama
Alternate Sunday Evenings

The Alcoa Building overlooking
Pittsburgh's new Mellon Park



Memo to architects

The adjoining advertisement appears in the July issue of *Fortune* magazine. It is addressed to men with whom you may be doing business. Alcoa wants to seat the thought that aluminum is a tested, practical, economical building material. Since the completion of the Alcoa Building, great strides have been taken in the use of aluminum in building. Ingenuity of the architect, pioneering of the contractor and fabricator, Alcoa research and development . . . all have made this enormous progress possible.

One recent example is the use of color in

exteriors through the medium of Alcoa® Aluminum Architectural Color Finishes. These handsome finishes open a new dimension in design, a new freedom in functional expression.

New literature on Alcoa Architectural Color Finishes and a wealth of material on aluminum in building is available to you. Or, if you have a new problem, the Alcoa Architectural Development Division is ready to assist you. Call your nearest Alcoa sales office or write ALUMINUM COMPANY OF AMERICA, 1887-G Alcoa Building, Pittsburgh 19, Pennsylvania.

INSTALLATION . . . What's the best method to install an acoustical ceiling?

Before selecting an installation method, the type of acoustical material specified, construction details, and often budget restrictions must all be considered.

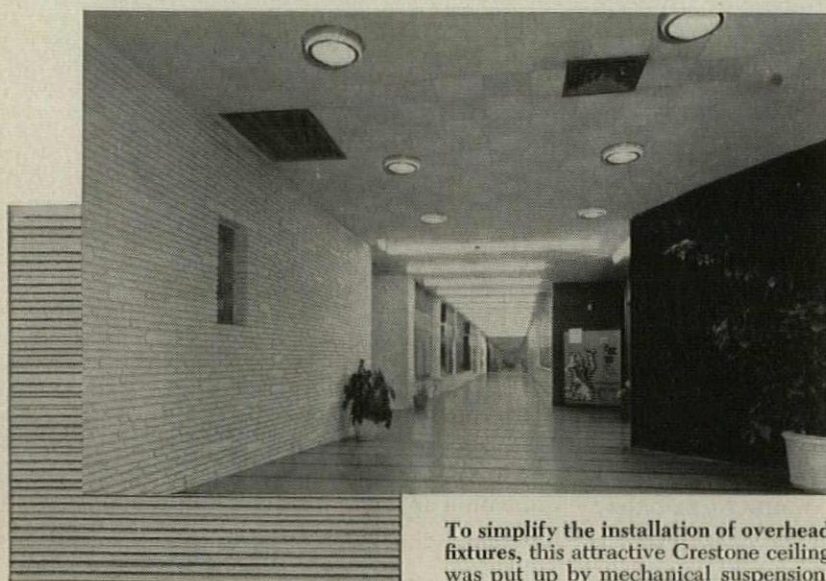
Where an existing ceiling is level and in good condition, cementing is usually the best way to put up acoustical tiles like Armstrong Cushiontone, Travertone, Minatone, Crestone, and Corkoustic. A fast, economical technique, cementing requires fewer installation materials and less labor than any other method.

If overhead pipes and wiring must be concealed, mechanical suspension systems are generally specified and can be used with any Armstrong Acoustical Material. This method simplifies the installation of recessed ceiling fixtures. And when kept as low as practical in corridors, suspended ceilings minimize the conduction of sound throughout this area.

In frame construction, the most economical installation method is to apply Armstrong Cushiontone to wood furring strips by nailing or screwing. Where an incombustible material is required, Armstrong Minatone can be screwed to a gypsum sheathing base.

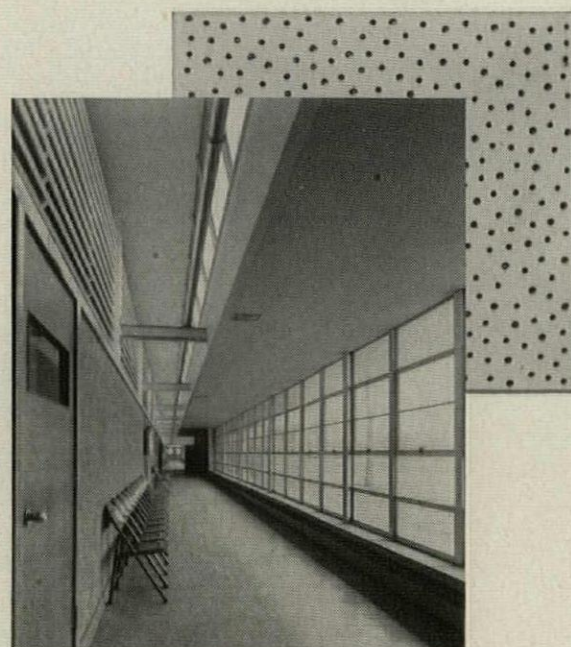
Because every job has its own requirements, Armstrong provides a wide variety of sound-conditioning materials in many styles and with varying characteristics. These materials are put up by Armstrong Acoustical Contractors, men thoroughly familiar with all installation techniques. Your Armstrong Acoustical Contractor will be glad to give you full details on the entire line of Armstrong sound-conditioning materials.

For the free booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4207 Rooney Street, Lancaster, Pennsylvania.



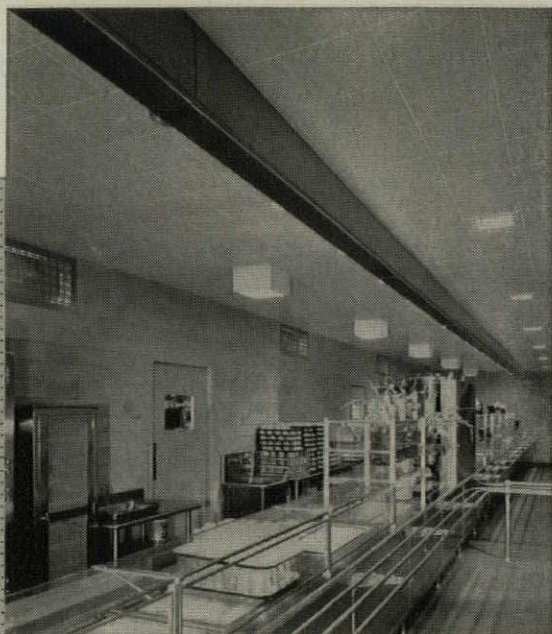
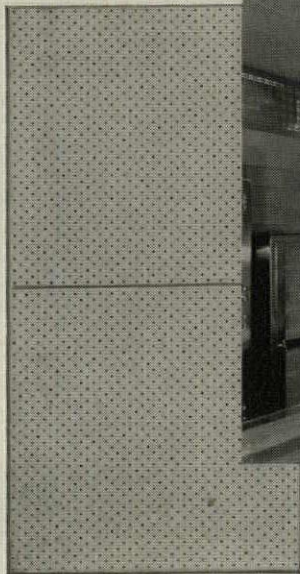
To simplify the installation of overhead fixtures, this attractive Crestone ceiling was put up by mechanical suspension. The newest material in the Armstrong Line, Crestone's attractive styling blends well with other materials in this modern hotel arcade.

. . . *Seville Hotel,
Miami Beach, Florida*

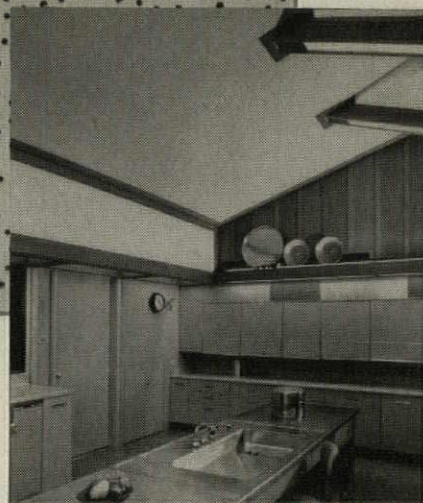
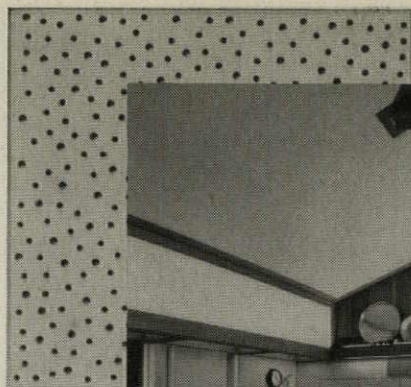


To meet design requirements, the Armstrong Cushiontone ceiling in this corridor is dropped to a height of 8'. This prevents noise but allows light and air to pass through the louvered partitions into the classrooms.

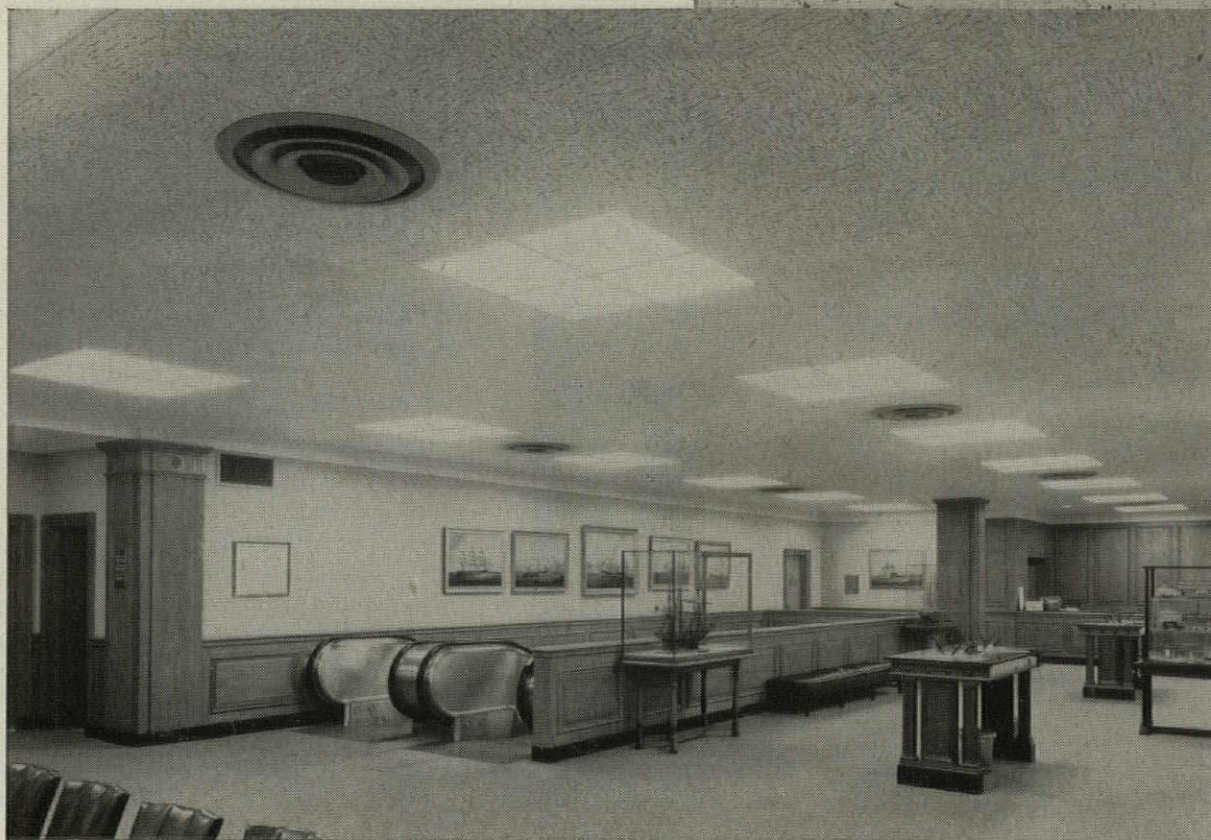
. . . *Aiken Elementary School,
Alexandria, Louisiana*



To hide unsightly pipes, duct, and wiring, a suspended ceiling of Arrestone has been used in this cafeteria. Besides soaking up 85% of the sound that hits it, Arrestone is incombustible and easy to clean.
*... Metropolitan Museum of Art,
 New York, N. Y.*



To quiet noise in homes, Full Random* Cushiontone can be installed by either stapling, nailing, or cementing. The attractive Cushiontone ceiling blends with the décor and adds relaxing quiet to this modern kitchen.
*... House Beautiful's Pace Setter,
 Dallas, Texas*



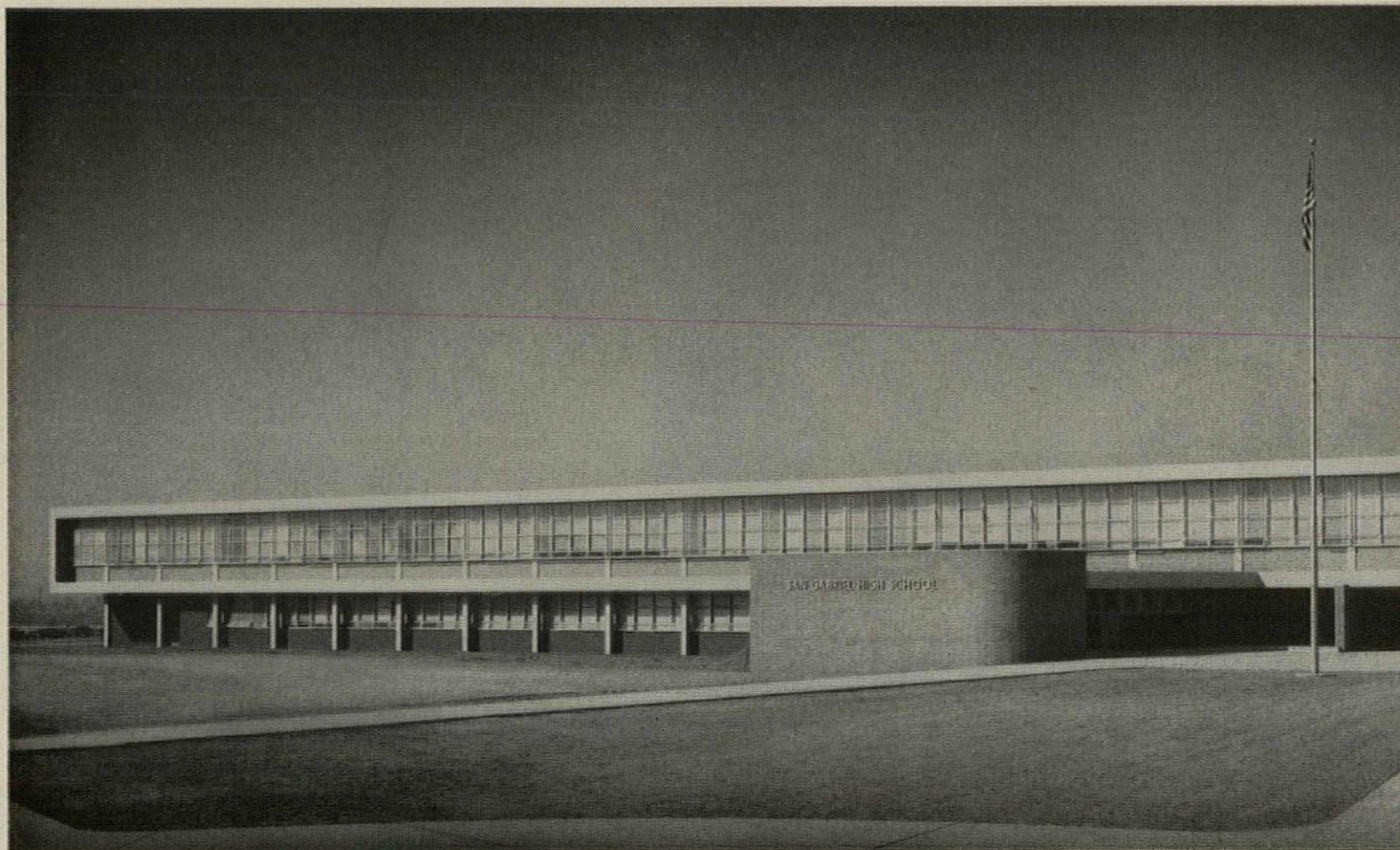
To satisfy fire-safety codes, the noise-quieting ceiling of Armstrong Travertone in this new bank building was cemented to a plaster base.
*... The Seamen's Bank for Savings,
 New York, N. Y.*

Armstrong

ACOUSTICAL MATERIALS

Cushiontone® • Travertone* • Arrestone® • Minatone®
 Corkoustic® • Crestone* • Perforated Asbestos Board

*TRADE-MARK



*ACRES of Pittsburgh Glass
brighten this dramatic new school*



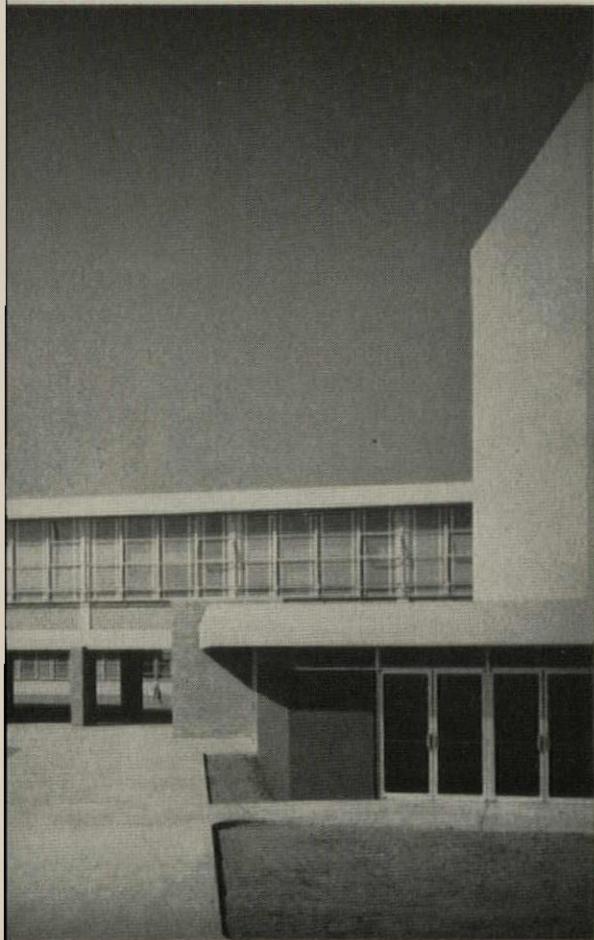
IT'S THE SAN GABRIEL HIGH SCHOOL, near the home of the famous San Gabriel Mission in California. The architectural theme was inspired by Plato: "Knowledge which is acquired by compulsion has no hold on the mind."

What an important place glass plays in this design concept! In the words of architects Smith Powell & Morgridge, Los Angeles, the acres of Pittsburgh Plate Glass "create their own environment and seasonal displays." Most of the glass used to achieve this end was $\frac{1}{4}$ " Pittsburgh Polished Plate Glass and Pennvernion Window Glass.

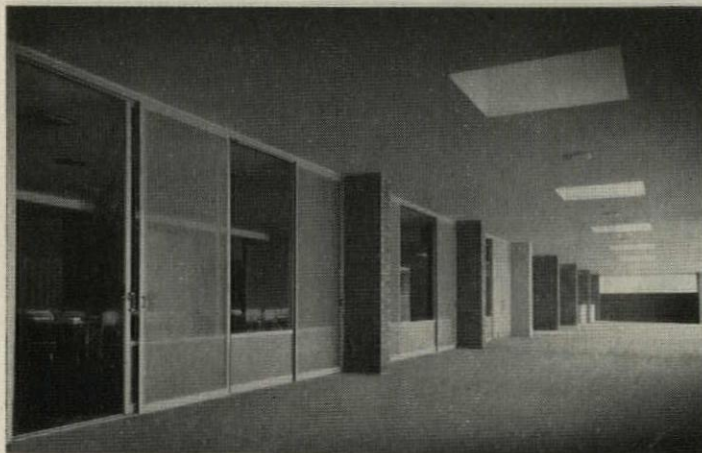
There are some interesting design ideas here. "Borrowed light" is one. The upper part of partitions between classrooms and hallways is glazed, so that classroom light is diffused into the halls. Also, the area above the lockers (which are located outside, on balconies) is glazed to make use of *that* light, too.

See what the skillful use of glass can do to a school!

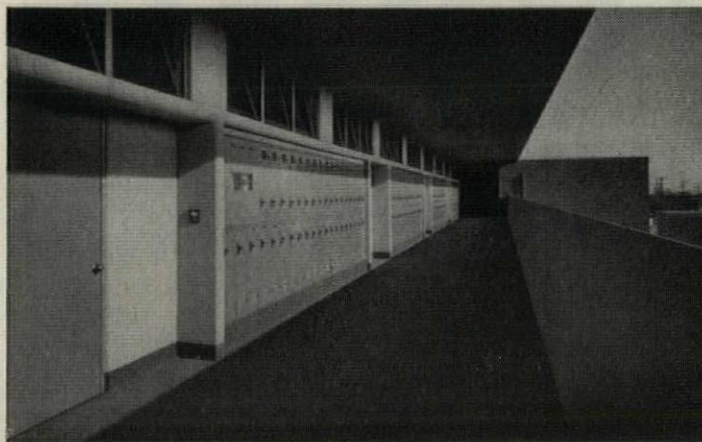
"Borrowed light." Classroom is behind wall at the left.



Gym. Clerestory windows get rid of the gloom.



Cafeteria. Plate glass doors roll back for outdoor eating.



Outside lockers. Notice glazing above them.

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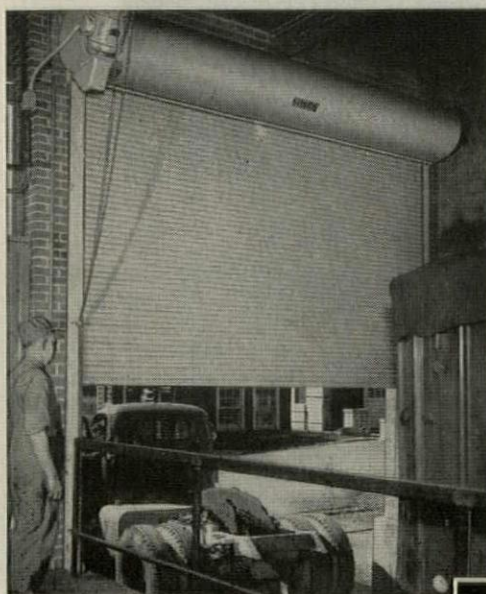


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EXCERPTS *cont'd.*

Architectural jobs are obtained in the usual manner but greater attention is paid to public relations, particularly by large offices, where lack of continuity of jobs might throw the whole organization out of gear. Public relations are to a large extent helped by the press. The real estate pages of the *New York Times*, for instance, constantly feature new buildings and the names of the architects responsible for them. Some architectural magazines are designed not only to serve the architect but to a large extent the contractor and the layman. The general public is very much more aware of contemporary architecture and the work of individual architects. *TIME* and *LIFE* magazines feature buildings frequently. Modern architecture is not only accepted, but is used as an advertisement to convince the public that a particular firm is very much to the fore because of its use of well-designed buildings and the most up-to-date services.

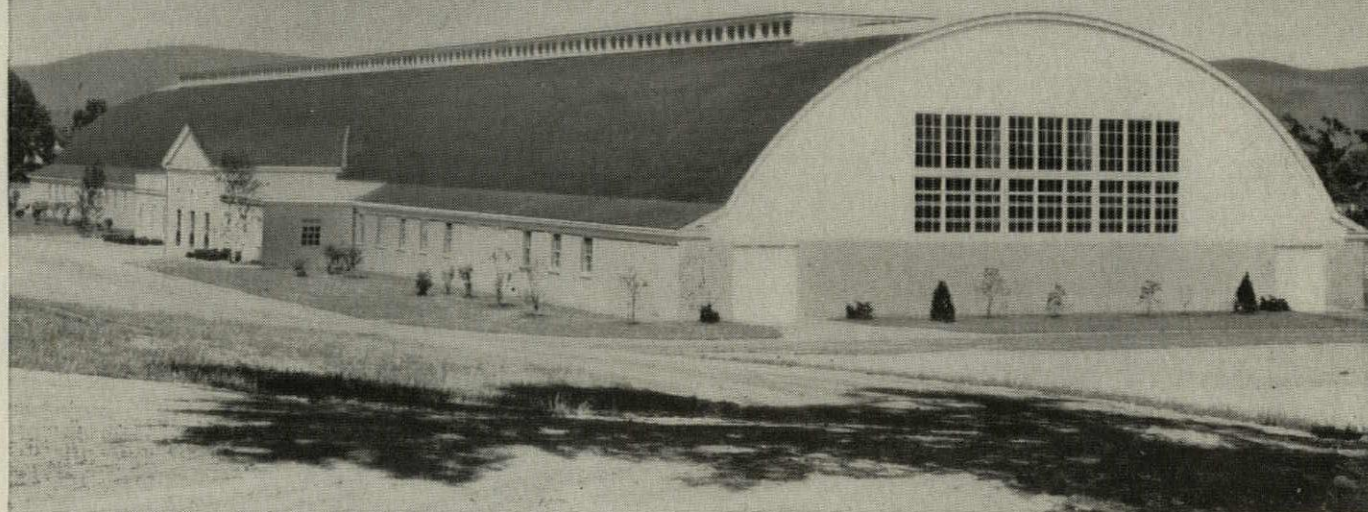
Americans are brought up with the idea that increase of efficiency and productivity will result in higher standards of living. This is reflected in architectural offices. Standards of lighting (100 lumens on the board), equipment, and comfort are very high indeed, and result in an excellent standard of draftsmanship and speed.

Most offices are in large modern buildings with high rents. This permits the most efficient layout and good standards of daylighting. It is usual to have an administrative section, a plan room, a specification room, a conference room, the partners' rooms and the main office in which all drawing is done. The overheads of an average office are very high, and an architect in America must be an efficient organizer to survive. This is usually achieved by either combining the necessary qualities in partnerships, or by employing an efficient office manager.

Preliminaries and working drawings are produced by a group who stay on the same job from beginning to end. Each person in the group is given a task for which he is wholly responsible. The person in charge of the group is responsible for the whole job, and makes sure that all the points are settled, so that no one has to stop and wait for decisions, and the drawing may proceed with very little obstruction. In general, there is very large delegation of responsibility and this makes not only for greater efficiency in the office but also for a spirit of cooperation and a sense of achievement.

The quality of architectural design will depend on the general outlook of an office and the talent of the designers, but under the American system good coordination between design and construction is taken for granted.

Anybody for tennis...or hockey?



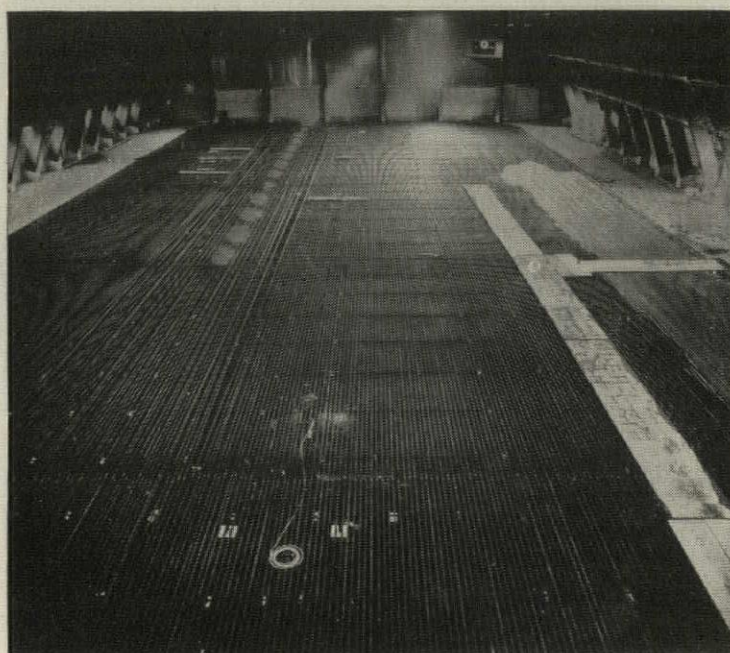
Dual rink-court freezes ice fast with 10 miles of steel pipe



What is in summer a court for tennis and other sports and in winter an artificial ice rink -- the first in Vermont -- is the proud acquisition of Middlebury College. In the huge memorial Field House and Gymnasium, about 52,000 ft. of 1-inch steel pipe assures rapid, solid freezing of the 85' x 185' rink when the asphalt topping of the sport court is flooded with water.

As at Middlebury, most of the collegiate and professional ice rinks of the country depend on steel pipe to carry the refrigerant . . . additional demonstration that *steel pipe is first choice* for plumbing, radiant heating, fire sprinkler systems, snow melting, structural applications, oil, gas and water lines. In fact, steel pipe is the most widely used pipe in the world!

Several interesting booklets are available for the asking . . . "Steel Pipe in American Life," "Radiant Panel Heating with Steel Pipe" "Steel Pipe Snow and Ice Removal Systems."



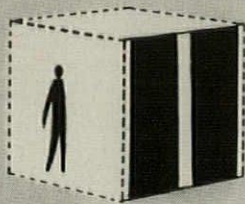
Committee on
STEEL PIPE RESEARCH

AMERICAN IRON AND STEEL INSTITUTE
150 E. 42nd ST., NEW YORK 17, N. Y.

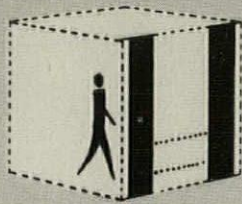
**Steel Pipe
is First Choice**



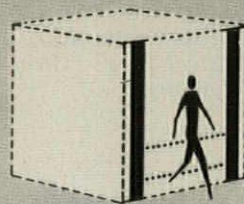
HOW TRAFFIC SENTINEL WORKS WITH SINGLE PASSENGER (ALSO HANDLES 10-15 WITH EQUAL EASE)



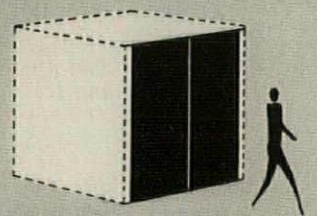
1. Car arrives



2. Doors open—
Traffic Sentinel
beams go "on"



3. Passenger leaves car



4. Doors close almost
immediately

How Invisible Beams of Westinghouse Traffic Sentinel Hold Operatorless Elevator Doors Open Until Entrance is Clear

TEST BY BETTY FURNESS — (see photo of
delicately balanced eggs on spoons showing how
doors are held motionless until entrance is clear.)

HERE'S PROOF!

... Westinghouse operatorless elevator doors "lock open" as people pass through the entrance
... absolutely no false door starts to startle passengers
... even persons standing in doorway have no fear of doors starting toward them.

HOW TRAFFIC SENTINEL WORKS

Traffic Sentinel controls doors according to the number of people moving in and out of elevators by:

1. Projecting invisible light beams across the car entrance which—
2. Operate in conjunction with door controls to—
3. Automatically adjust the length of time the doors remain open . . .
4. Passengers entering or leaving the cars interrupt the rays and—
5. Once rays are re-established, the doors start to close almost immediately—but
6. If other passengers are following—they continue to break the rays—and doors stay open until last person is safely through entrance.

OPERATES WITH 1 PERSON OR 15

With Traffic Sentinel, the lighter the traffic, the shorter the door-open time. During heavier traffic, the doors remain open long enough to permit unhurried loading or unloading of the car . . . all under conditions that impart a complete new sense of security and freedom from annoyance to all passengers.

NO PREMATURE CLOSINGS— ALL UNNECESSARY DOOR- OPEN TIME ELIMINATED

Traffic Sentinel operates more efficiently than a trained attendant, "sensing" passenger movement and controlling doors accordingly. This precise adjustment to traffic flow does away with all unnecessary door-open time—speeds elevator service throughout the building.

MORE ABOUT TRAFFIC SENTINEL?

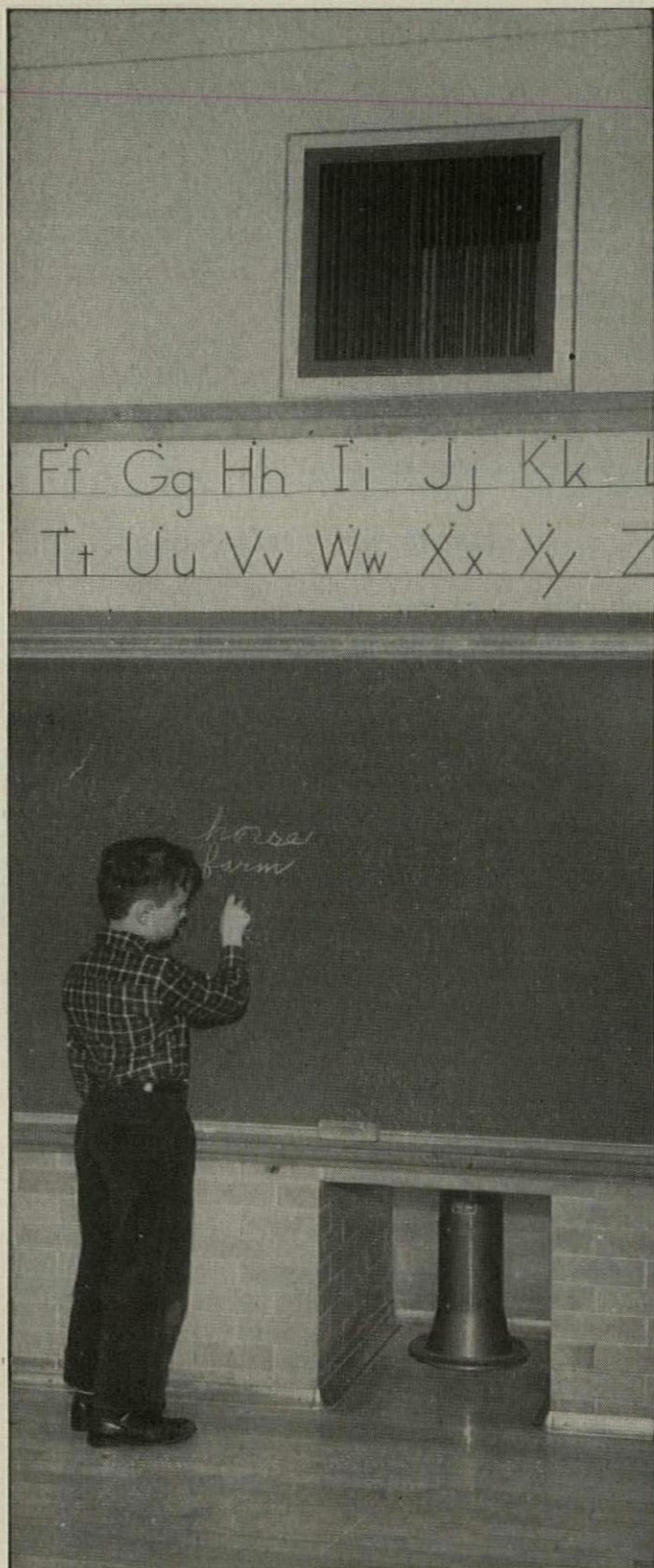
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Westinghouse Elevators

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How new heating and ventilating system



Dunham VARI-AIR Unit, concealed in mixing flue behind blackboard, mixes fresh and recirculated air—silently diffuses it to classroom through overhead grille.

Dunham VARI-AIR
designed to help the
“hard pressed” budget . . .
and save valuable
floor space

SCHOOL construction costs can't go anywhere but down when Dunham VARI-AIR heats and ventilates classrooms. This new and simple system satisfies all health and comfort standards . . . does it at a cost that meets with the full approval of any school board member.

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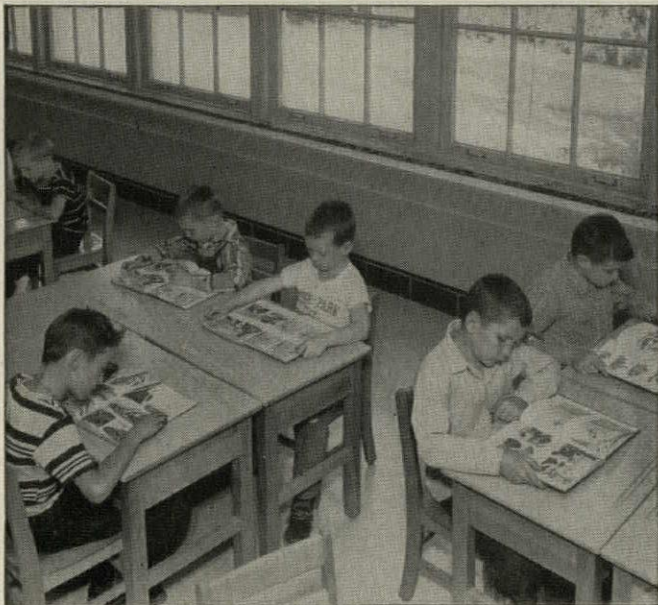
Offers Numerous Advantages

Lower Costs: Dunham VARI-AIR eliminates need for in-the-room cabinet ventilators . . . provides greater savings in classroom heating construction costs. Total absence of complex controls saves both first and maintenance costs.

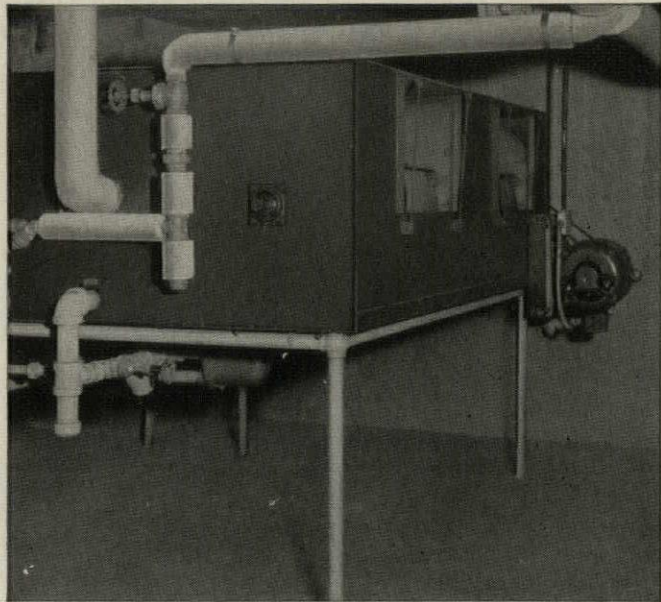
Minimum Temperature Variations: Dunham's centralized temperature control system holds room temperatures within prescribed limits by automatically compensating for weather change and heat loss.

Space Saver: No floor space in classroom is given over to either heating or ventilating with a Dunham VARI-AIR system.

cuts schoolroom construction costs



Dunham Finned-Pipe Radiation runs along outside walls, under windows to eliminate chilling downdrafts, save premium classroom floor space.



Dunham Heating and Ventilating Unit pulls in outside fresh air and tempers, filters and discharges it through a tunnel or ceiling plenum to VARI-AIR Units.

How VARI-AIR Operates

Only three primary parts to the system. VARI-AIR Units are concealed in wall space, mix fresh and recirculated air and diffuse it into classrooms.

Heating and Ventilating Unit—generally one to the entire system—pulls in fresh outside air, tempers, filters and discharges it through a tunnel or ceiling plenum to the VARI-AIR Unit.

Radiation — Dunham THERMO VECTOR® “along-the-wall” radiation saves floor space and provides all necessary heat whether used with steam or hot water.

For complete information, contact any Dunham Representative or mail the coupon.



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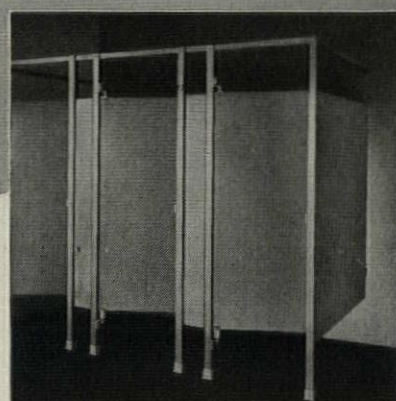
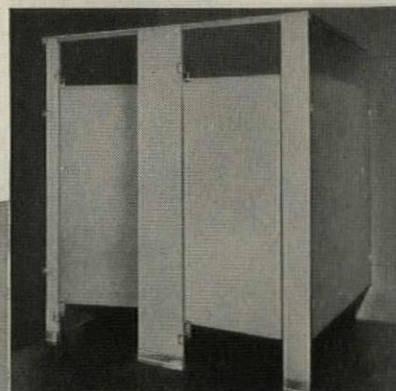
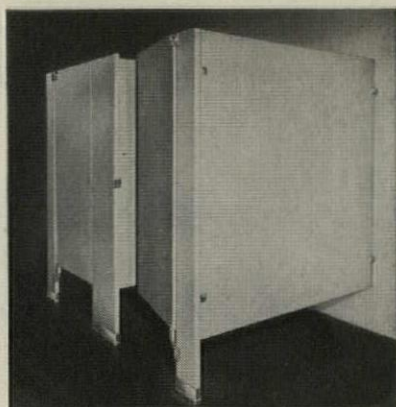
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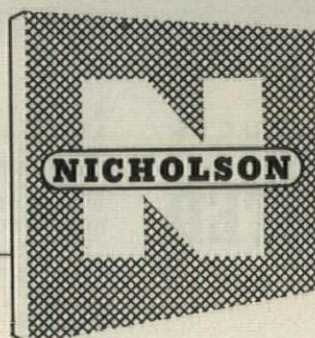
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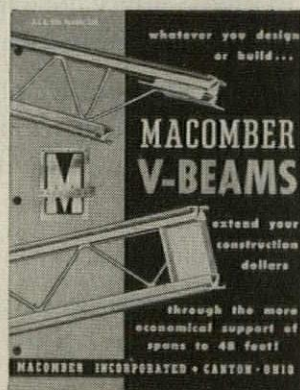
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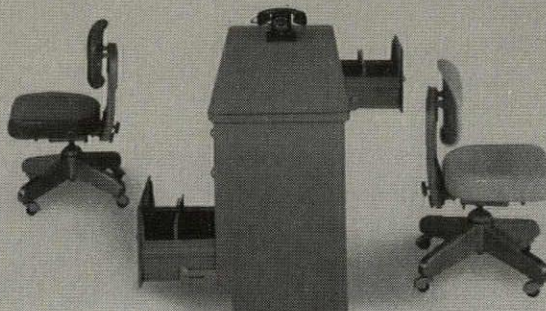
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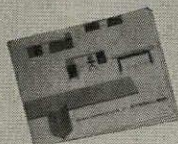


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FORUM

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About this month's FORUM

Behind stories like "The Lender's Influence on Architecture" (which begins on p. 140) there is quite an adventure for FORUM's research staff, because they have to ask people of one occupation questions relating to another occupation.

Lenders are quite obviously used to being asked questions about banking and mortgages but not about architecture, just as architects are used to being asked about anything but banking. On the first round the lenders denied exerting any influence at all on architectural planning or design, and the architects tended to agree that there had been none, at least none on their own jobs.

Yet this answer did not satisfy the editors. They remembered many an individual episode in which the question of lender influence had indeed come up, sometimes forcefully. Based on these episodes they framed new questions, more closely pointed and detailed, for further research. And thereby they gradually penetrated into the situation which you find reported: a situation as complex as one might expect, and of intrinsic interest to anybody engaged in building.

Once again this illustrated how things are in the building field. It is full of people of different occupations, each minding his own business, but all necessary to the total outcome. Rarely does any of these pros have time to explain himself fully to the others. Yet correlated action is needed for a fine result, so understanding each other is a big advantage.

This is true not only of the relationships between architecture and finance but between architecture and technological advances.

Into FORUM's office, for example, there strode one day Mr. Adrian TerLouw, Eastman Kodak Co.'s educational consultant. He asked the editors what they thought "audio-visual education" was. Obliging they muttered something about the use of "audio-visual aids" such as TV, slide films, movies and the like.

"That's just what I thought you would say," countered Ade, and settled down to showing us just how narrow our conception was. The upshot was that the editors understood they were talking with a rare man—the kind that sees across from his own interest and his own occupation to the field as a whole. And the further upshot was a panel discussion with everybody in—architects and teachers, engineers and industry representatives—to swap views. By the time they were through, 13 common misconceptions had been nailed to the door, most of them the result of narrow thinking by those who stick too closely to their own craft (p. 120).

We think you will be interested in that report, too. The fact that you as reader may come from any one of these different professions means that the report has to stand up against many different kinds of experience. It is the architect's job—and ours—to meet them all.

THE EDITORS

SCHOOLS

A special 30-page report



FRESH DESIGN PATTERNS

Some of the best new schools being built in the US are coming out of the Cambridge, Mass. office of a firm called The Architects Collaborative.* With over two dozen bright, modern schools completed or underway around New England, TAC is gradually persuading a region steeped in architectural traditions that there are much better ways of teaching children than putting them in a big new Georgian box with a cupola on top.

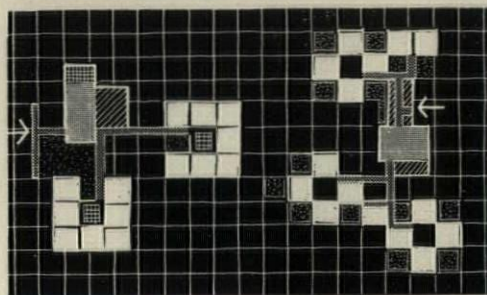
TAC members, like many good designers, approach each school job with two thoughts uppermost: 1) how to build more teaching space for less money, and 2) how to turn it into an environment in which children can enjoy learning. As the following pages show, they are willing to explore almost any avenue that promises to lead toward these twin objectives.

In analyzing their own and other architects' schools, TAC members sometimes play "dominoes" with different colored paper cutouts representing classrooms, utilities, assembly rooms, administrative spaces, covered walkways. These cutouts are first used to help determine the best grouping of these elements for a particular school. The cutouts also form colorful patterns in themselves and have a lighthearted way of turning up in the school itself as decoration: in a checkerboard tile mural near the entrance, in little random compositions of colored tile sprinkled along corridor walls, or in the colorful geometry of a porcelain enamel curtain wall (p. 112).

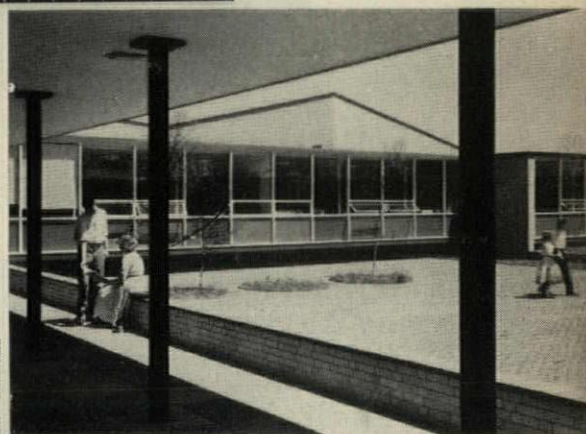
Between preliminary floor planning and final touches, however, come strict cost studies and a search for the most economical methods of construction. As each design develops, its project captain meets periodically with an advisory board of his associates, who come in fresh from other kinds of work to ask pointed questions. Is the site being used to best advantage? Are landscaped outdoor areas introduced into the heart of the plan as visual relief, and as useful centers of school life? Is the character informal, the scale appropriate to the size of the pupils? Are colors gay and harmonious? In short, is it a place children will like?

* JEAN B. FLETCHER LOU'S A. McMILLEN
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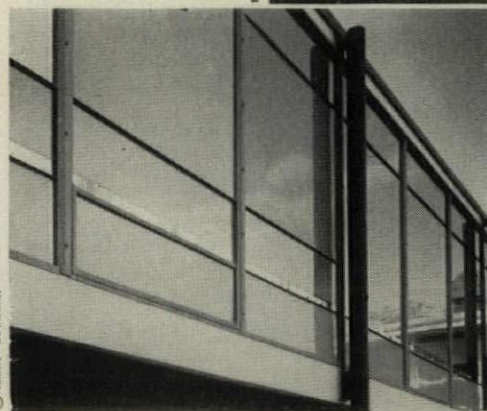
A new New England accent
runs through the many schools of
The Architects Collaborative—
and through their many parts:



... PLANS



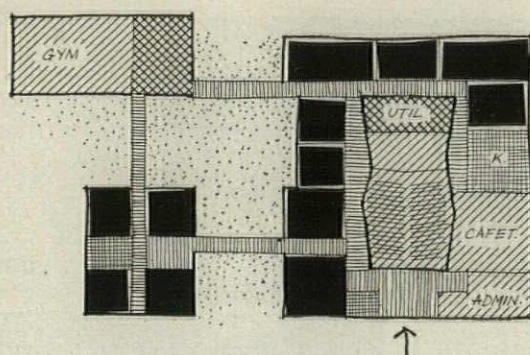
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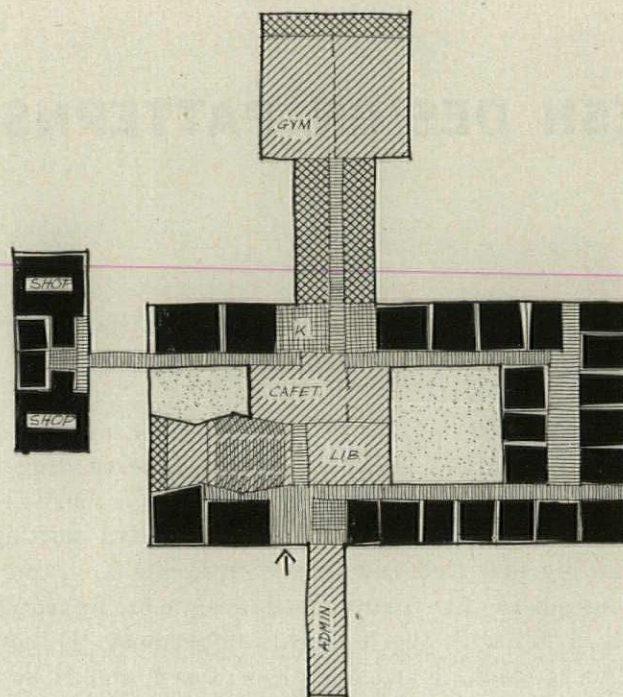
... STRUCTURE



... DECORATION

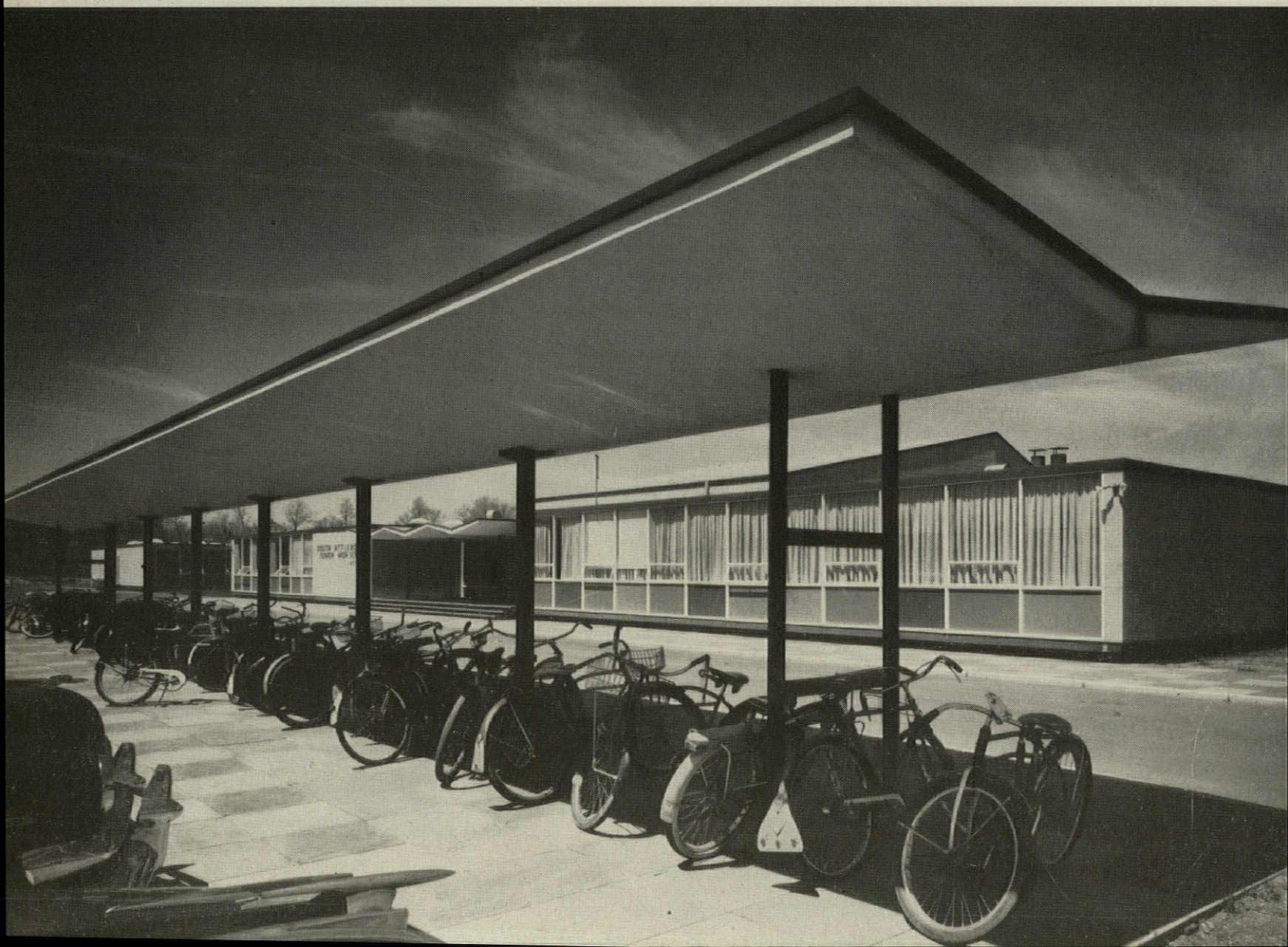


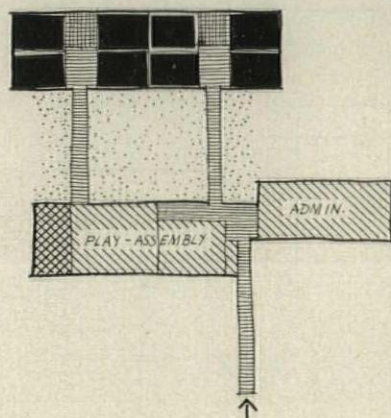
S. ATTLEBORO



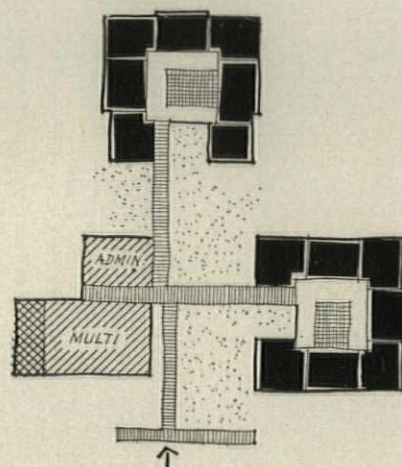
LITTLETON

BEN SCHNALL





WALTHAM

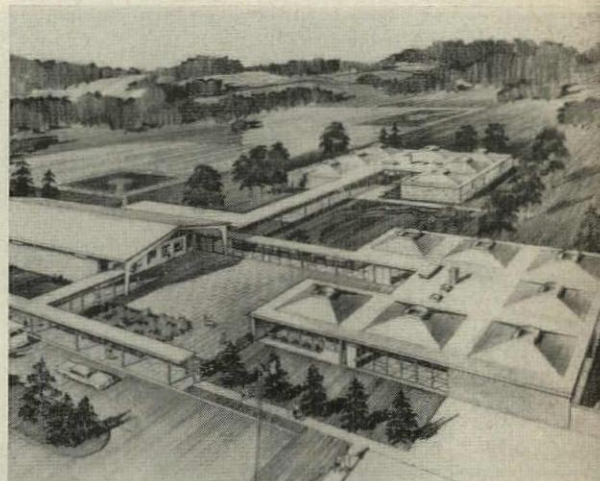


W. BRIDGEWATER

TAC's PLANS: blocks, clusters and courts

Block plans of a junior high at S. Attleboro, Mass. and a high school under construction at Littleton, Mass. show compact grouping for economy, zoning of special or noisy functions as separate wings, and the introduction of landscaped courtyards for light and visual interest where most needed. Photo (left) shows a butterfly canopy for bicycles in front of S. Attleboro.

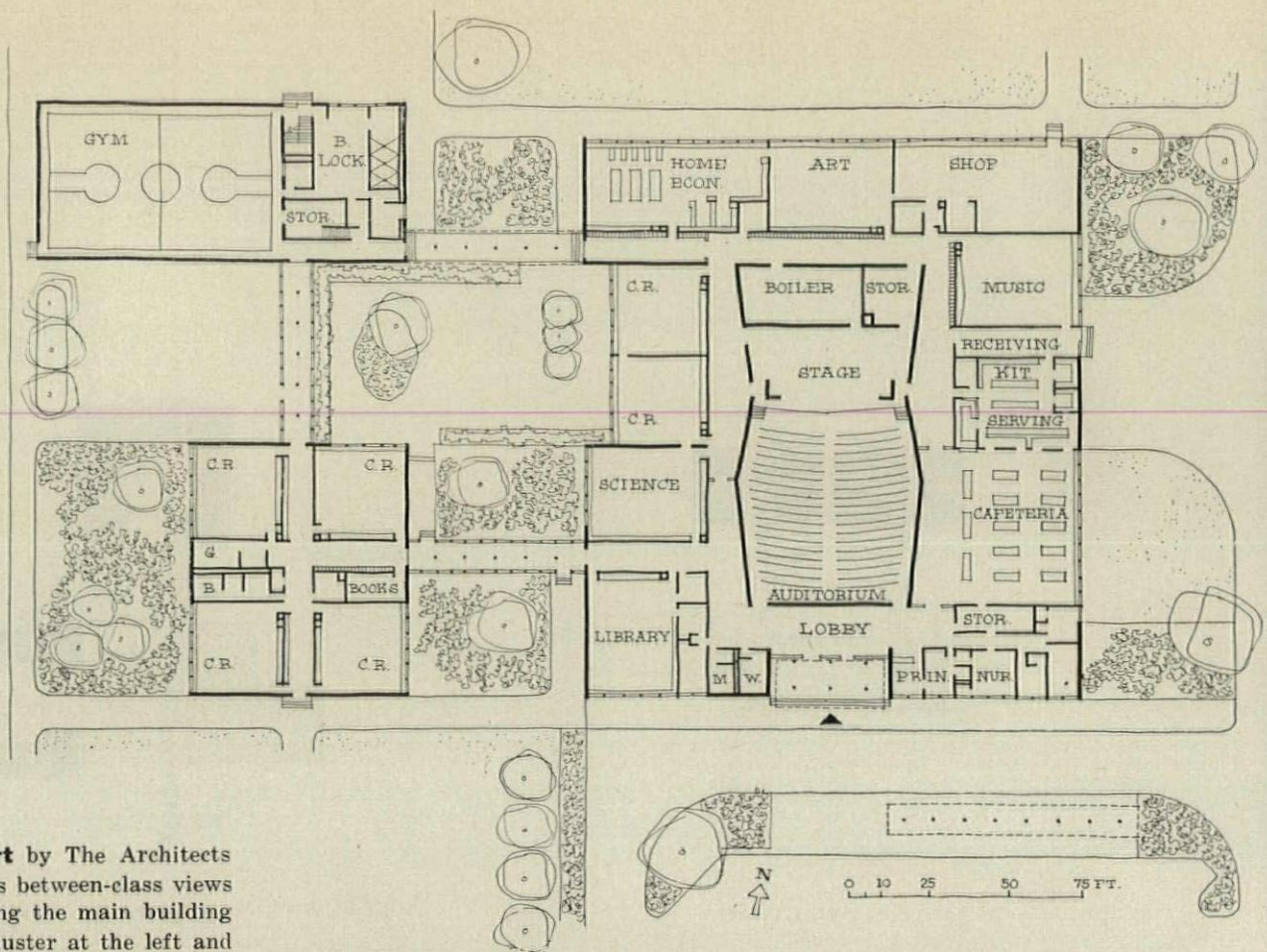
Cluster plans for elementary schools include an adaptation in W. Bridgewater, Mass. of TAC's expandible school designed for *Collier's Magazine*. Here younger and older children will have "villages" of child-scaled huts: classrooms with low outside walls, single 6' x 6' skylights. Multipurpose room is at left.



Two-story clusters at Waltham, Mass. were economically executed in lift-slab. Split-level stairs and bridges link the classrooms with the main building.

© EZRA STOLLER





S. Attleboro's court by The Architects Collaborative provides between-class views from walkways linking the main building with the classroom cluster at the left and gymnasium in background.

BEN SCHNALL





Covered play space and storage (above and right) are tucked under the administration wing of Waltham's Northeast Elementary School where it bridges a gully to the site of a future junior high.



TAC's COURTS:

Pleasant breaks in the middle of school

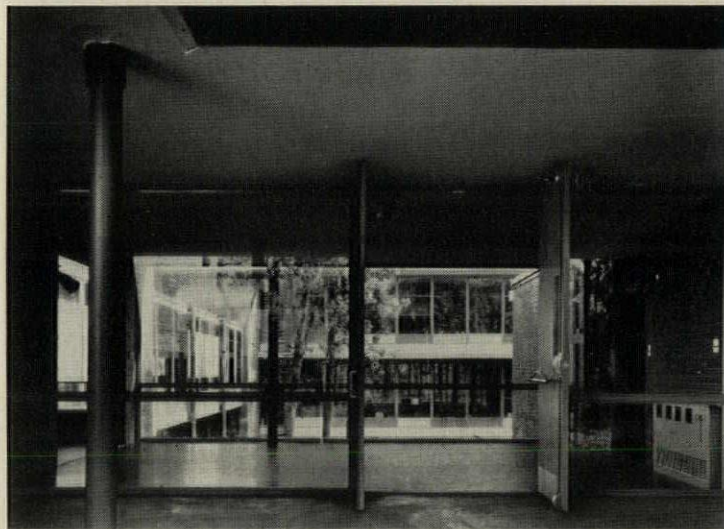
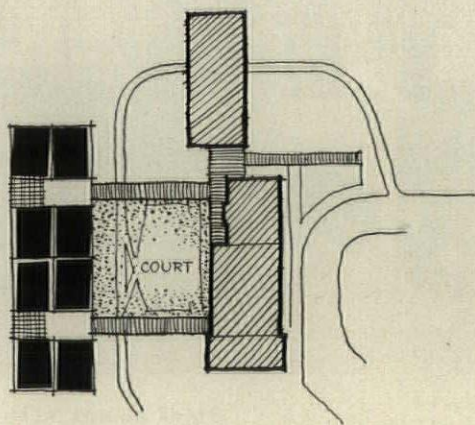
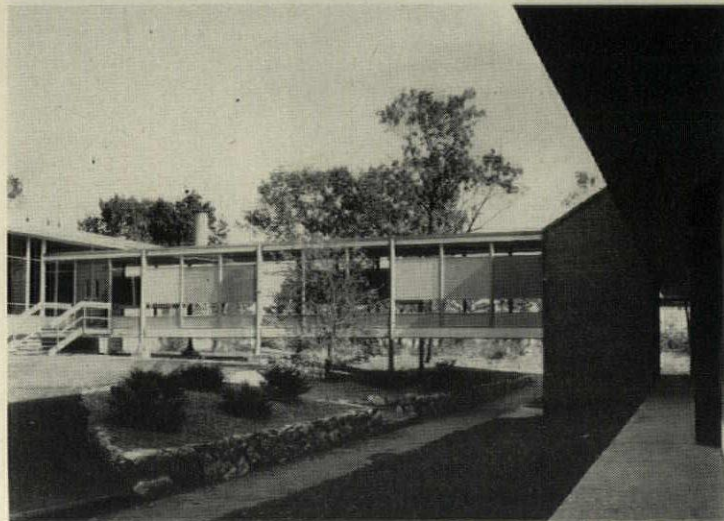
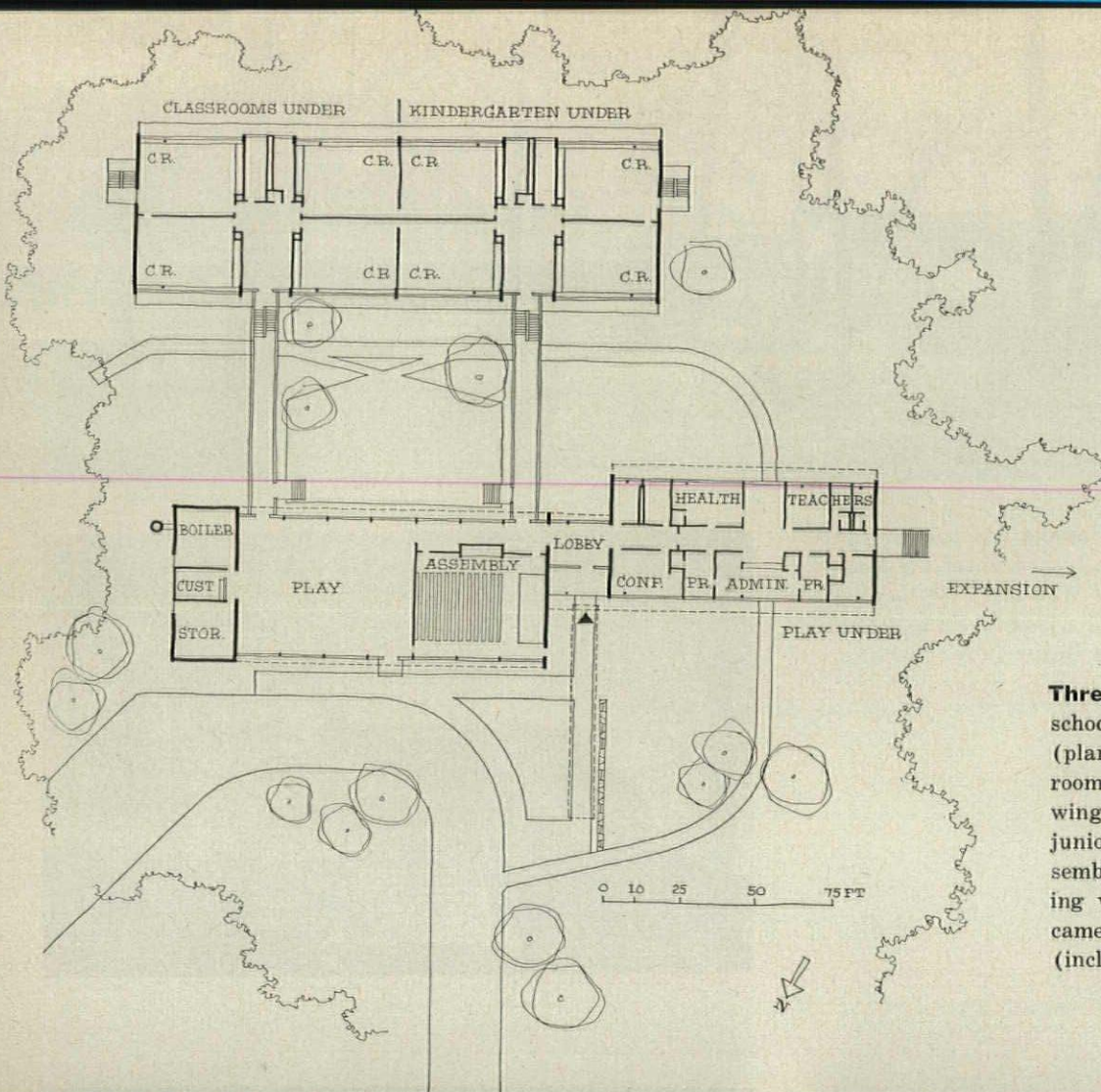


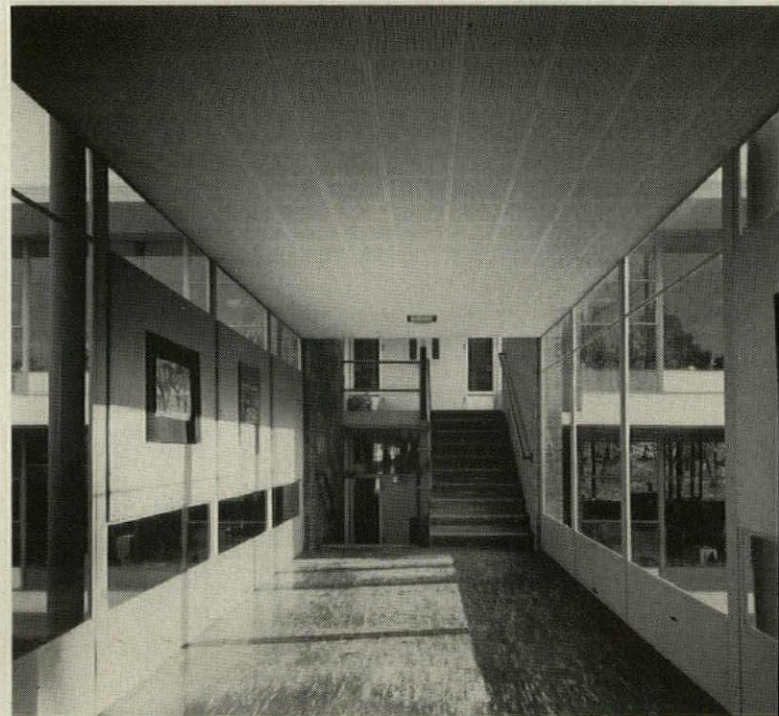
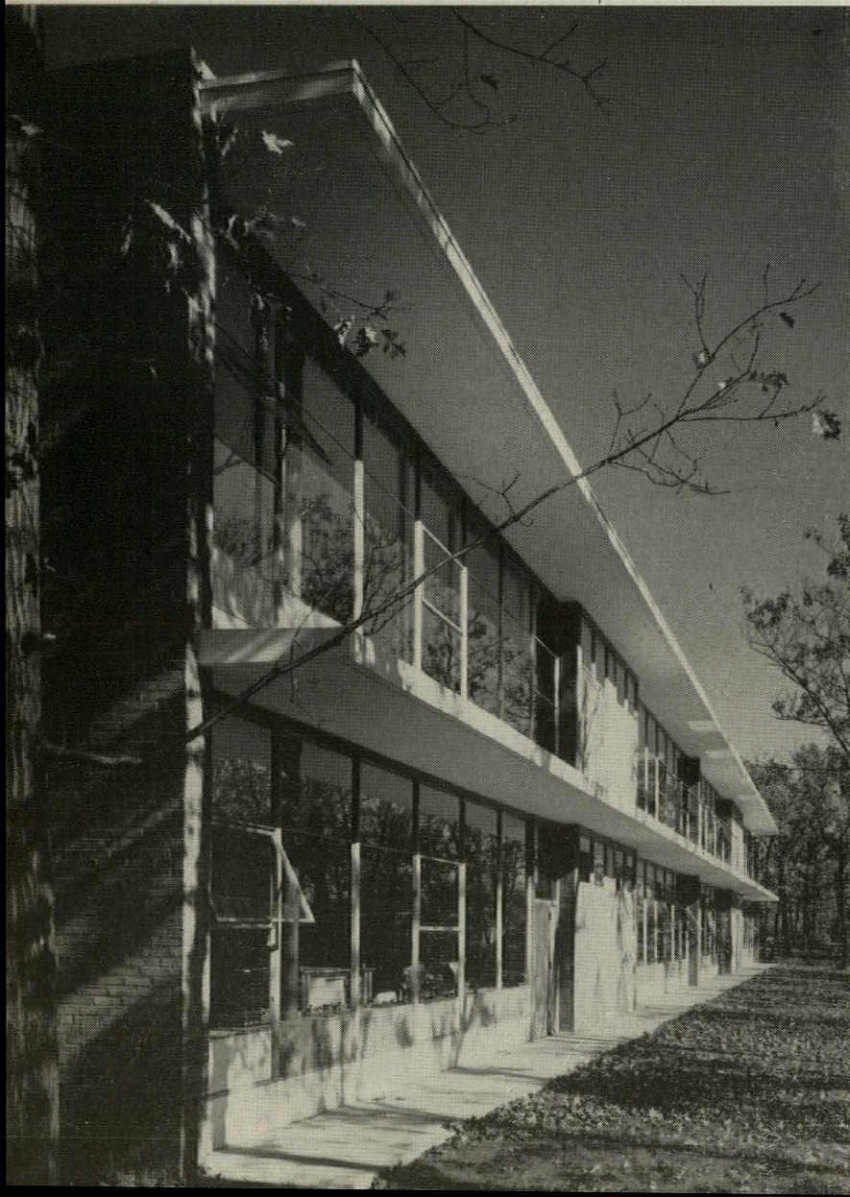
PHOTO: (ABOVE): © EZRA STOLLER; (BTL'W) FRED STONE



Waltham's court is seen through the main entrance (upper right) and from the classroom wing (lower right). Bridge leads to split-level classroom stairs, right.

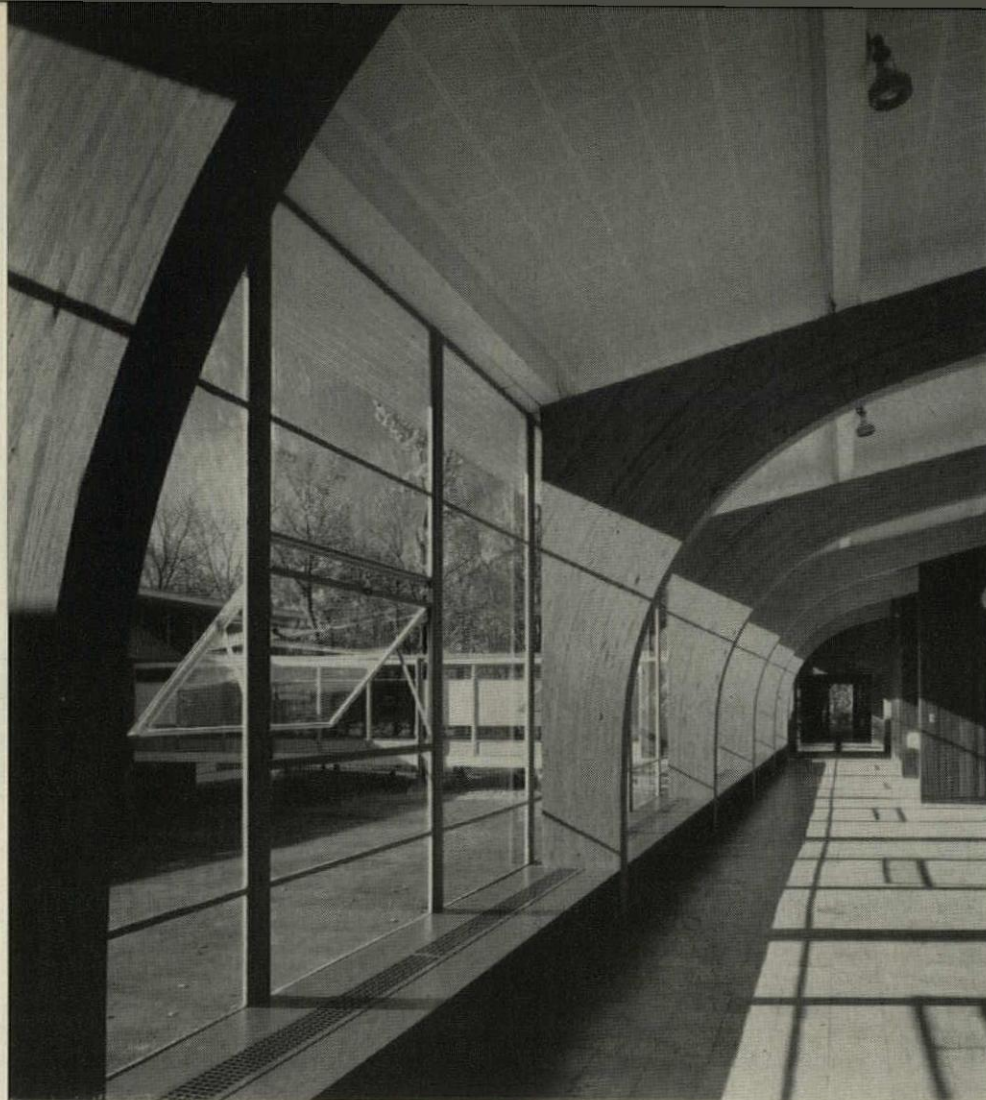


Three systems are used on Waltham school by The Architects Collaborative (plan left): lift-slab for two-story classroom wing and one-story administration wing (which is sized for addition of a junior high); wood-arch framing for assembly rooms, steel bridging for connecting walks. Total cost of 420-pupil school came to \$440,638, or \$13.13 per sq. ft. (incl. landscaping, built-ins, excl. fees).



Steel beams welded to exterior pipe columns form bridges linking main building to classrooms (background). Children pass display tackboards and ascend or descend only half a flight to class.

Concrete lift-slabs 9" thick on 26'-3" x 24'-6" bays were used for Waltham classrooms, seen here from rear. Slabs extend 4'-6" for sun and rain protection.

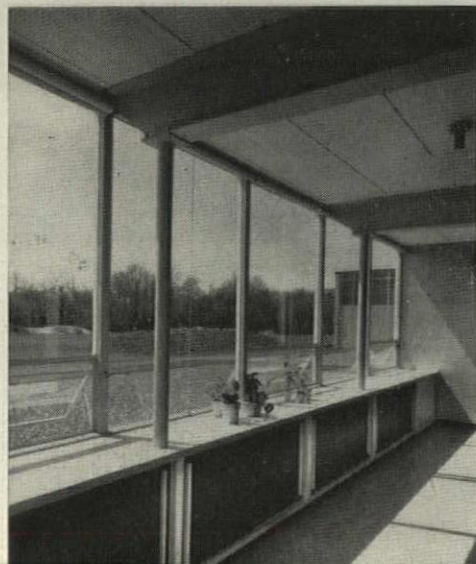


PHOTOS: (ABOVE & OFF. P.) © EZRA STOLLER; (OTHERS) BEN SCHNALL

TAC's STRUCTURE:

Different systems for different purposes

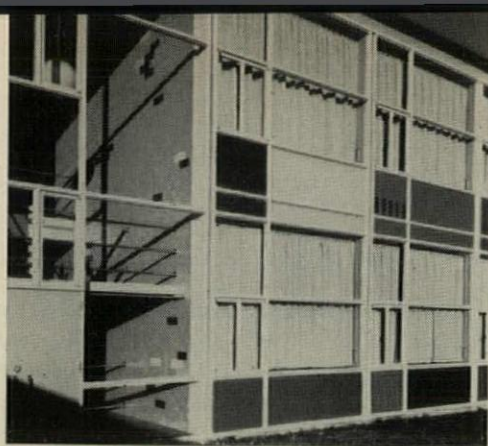
Post-and-beam system in S. Attleboro classrooms recesses pipe columns, cuts beams back from glass at an angle. Outside, this permits a true "curtain wall" of slim white hollow-metal sash and blue porcelain panels held between a sharp black roof edge and a black shadow line below.



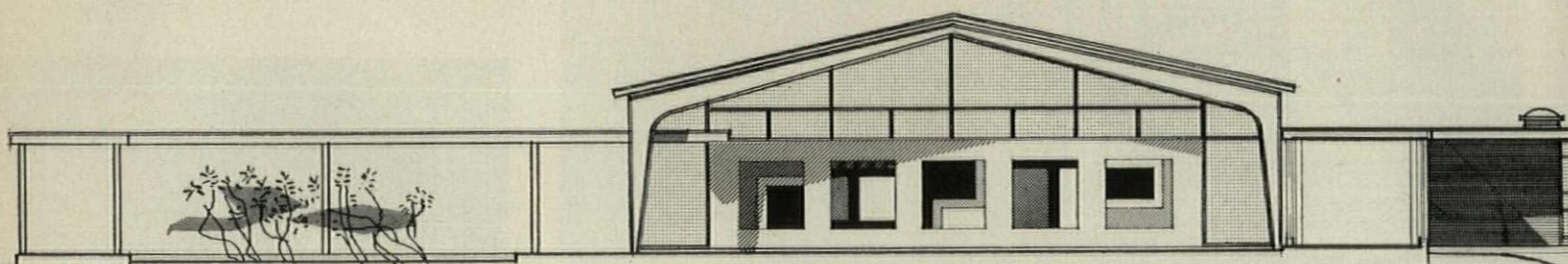
Laminated wood arches rising from 10'-9" to 15'-9" at ridge give high, clear spans in Waltham playroom and adjoining 180-seat assembly room. Glass runs clear of arches as a curtain wall and is warmed by fin-tube radiators below.



Acoustical umbrella of hard plaster is hung from 3'-6" deep transverse steel beam and purlins in S. Attleboro auditorium. Following splayed roof and walls, this canopy distributes sound back to rear seats. Dark-painted ceiling above is lined with slotted acoustical board; side walls have acoustical batts behind decorative patterns bored into the wood siding.



Grid pattern of two-story curtain wall at Mulcahey School in Taunton, Mass. by The Architects Collaborative is brightened with colorful porcelain enamel spandrels. Blue and green color scheme of the wall is by Artist Gyorgy Kepes. Stair wells and corridors are sprinkled with colored tiles.



Outside mural on porch of assembly hall at W. Bridgewater faces main entrance court. Artist Herbert Bayer calls his glazed-brick compositions "Five Signs."

Inside mural at S. Attleboro greets arrivals with gaily colored tiles set in white. By Amy Myers of TAC, it reflects the firm's floor-plan and elevation patterns.

PHOTOS: (BELOW) ROBT. D. HARVEY STUDIOS; (ABOVE) FRED STONE



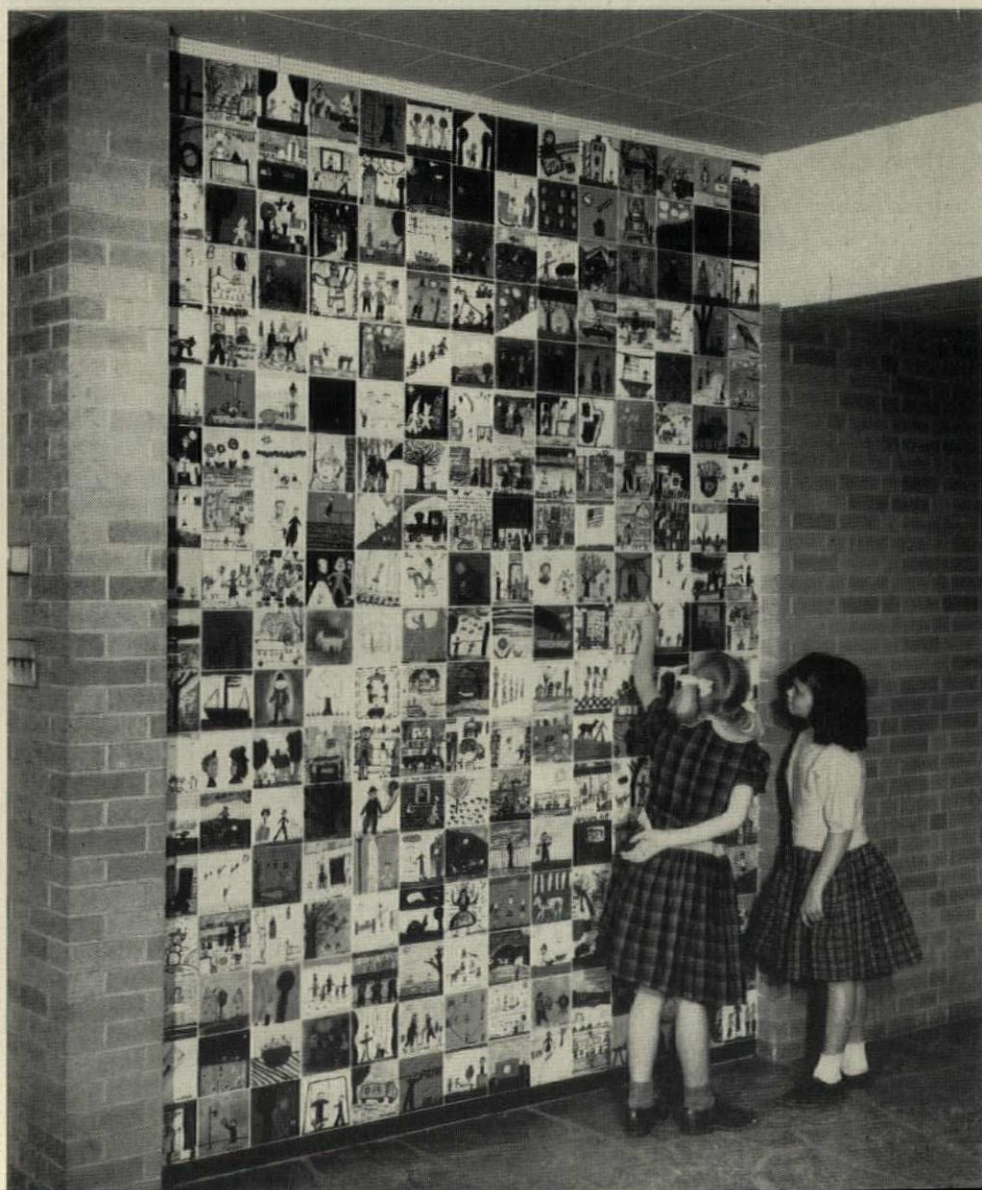
Clock mural by Juliet Kepes combines time and loudspeaker in colorful porcelain enamel panel above doors at Taunton. Each classroom panel has different animals and colors. Built-in storage unit at right has full-length mirror to teach neatness, glazed cabinet for children's exhibits.



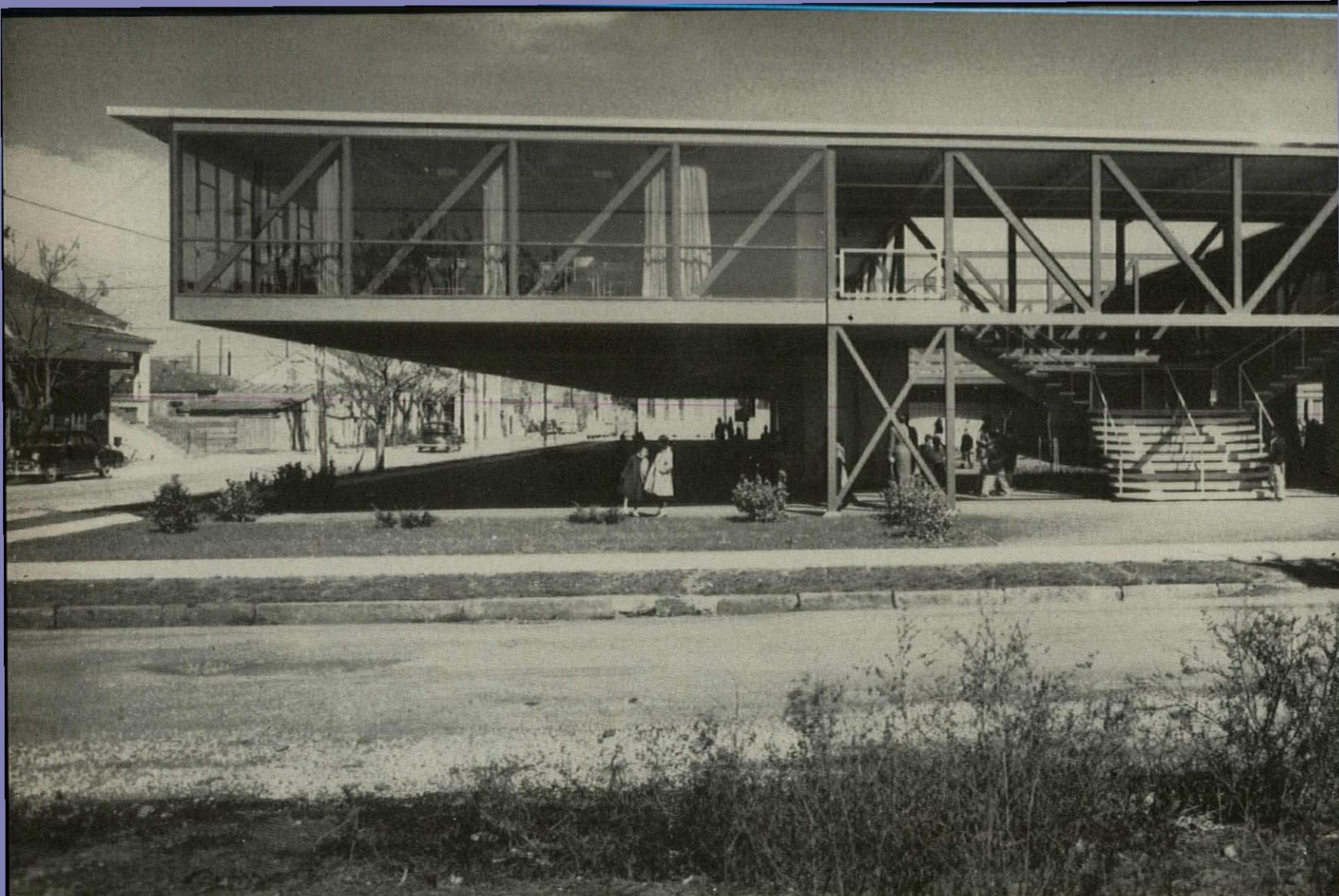
PHOTOS: BEN SCHNALL

TAC's DECORATION:

Bright modern art
built into school life



Children's mural in entrance of Taunton school is made of tiles painted by the pupils, arranged in pattern by TAC.



PHOTOS: FRANK LOTZ MILLER

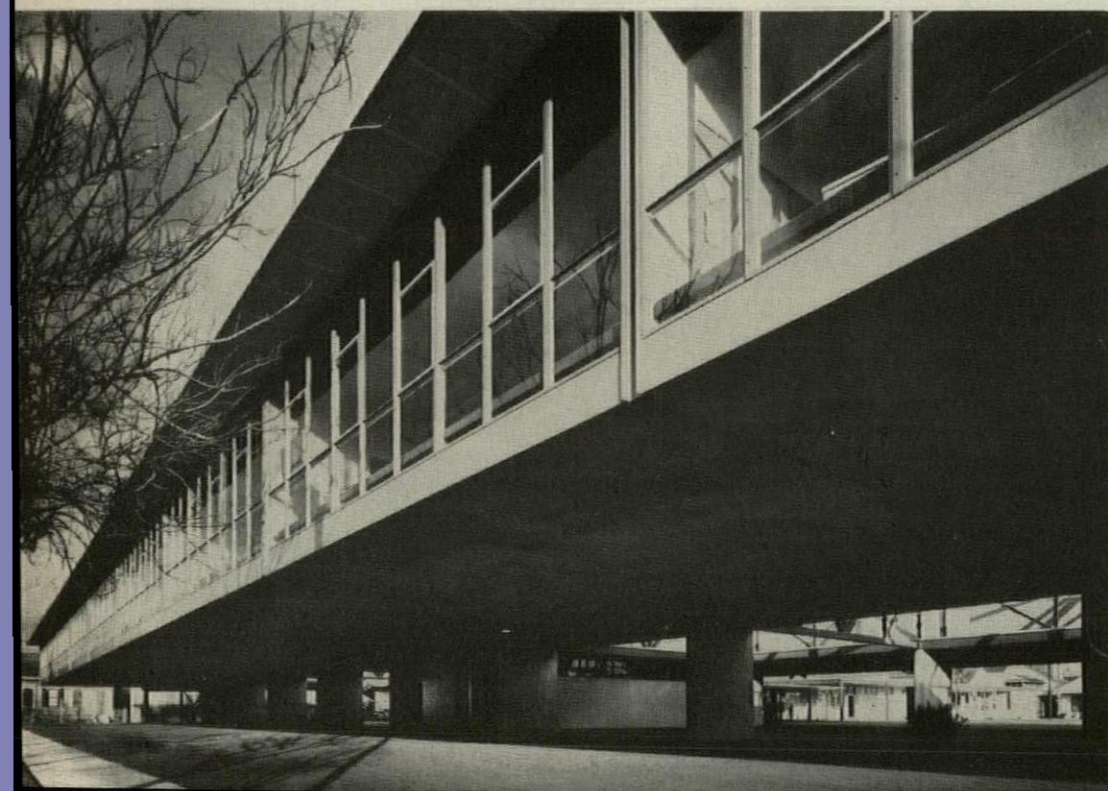
TREEHOUSE SCHOOL PRESERVES PLAY SPACE

ARCHITECTS: Charles R. Colbert; associates: Mark P. Lowery,
Sal C. Moschella, James T. Dent

ENGINEERS: B. M. Dornblatt & Assoc., structural;
Richard Y. Cheatham, mechanical;
E. Carlton Guillot, electrical

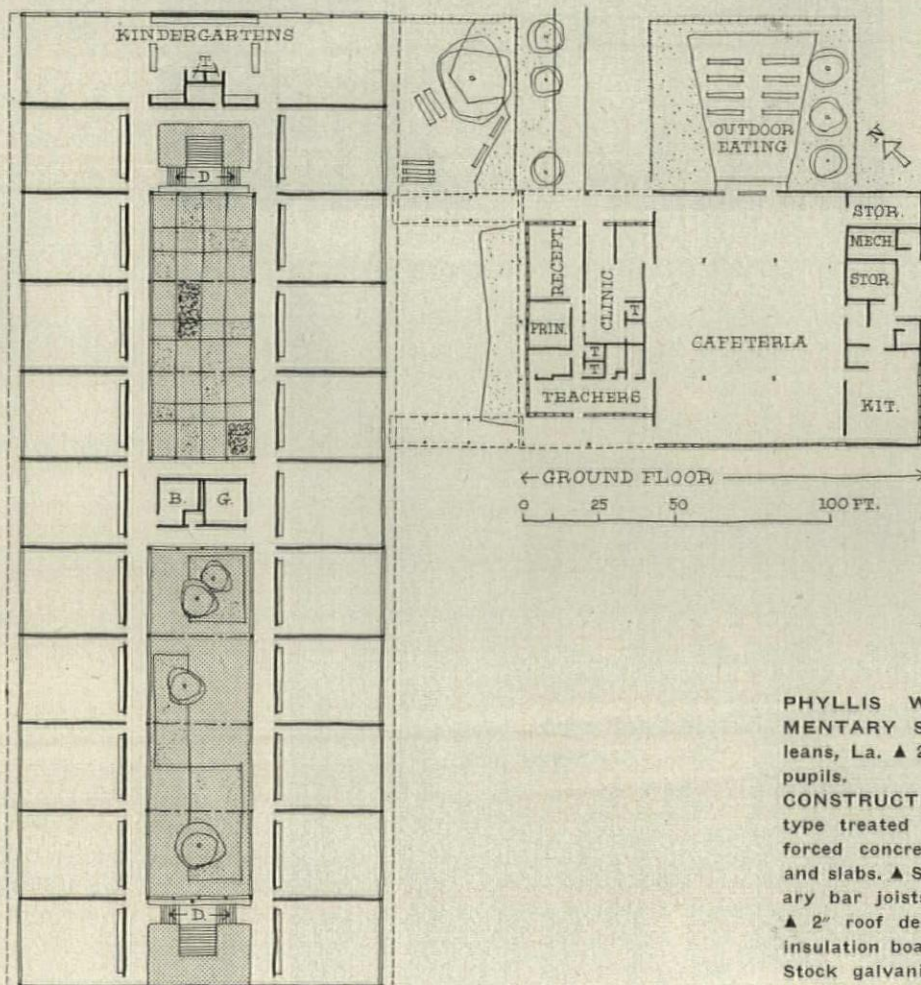
GENERAL CONTRACTOR: Keller Construction Co.

Fitting badly needed new schools and play yards into the middle of crowded cities is one of the most drastic problems facing any school board. New Orleans has come up with an equally drastic solution: schools in the air. To get a site for an elementary school in one of the worst-crowded sections of the city, the Orleans Parish school board had to buy up a fully built block at a total cost of \$250,000—\$125,000 an acre. This left Architect Charles Colbert only \$250,000 to build with, and two acres on which to cram a 770-pupil school and community recreation facilities (for this size school, national councils ask nearly 13 acres). How Colbert did it is shown in plan (right): classrooms are compactly grouped around a court and raised on 12 cantilevered trusses. Colbert figures he saved 28,000 sq. ft. of land, worth \$88,000, for sheltered play. "We're pleased to hear people call the school a 'treehouse' or a 'box kite.' Why shouldn't it be every bit as exciting as these?"





Flying trusses hold classrooms up from dampness, give added play space below sheltered from frequent rains. Cantilevering out from two rows of piers and clustered pilings avoids a forest of piers that would limit use of the yard underneath, as in older raised schools in New Orleans; lower excavation and piling costs helped offset a 12% increase in steel tonnage. Under the cantilever to the right can be seen the administration-assembly building with its bright-patterned porcelain enamel panels. Photo below: sandboxes under the kindergartens.



CLASSROOM FLOOR - PLAY AREA UNDER

PHYLLIS WHEATLEY ELEMENTARY SCHOOL, New Orleans, La. ▲ 22 classrooms. ▲ 770 pupils.

CONSTRUCTION: 40' friction-type treated wood pilings, reinforced concrete pile caps, piers and slabs. ▲ Steel trusses, secondary bar joists, bulb tee purlins. ▲ 2" roof deck of pressed fiber insulation board, built-up roof. ▲ Stock galvanized steel windows. ▲ Tinted heat-absorbent sheet glass (double glazing on south

end wall). ▲ Laminated wood floor deck in classrooms, asphalt tile. ▲ Insulated porcelain enamel exterior wall panels. ▲ Cement plaster on metal lath under classrooms. ▲ Fluorescent lighting. ▲ Forced circulation hot water strip convectors under windows. ▲ Natural finish gum millwork, plywood partitions. ▲ Exhaust fans in classrooms.

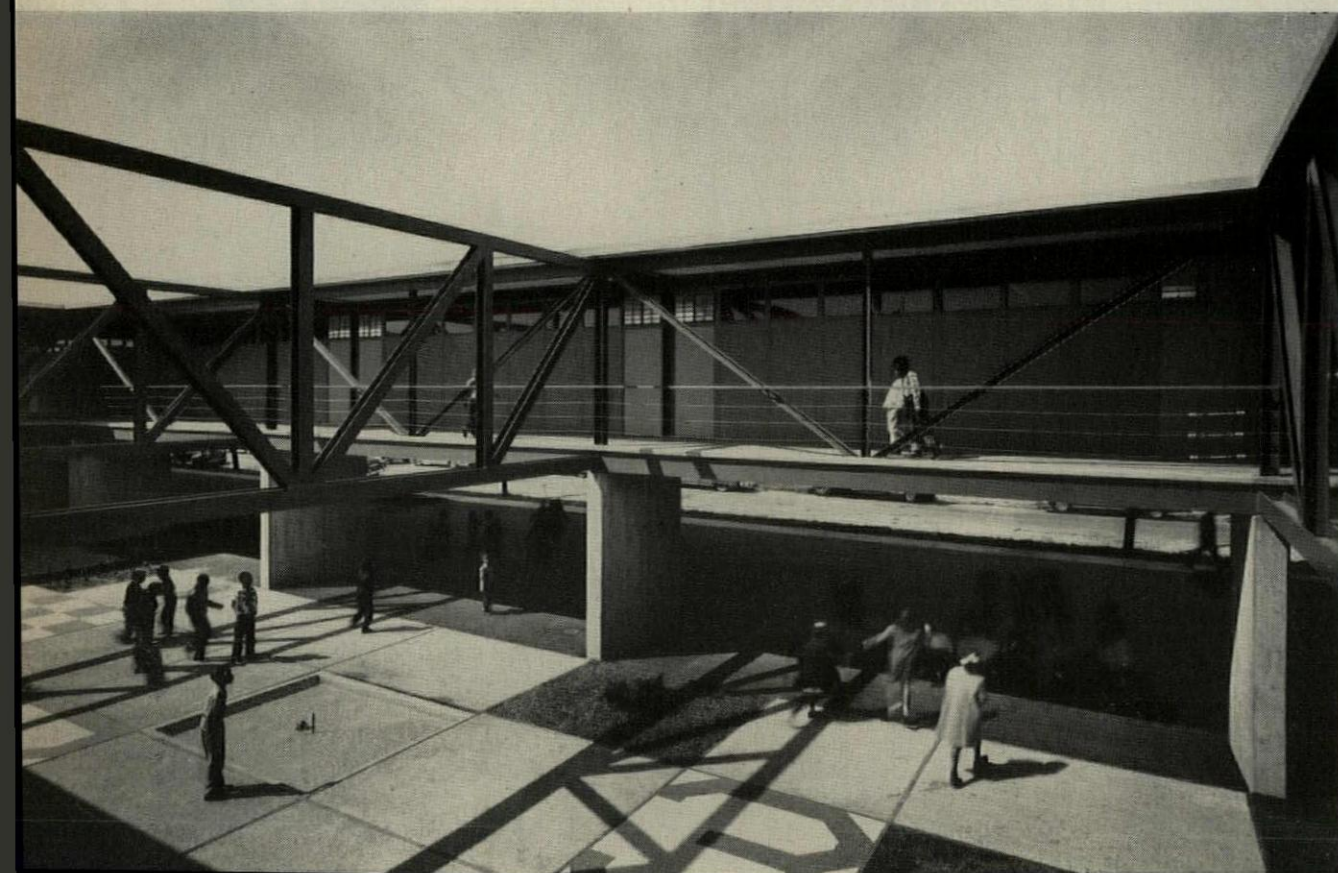
COST: \$519,050 (incl. paving and landscaping, excl. fees); \$10.31 per sq. ft.



Kindergartens extend across the south end of the elevated classroom building and can be thrown together by pulling back a folding partition (right background).

North end of building is open; stairs with cantilevered concrete steps and bright painted handrails carry out the lacy character of the trussed structure.

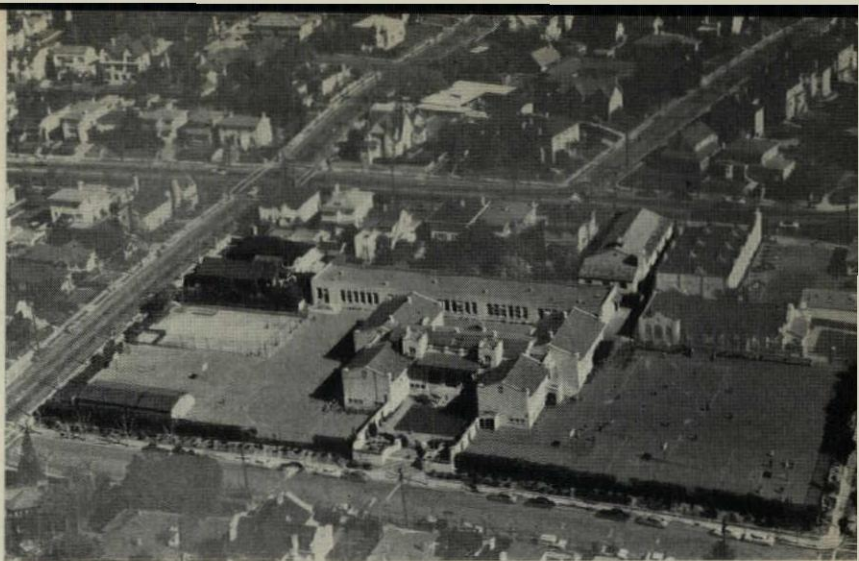
Central court has lively patterns of checkers and number games, a small spray pool. Second-story walkways around the court connect classrooms, give varied down-views.



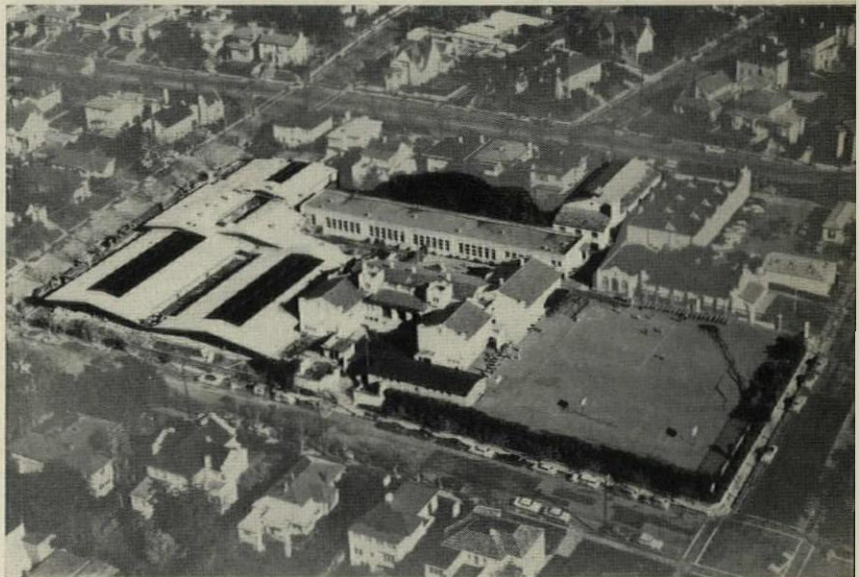
SKYLIGHT SCHOOL

FITS ON TIGHT CITY LOT

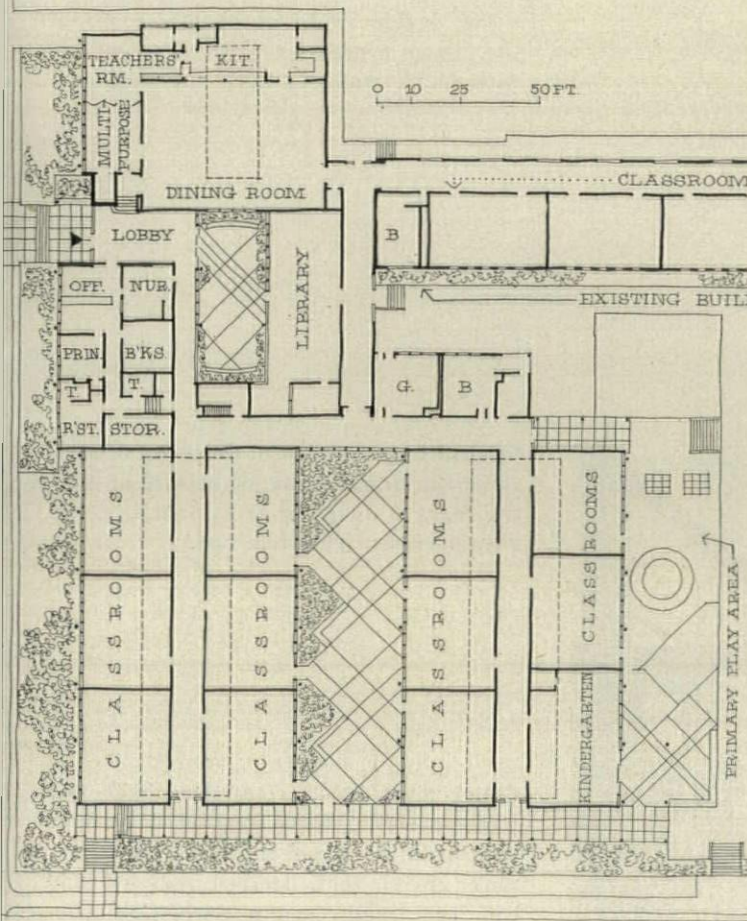
Like the New Orleans school on the preceding pages, this California school was cleverly squeezed onto a city lot apparently too small for it. Complicating the problem was the fact that the old 1909 school building, built smack in the middle of the lot, had to be kept in use while the new one was under construction. Further, a five-classroom wing and assembly hall at the rear, built during the thirties, had to be retained to work together with the new addition. Architect Warnecke wanted to keep his new school down to the one-story height felt desirable for modern elementary schools, but he soon found he would have to group his classrooms on either side of double-loaded corridors to get them all on the site. To make such a compact scheme bright and workable, he introduced two long landscaped courts between classroom wings (plan below) and spread a great roof of light across both corridors and classrooms flanking them. The sequence of photos at the right shows how Warnecke shoehorned his new school into a corner playground, notching his roof around the old buildings only inches away.



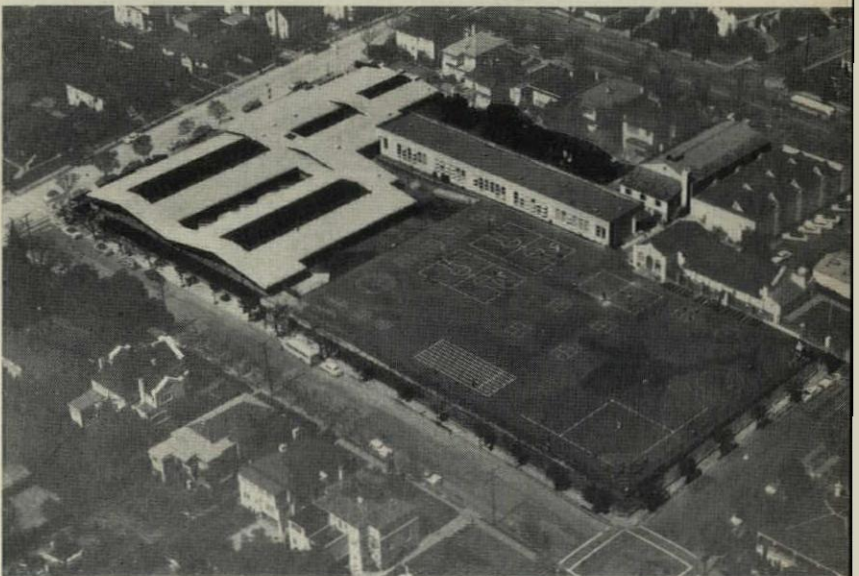
1. Boxy old Spanish-style school occupied middle of city lot



2. New wings on three levels are squeezed in, connected by ramps



3. Old building is removed; not a school day has been lost



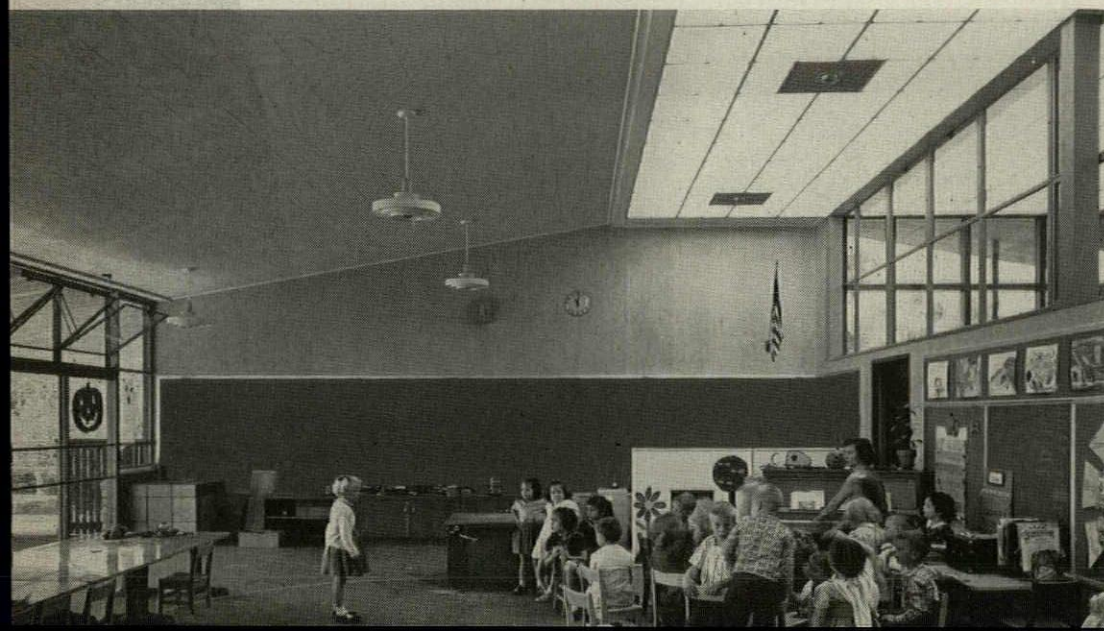
PHOTOS: R. L. COPELAND



PHOTOS: RONDAL PARTRIDGE

Linked gables of classroom wings make a low double sweep at bottom corner of site. Deep overhangs protect walks, act with blank walls to keep out west sun.

ARCHITECT: John Carl Warnecke
 LANDSCAPE ARCHITECTS: Eckbo, Royston & Williams
 ENGINEERS: Hall, Pregnoff & Matheu, structural;
 G. M. Simonson, mechanical-electrical
 GENERAL CONTRACTOR: John E. Branagh & Sons



Skylight over one third the depth of each classroom brings in ample natural or electric light through plastic panels. Glass strip borrows light from hall.

Court gives inside classrooms light and pleasant views, places to stroll or sit. Low lines mold the school into its sloping site; pink gravel roof, stained redwood and buff brick walls lend a warm California character welcome in residential area.

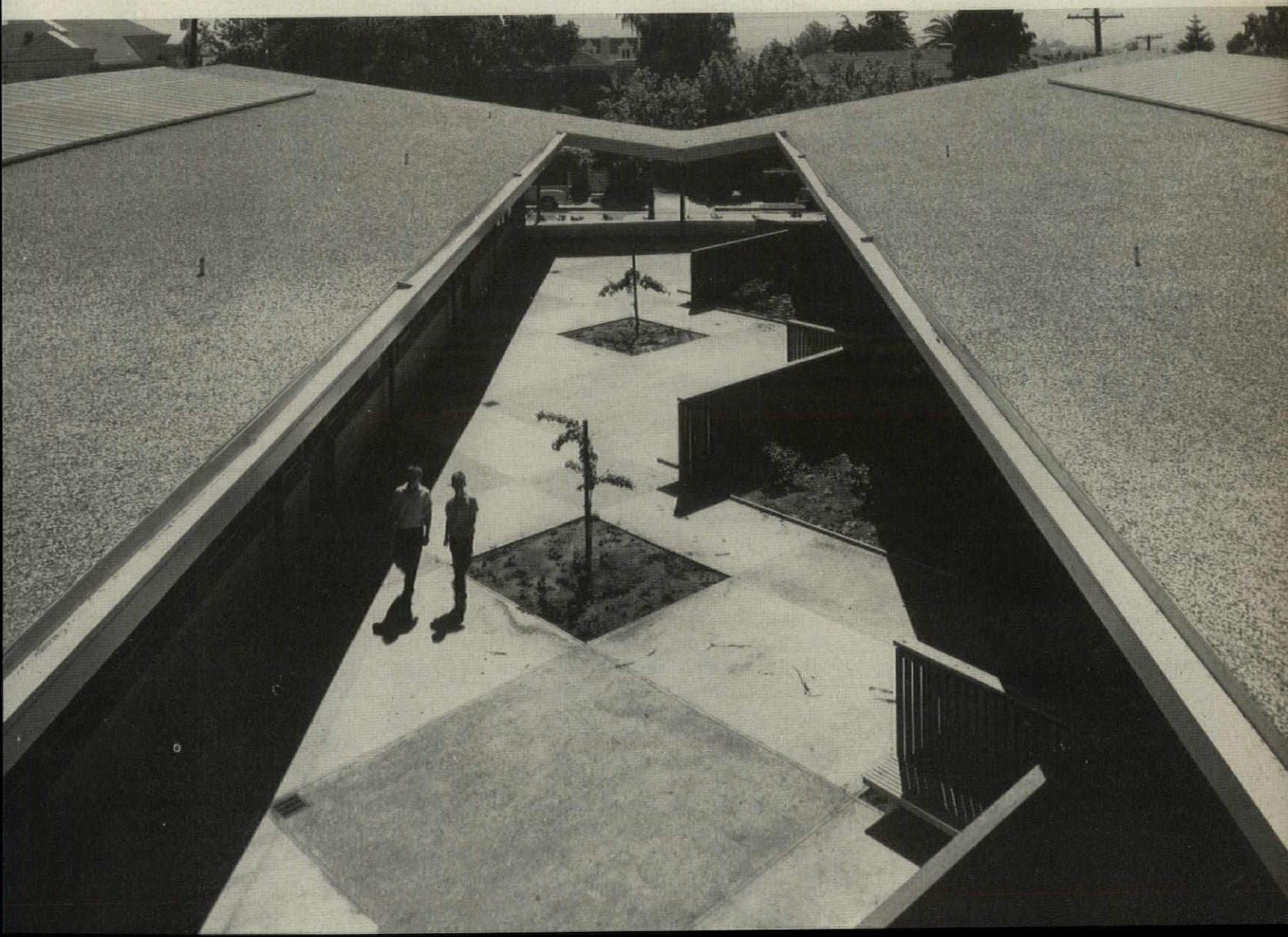
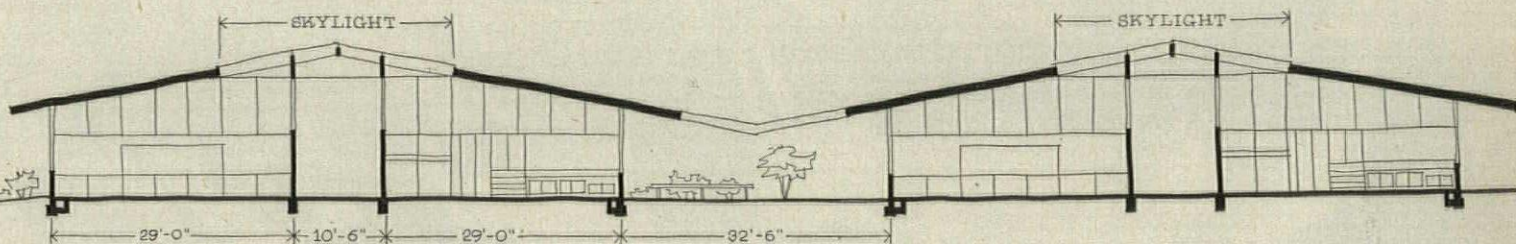
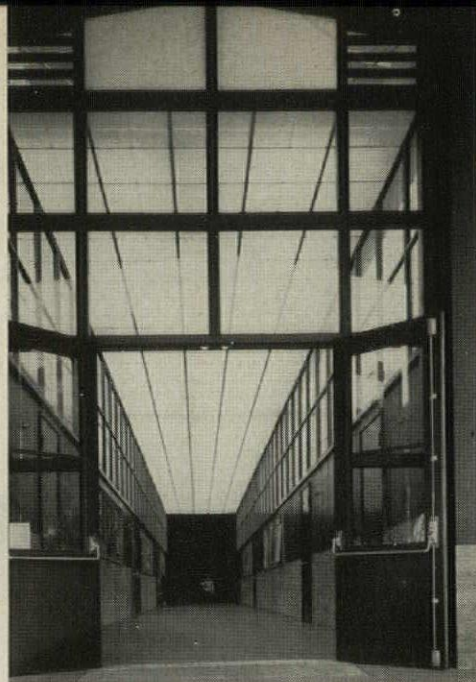
SKYLIGHT SCHOOL

FRANK C. HAVENS ELEMENTARY SCHOOL, Piedmont, Calif.
▲ 12-classroom addition. ▲ 400 pupils.

CONSTRUCTION: Slab on grade.
▲ Steel and wood framing. ▲ Buff concrete block spandrels, stained redwood end walls. ▲ Built-up roof with pink aggregate, mineral wool insulation. ▲ Acoustical tile on ceilings. ▲ Wood stud partitions with 1/4" stained gum ply-

wood panels. ▲ Projected steel sash windows. ▲ Asphalt tile flooring. ▲ Hot-water unit heaters in classrooms; radiant floor plus a unit ventilator in kindergarten; warm air system in cafeteria. ▲ Skylight: 1/4" heat-absorbent wire glass, luminous plastic ceiling under.

COST: \$413,000 (incl. fees, excl. landscaping and furnishings); \$13.38 per sq. ft.



The art of instructing goes on in many places: not only in schools but in industry, business and churches. A panel of experts deflates thirteen common misconceptions about all kinds of rooms used for instruction and suggests ways of placing audiovisual planning on a more rational basis

HEARING, SEEING AND LEARNING



THE PANEL

ARCHITECTS

C. GATES BECKWITH
Eggers & Higgins

JOHN W. MCLEOD
McLeod & Ferrara

STANLEY SHARP
Ketchum, Gina & Sharp

TECHNICIANS

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Research engineer, Sylvania Electric Products, Inc.

ROBERT B. NEWMAN
Bolt, Beranek & Newman, acoustical engineers

ADRIAN TERLOUW
Educational consultant, Eastman Kodak Co.

HENRY WRIGHT
Technical consultant

EDUCATORS

A. J. FOY CROSS
Professor of Education, New York University

GERHARD RAST
Superintendent of Schools, Westport, Conn.

Nearly all learning is by eye and ear. Every part of an instruction room sooner or later becomes involved with light and sound control.

The experts on FORUM's panel brought up these truisms to emphasize a fundamental point:

Great damage is done the over-all art of instructional light and sound control by the notion that audiovisual planning somehow becomes very special when mechanical aids come into the instruction room. Conversely, great damage is done the art of teaching by considering the mechanical aids as a special class of supplementary gimmicks, a luxury, something outside the normal routine. Hence the panel directed its first discussion to—

MISCONCEPTION NO. 1:

“Mechanical audiovisual aids make instruction room planning

much more difficult.”

What the mechanical aids do is give us a fresh look at mistakes we are used to. But that does not make the mistakes more excusable without the mechanical aids than with them. For instance, writing may be on the chalkboard or may be projected from a lighted acetate sheet. In either case it is hard to read if there is anything close by which is thousands of times brighter than what we are trying to see. We may have taken for granted the unshielded brilliant window abutting the chalkboard, but are newly aware of the mistake when it interferes with filmstrips. Similarly, the ear wants clarity in the sounds we attend to regardless of whether the sounds are produced by people or machines. However, of all sounds that are not wanted, the clear and intelligible ones are the worst, no

matter whether they issue from the same room or the next room, or from the exhorting teacher or the clicking of a machine next door. If light and sound are suitably controlled for the old familiar activities, there is little special planning needed for mechanical aids. The exception to this rule is unadaptable skylighting which can be splendid for all the old activities but which must be capable of being temporarily blocked out for most mechanical visual aids, or must come through self-baffling narrow slots, a type of daylight-downlight gaining favor in England.

MISCONCEPTION NO. 2:

"Because doors to the corridor and windows to the outdoors stand open anyway, we might as well leave permanent openings between rooms, or go to an open plan."

Open planning—breaking out of the isolated room cubicle—has many advantages, but it has serious acoustic problems that cannot be dismissed with the open-door-anyway argument. After all, the open door can be closed during a quiz. Also, sound traveling out a door into a corridor and into another room turns several corners; much of it is trapped and lost (especially if the opposite corridor wall is sound-treated). As for windows, sounds from outdoors, including those from adjoining windows, are diffused and deadened unless they come from directly outside, in which case the window can be closed or the offender sent away.

Permanent openings directly between rooms or partial partitions create a different acoustic situation altogether. The unwanted sounds are now apt to be intelligible or insistent, two great enemies of mental concentration. Hence the only way an open plan can work well acoustically is for the extraneous noises to be so random that they blend into an unintelligible blur or hum. This hum must not appear to come from only one direction, nor may it be so loud it interferes with speaking or hearing within working groups.

Background noise answering these criteria is frequently better than quiet because it blankets individual irrelevant noises; it is sometimes purposely introduced into offices and reading rooms under the name of "acoustic perfume." This satisfactory random buzz often occurs in the isolated instruction room when its students are broken into small working groups. Open planners have reasoned that clusters of open rooms would simply spread a similar buzz. Why, then, complaints about open plans?

NEW INSIGHT: As long as speaking and hearing are done in small groups (as in offices, or in many Sunday schools for instance) the open plan is not a difficult acoustic problem. Trouble enters the school open plan because entire classes of 30 students unify and are addressed either by the teacher or a mechanical voice. Speech on this scale is apt to carry above the "acoustic perfume" and to be heard intelligibly or at least insistently by the neighbors. Stepping up the "acoustic perfume" to drown out exhortation or 30 people laughing explosively in unison is not practical because then the hum itself becomes so loud it interferes with wanted sounds. (The larger a listening group, the lower a tolerable noise background. It is easy to converse with one person in a noisy subway, impossible to hold a meeting.) The problem of the mechanical voice that must speak to 30 students could be solved (expensively) with several low-voiced speakers, each for a group of half-a-dozen listeners, instead of a single speaker for all. But the problem of the teacher's own voice can be disposed of only by modifying her methods so she never or seldom addresses the unified class, or by giving her a walkie-talkie. The panel considered whether there could not be special rooms for talk addressed to the total group (such a room might possibly be central to a ring of activity rooms around it) and concluded that open plans could profit from more fundamental study of instruction room activities, possible team teaching systems, and perhaps from inventing radically new categories of workrooms and instruction rooms.

MISCONCEPTION NO. 3:

"An open plan will work better if the ceiling has thorough sound-absorbing treatment."

Over-all ceiling sound absorption is usually precisely the wrong thing for the open plan because it absorbs the random background hum. Unwanted noises that continue to come through from the neighbors—and plenty will—are therefore of maximum intelligibility, insistent as to their source, and in sharp contrast to the quiet background.

MISCONCEPTION NO. 4:

"Mechanical speakers at table height are quieter than speakers placed high."

An audience, at least one wearing clothing, is sound-deadening. A speaker must be tuned relatively high for sound issuing from the height of the audience to get to rear listeners. Sound from a speaker close to the ceiling does not meet this interference, can play more softly. Many complaints about mechanical voices penetrating partitions are owing to low speaker height. Teachers need no training to tune a speaker lower when it is installed high; they automatically tune it lower. Unfortunate conflict: open-top partitions vs. high-up speakers; there is no conflict between glazed-top partitions and high-up speakers. It must be remembered that mechanical speakers include phonographs, radios, tape recorders and sound tracks, as well as public address systems.

MISCONCEPTION NO. 5:

"The only way of knowing whether an experimental open plan will work acoustically is to try it and see."

If the activities to take place in the space are known, there need be no guesswork about acoustic results. The extent to which loudness, distribution and intelligibility of sound can be controlled is predictable in



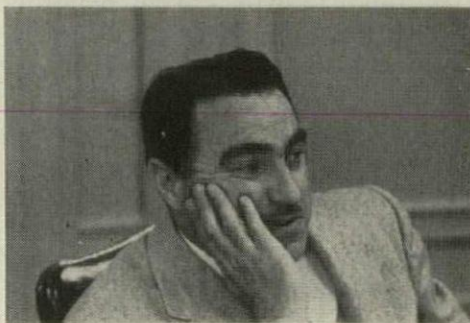
NEWMAN



McLEOD



TERLOUW



RAST

advance. The point at which background hum will interfere with various speaking and hearing tasks is predictable; so are the sounds that will not be blanketed by background hum. Judgment then enters when advantages are balanced against disadvantages, but today this can be informed judgment with the acoustic disadvantages known. For this we may thank both pioneering open-plan school architects and acoustics researchers.

MISCONCEPTION NO. 6:

"An instruction room with good hearing conditions will have good recording conditions."

The microphone is a very different animal from a two-eared human being. Most instruction rooms yield "boomy" (heavy on the low frequencies) recordings. This is a real problem because tape recording is becoming a popular teaching tool, but the fact must be faced that an instruction room can double as a good recording studio only after special, highly technical acoustic treatment, and careful planting and monitoring of multiple microphones.

MISCONCEPTIONS NOS. 7 and 8:

"For visual tasks, daylight is better than electric light," or "electric light is better than daylight."

The eye can be equally well suited by daylight, electric light or the two in combination. There is nothing inherently superior about either source of light for learning tasks, and either can be handled well or badly. As for electric light, the panel agreed it is only prudent to do a complete night lighting job in most schools—especially high schools—and that this would constitute a complete job of adequate daytime lighting also. Electric lighting is usually cheaper and easier to direct accurately toward areas needing higher illumination, such as chalkboards. Some panelists reasoned that since electric light, once installed, is left burning most of the time anyway, instruction rooms might as well be designed for it in the first place, without the redundancy of elaborate daylighting measures. Proponents of daylighting emphasized "living" qualities in schools, the importance of having generous views out of instructional rooms, a sense of nature, a sense of changing times of day and changing weather. They contended that even in northern areas a generous daylighting job should be able to take care of all kinds of sky conditions. All agree that the question of best balance entails a careful economic computation, balancing initial construction costs with operating and maintenance costs. Chief sins: in electric lighting, too great monotony; in daylighting, extreme brightness contrasts and insufficient control.

MISCONCEPTION NO. 9:

"Foot-candles are a good index of visibility."

Foot-candles measure the quantity of light falling on a surface. But we do not see the light falling on a surface; we see the light that is reflected back from the surface. This is true even of the sky. What we see is measured in foot-lamberts (foot-candles x reflection factor; e.g., 30 foot-candles on a desk with a 50% reflection factor yields 15 foot-lamberts). In planning illumination, it makes no difference whether we begin computations with foot-lamberts and work back through the reflective factor to foot-candles, or whether we start with foot-candles and compute in the reflection factor to arrive at foot-lamberts; in either case the foot-lambert figure of the task is the significant result figure.

MISCONCEPTION NO. 10:

"Give an instruction room proper lighting at desktops and work counters, and the entire work area lighting is taken care of."

Demonstrations and objects—often held in a speaker's hands—must be seen too; a little drama in lighting can go a long way here. More important, the walls must be seen well; they are vital teaching areas,



WRIGHT



BECKWITH



CROSS



ALLPHIN



SHARP

often slighted in lighting. Very commonly, students with perfect vision, at the rear of the room, cannot see the chalkboard material because of poor lighting or too-small writing! Wall lighting should never be considered a supplementary or extra item; it should come into the primary budget and stay there.

One of the important uses of the teaching wall today is to show projected data such as maps, graphs, tables, mathematical materials, plans and outlines, because projection affords solutions to storage, convenience, size and visibility problems. One ironic reason for projected material's greater visibility: it is produced by throwing additional light on a teaching surface often otherwise inadequately lighted.

MISCONCEPTION NO. 11:

"If there are sufficient foot-lamberts at all seeing surfaces, including walls, the light problem is under control."

Seeing is affected by two factors that are not the same: level of illumination, and the brightness differences in the visual field. For instance, a student might have a satisfactory task brightness of 15 foot-lamberts. But if there are a couple of thousand foot-lamberts in his peripheral window view toward open sky, there will be a sensation of glare, distraction and fatigue.

MISCONCEPTION NO. 12:

"Mechanical visual aids require a room completely dark."

Some manufacturers of audiovisual aids and some standards committees have confused instruction rooms with theaters and recommended standards of light exclusion that are not only expensive and difficult but undesirable. There are three main classes of projections:

1. Bold, simple black-and-white images (graphs, mathematics problems, etc.) which, with a 300-w. projector, require no room light control beyond normal desirable control of glare and sun.

2. Film strips and black-and-white motion pictures; for these the projector beam must be 20 to 25 times as bright as the screen surface; going beyond that yields no educational advantage. This can be accomplished by a combination of screen darkening and room dimming; often ordinary Venetian blinds are sufficient as general dimmers. Pervading darkness, an aid to drama in the theater, is a soporific in the classroom.

3. Motion picture or still color, which demands a projector beam 100 times as bright as the seeing surface. It is in this category that severe problems of darkening arise; light-excluding Venetian blinds are sufficient. (No school should be built today without provision for hanging blinds or curtains, and in the absence of mechanical ventilation,

thought must be given as to how the air will be kept stirring.)

For the first two classes of projections, students and teacher should see each other well. Light for taking notes is also often important. Even for the third class, light from above, shielded so it does not spill to the screen, is not only permissible, but desirable. There are usually one or two best room arrangements for projection; flexibility is needed for moving seating into the best arrangement quickly.

MISCONCEPTION NO. 13:

"The pushbutton instruction room, with the seeing and hearing environment automatically controlled, would be ideal if cost were no object."

When teachers have been given such rooms experimentally, Panelist TerLouw reported, they have at first been delighted by the gadgetry; later they have cooled to it because it leaves so little responsibility and practical participation to students. The educator members of the panel were emphatic that "one of the great mistakes we make in education is to try to make everything too automatic, and learning does not go on in an automatic situation. Solving some of these very problems of how to provide conditions under which learning can best take place is a very valuable experience for young people."

IS COOLING COMING FOR SCHOOLS?

COURTESY HERMAN NELSON

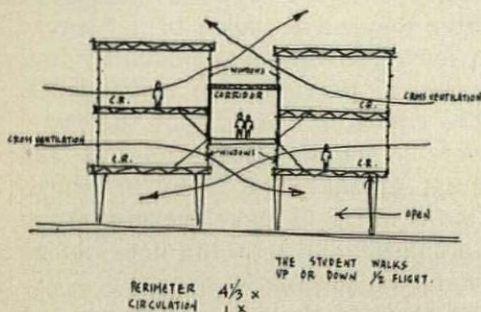


Classroom cooling in Bakersfield, Calif. eliminates ventilation problem sometimes accompanying use of light-excluding blinds.

HEDRICH-BLESSING



High school now building at Niles near Chicago provides for future 500-ton water chiller to be added for unit ventilators. Architects: Holabird & Root & Burgee.



Natural ventilation proposal for New Orleans would give cross ventilation to school's two-story double corridors. Architects: Curtis & Davis.

Obviously it is, for some schools. San Angelo, Tex., site of round, cooled Belaire elementary school (photo opp. p. and overleaf), is planning a \$3 million cooled high school. Schools elsewhere in west Texas, in southern California, Arizona, New Mexico, Denver, the Chicago area, and even in Schenectady, N.Y., are being at least partially equipped with cooling equipment or provision for future cooling in classrooms. Considerably more common are schools with cooling in such limited spaces as administration or auditorium.

Thus far, the decision to cool teaching space has been based on one or a combination of the following situations:

- ▶ Temperatures rising into the high nineties during the normal school year.
- ▶ Dust storms (full air conditioning, including cooling, partly pays for itself in this case by reducing abnormal maintenance costs).
- ▶ Need for sound control where a severe problem exists, as at Belaire with the airfield hard by.
- ▶ Summer use of the building, usually for remedial teaching or adult education.

In Denver, for instance, a cooled addition to the downtown Vocational High School (Architects Jamieson & Williams and M. E. Ken Murray) will be used for an intensive adult education program operating through the summer. At Schenectady's Linton High School (Architects Perkins & Will and Ryder & Link), the area to be cooled is the technical building, housing shops, laboratories and administration, with the initial refrigeration equipment serving the auditorium when it is not used in technical classrooms. Niles Township High School (Architects Holabird & Root & Burgee) near Chicago will have provision for a future refrigerating cycle because in this area summer enrollments both for remedial work and curriculum enrichment have been rising. In the southwest, reasons for cooling are obvious.

The situations listed above will probably continue to be the main reasons for installing classroom cooling. Periodically there is a spate of talk about running schools all year for economy, the idea being that since the plant is there anyhow, a staggered school year, running regularly through the summer, could increase "production" 25% to 33 1/3% with no additional capital outlay. At least seven cities—Bluffton, Ind., Amarillo, Tex., Omaha, Neb., Aliquippa and Ambridge, Pa., Newark, N.J. and Nashville, Tenn.—have given this theory extensive trial in the

past, and half a dozen others have experimented with it more gingerly. Every school system that has tried the staggered year-round plan has abandoned it because of chaotic vacation conditions, disintegration of extracurricular activities, class scheduling difficulties, havoc with the maintenance budget (repairs normally made while the plant idles have to be done on overtime), higher payroll costs. Summarizing these disappointing experiences, *Kiplinger Magazine* reports educators with first-hand experience have concluded that "year-round use of schools as a means of avoiding the cost of constructing new schools is a delusion."

Use of schools for remedial and voluntary summer attendance is another matter. Summer remedial work does make a saving because it drastically decreases grade repeating. With a fourth of its elementary schools equipped for summer use, San Angelo's superintendent of schools estimates the present repeater rate of 10% could be cut to 2%, for instance. Voluntary summer enrichment programs, enrolling about a third of the student population where they are most successful, are working very well in a few cities and return educational dividends year-round. These are not money savers; they can be expected to add about 20% to the school operating budget. A community enlightened enough to value—and pay for—the amply demonstrated advantages of these sessions might well consider school cooling for them too if climate makes this an important factor in success.

Initial costs for school air conditioning including cooling range from 98¢ per sq. ft. at Belaire to a more usual \$2. Belaire's low costs are due largely to its compact, centered core design and thorough window shading; ductwork was reduced an estimated 50% by the design, tonnage an estimated 20%, compared with an orthodox double-loaded corridor plan.

A school administration which prefers to use natural ventilation part of the time and mechanical ventilation with cooling part of the time has a special problem; good design for natural ventilation is at odds with good design for cooling. Belaire could not have its extraordinarily economical cooling scheme if it had part-time natural ventilation also; in its case there was no conflict in the choice because the noise problem created by the airfield was constantly present, no matter what the time of year.

Operating costs are impossible to compute as an average because demands put

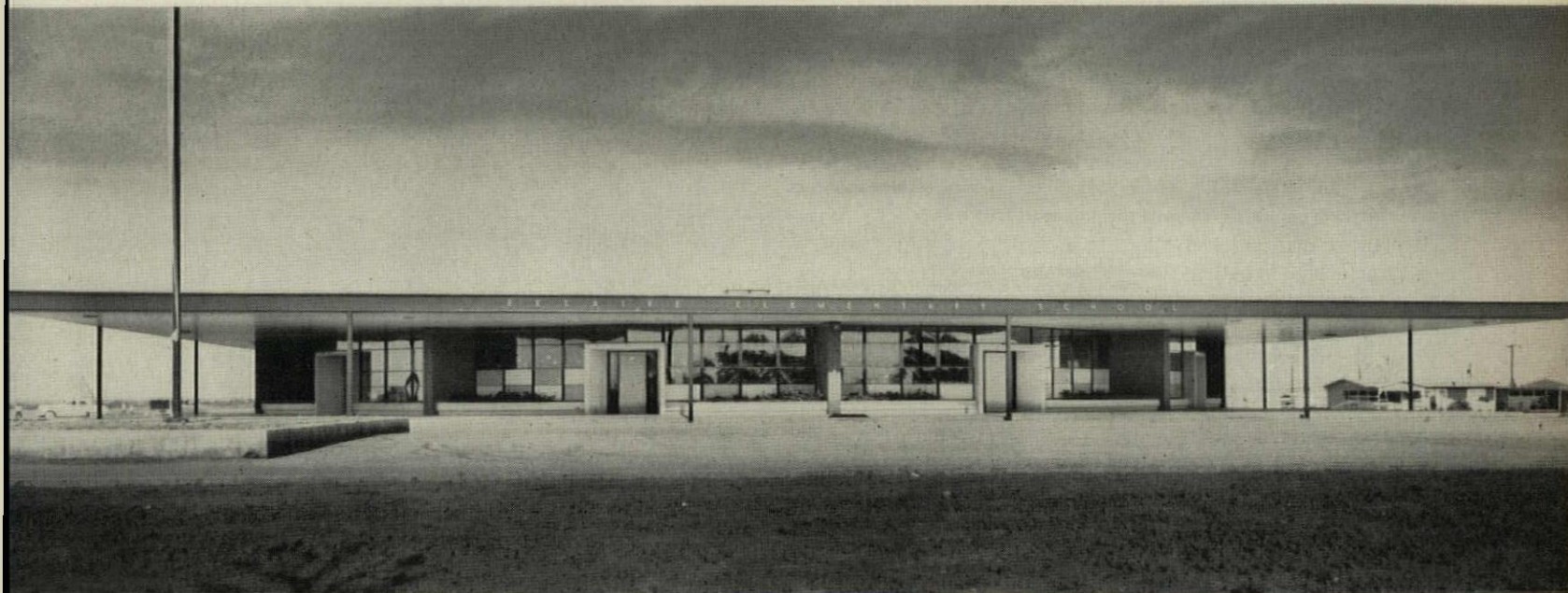
on the equipment vary so widely with building design, climate and length of school year. At Belaire, however, annual operation is estimated at \$500 or slightly more than \$2 per student.

One method of reducing operating costs is "night purging," a feature especially devised for school cooling units. As the outdoor air cools at night, the chilled water cycle is shut off and 100% outdoor air introduced. The heat built up in the building walls and roof during the day is thus dissipated at an operating cost about

one thirtieth that of running the cooling equipment. The manufacturer claims the "night purging" system saves as much as 35% of operating costs.

Meantime, architects continue also to bend stubborn nature to their purposes in attempts at greater hot-weather comfort. Among the most ingenious of such proposals is one, as yet untested, by New Orleans' Architects Curtis & Davis. The drawing at the left shows how they would plan to get natural ventilation and breeze through a quadruple-loaded corridor plan.

DEWEY C. MEARS



THIS IS ONE OF THE FIRST SCHOOLS DESIGNED FOR AIR CONDITIONING

In fact, the 240-student Belaire elementary school in San Angelo, Tex., is one of the first buildings of any kind really to be designed specifically and carefully for air conditioning.

Belaire's compact round form, its literally central system, its easily balanced distribution with all duct runs short and similar, and its wall shading are so economically sound that in this case air conditioning has been taken out of the luxury class as far as price is concerned. Total sq. ft. cost of Belaire school, including fees, was \$9.55 per sq. ft. Of this, the full air conditioning, both heating and cooling, accounts for an estimated 98¢.

Note: horizontal shading, usually a futile gesture against east-west sun, works

here only because: 1) the overhangs are a phenomenal 45' wide at the critical south-east-southwest points; 2) San Angelo is far enough south for the sun's arc to ride relatively high in the sky; 3) the school is not used in early morning or after 5:30 P.M., times when even southern latitude and 45' eaves do not protect the wall.

Designing closely around a mechanical feature would be a very questionable practice if it compromised the school's essential and first function: the education of children. But Belaire is also unusually nice simply from the viewpoint of its design as a school. Asked what has proved to be the building's outstanding feature, G. B. Wadzeck, schools superintendent, names its over-all flexibility for educational needs.

This is not chance; both architects and client were repelled by the idea of designing around a mechanical core instead of around children. Superintendent Wadzeck describes a fruitful conference which Architect Donald Goss opened by stating the economic case for a compact central heating, plumbing and air-conditioning core; Architect William Caudill then threw in the thought that the core space must not be wasted as school space; Dr. W. B. Rountree, a school board member, suggested the mechanical equipment be lowered into a central basement; Superintendent Wadzeck proposed a minimum basement with the ceiling above ground and a stage over part of the mechanical core; Caudill said the stage could serve

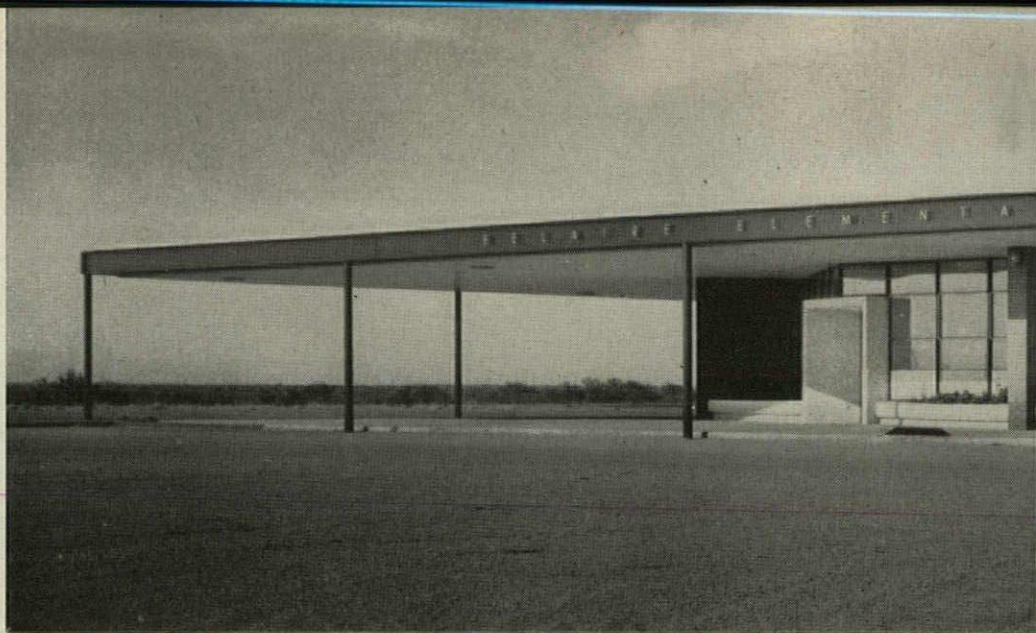
by itself as a small assembly room and dining area, and could become a stage proper if some of the walls dividing classrooms were moveable so several rooms could be thrown together for auditorium seating (see plan). "This one development," says Wadzeck, "can be attributed to the thinking of four to six people. The board, administrative personnel and architects really worked as a team on this project."

The reason for fully air conditioning Belaire was its location close to the flight pattern of a nearby air base, a site forced by tremendous residential building in the area in spite of the noise. Besides eliminating the roar of aircraft from the classroom, the full air conditioning has brought other dividends such as dust elimination in a dust storm area, eagerness of substitute teachers to fill in at Belaire, and a generally chipper, unwilted atmosphere after the thermometer began hitting the high nineties in April and May. It is too soon to determine whether the cooling has any effect on children's health or achievement.

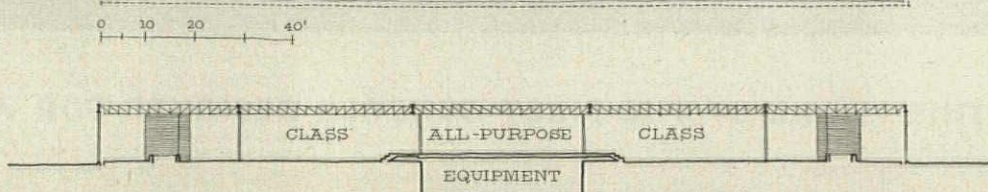
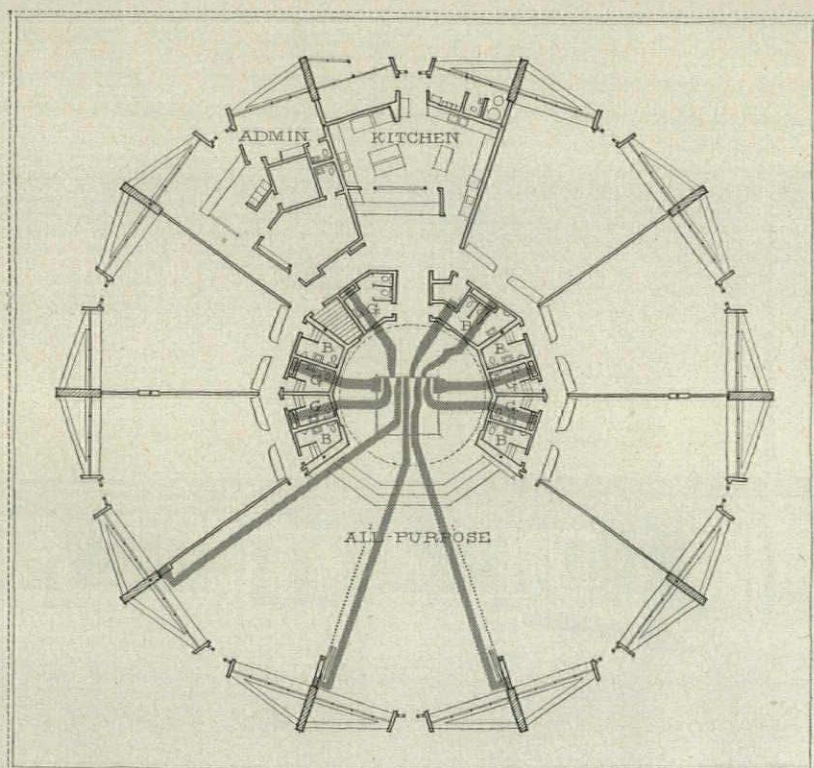
Each of the school's ten spaces—classrooms, kitchen, office—is separately zoned with room thermostats actuating ten dampers on the air handler. The central package consists of one fan, one 40-ton compressor and a boiler. The cooling tower is forced draft, placed on the roof directly above the core. Average temperature is held at 76°; regulation is controlled by the principal. Comfortable conditions are established within 15 minutes from start-up, so continuous operation is unnecessary. When expansion is needed, a similar second school unit of ten classrooms will be built.

The enclosed ground floor area is 13,650 sq. ft.; the basement 800 sq. ft. Outdoor covered area, which serves as shaded play space as well as wall protection, is 5,572 sq. ft., which was figured at one half in computing sq. ft. costs. Construction cost, including fees, kitchen equipment, and paving, was \$191,122. Of this sum, air conditioning costs came to \$19,800. Costs per ton were \$495 against an average of \$660 for the area.

Architects: Caudill, Rowlett, Scott & Associates and Donald R. Goss Associates; structural engineer: A. M. Martin; mechanical engineers: Kenneth Eschman and Tippet & Gee; general contractor: Burk Construction Co.

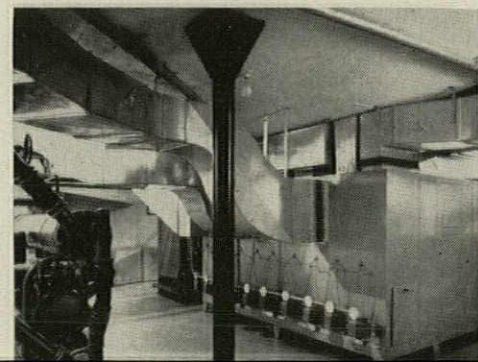


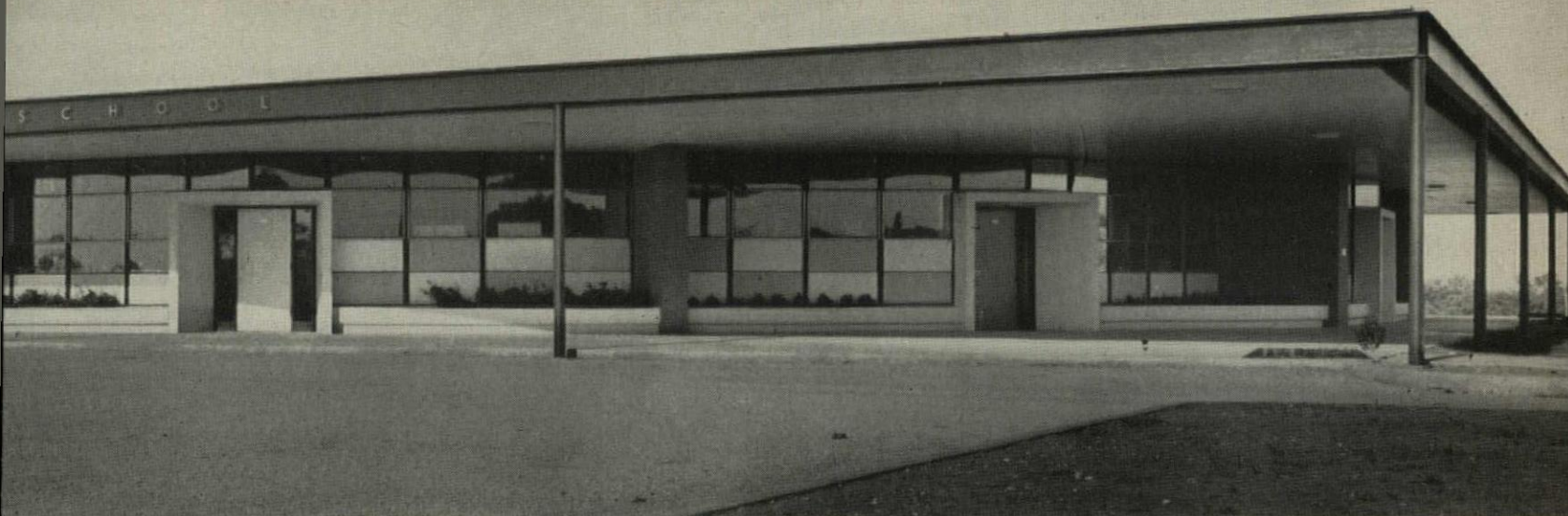
PHOTOS: DEWEY C. MEARS



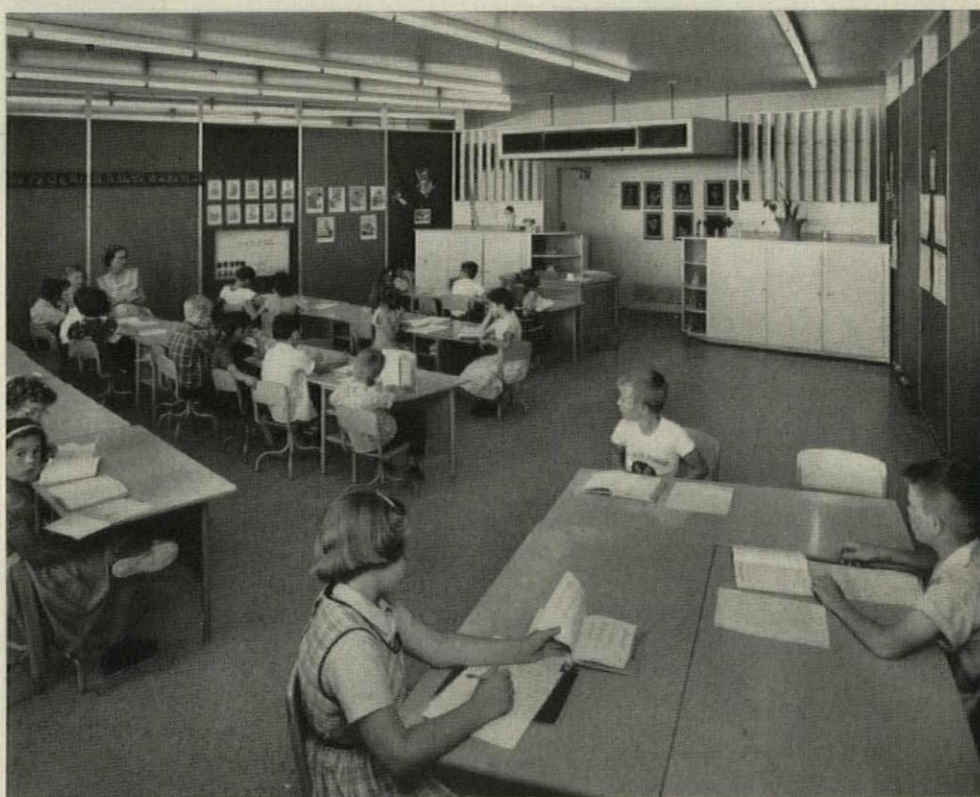
Raised stage has dining tables stored in wall behind curtain. Return air has very short run, through stair risers.

Equipment is centralized in basement under core. Round-the-compass orientation requires separate zoning for each room.





Overhangs around building give 45' of horizontal protection at critical solar points, create necessary shaded play space. In more northerly latitude, vertical east-west shading or screening would be mandatory for equal operating economy.



Classroom view shows interior supply duct. Flanking acoustic baffles and cabinets protect doorless rooms at "corridor."

Planting boxes formed by concrete seats flank each classroom exterior door, make knots of sociability in shaded play space.



Windows and exterior doors are all deeply shaded. Most equipment is movable; at first teachers shifted it almost daily.



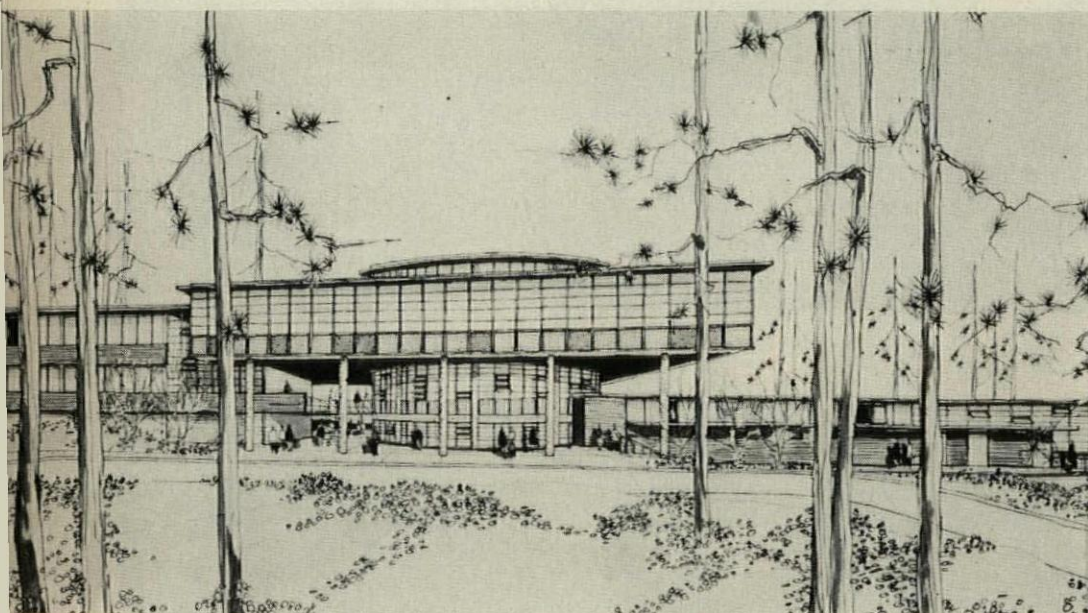
"We wanted to design a high school that would get away from sameness to other high schools and allow its students a possessive feeling they could express by saying 'I come from Headland High, the one with the round library and the bridge.'"

Architect Richard Aeck, discussing the school design shown below, has also indirectly summed up one of the most important functions of school meeting places. For general meeting places, more than any other school spaces, can best express visibly the individuality everyone pridefully wants in his organization; these are the places that do most to set the tone of a school and that tell students whether the place is really theirs, not as educable statistics but as people who count. These spaces are the scene of that surge and flow of gregariousness that is at least half the meaning of "school."

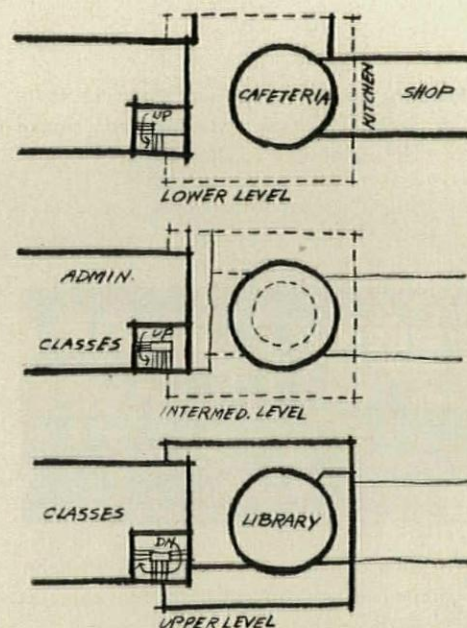
ALEXANDRE GEDIGEN



NEW SHAPES FOR SCHOOL MEETING PLACES

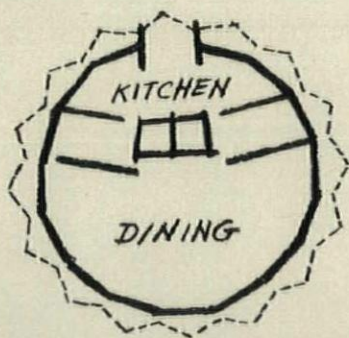


ROUND CAFETERIA, library and informal milling ground at Atlanta's Headland High School make the most of a dramatic (and difficult) site. They are also shrewdly designed for expansion of a 500-student body to 1,000: the library by absorption of extra lounge space, the cafeteria by addition of a balcony. Now under construction, this is part of a building that, including fees, will cost only \$10.90 per sq. ft. Aeck Associates, architects.

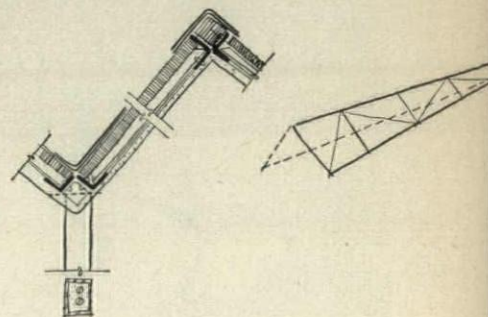
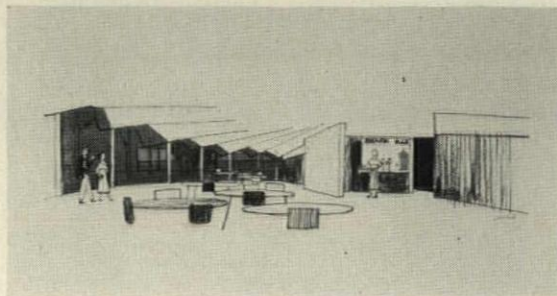
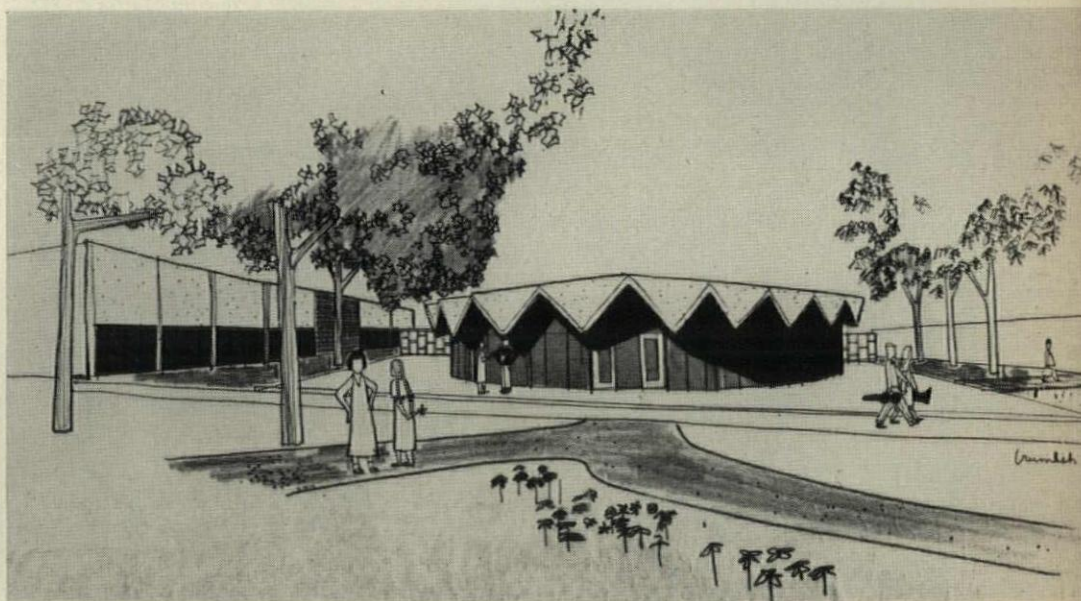




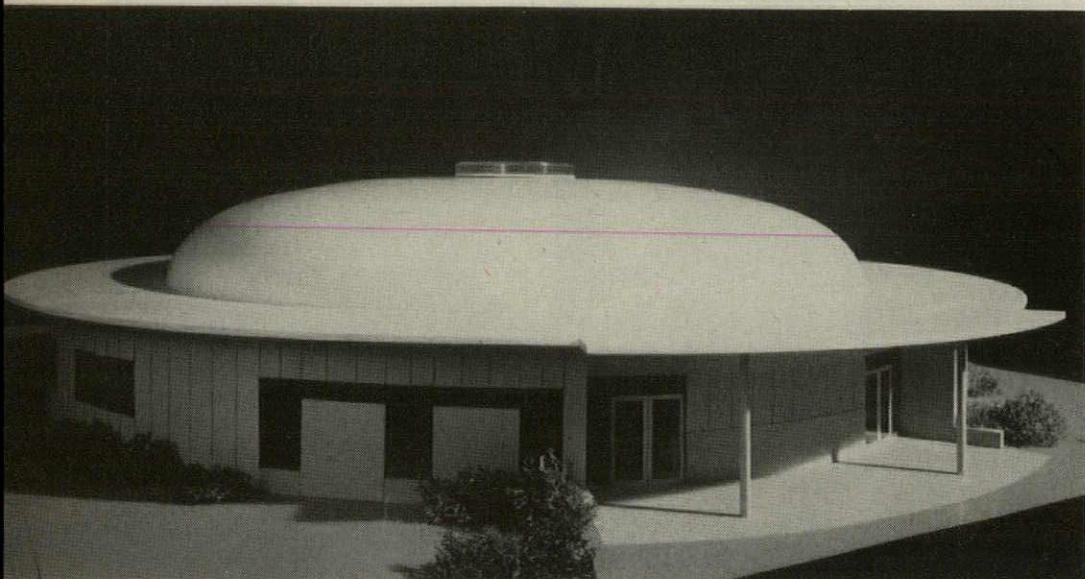
Cafeteria at work; high school in Northport, L. I.; Ketchum, Gina & Sharp, architects



FLUTED CAFETERIA is designed as focal point of 500-student campus high school in Kirksville Mo. Roof framing in wood or steel could be with simple ridge and valley beams but architects prefer more economical system illustrated—light, tilted prefabricated steel trusses which bear at the center on masonry panels, at the edge on concrete-incased tube sections. Insulated deck would span between main chord members, in plane of the truss, avoiding combined stresses in web members and keeping thickness of entire framing, decking and roofing under 6". Framing with folded concrete plates instead of trusses, to save steel, would be similar in erection method; for delicacy, steel columns would still be used. Hellmuth, Obata & Kassabaum, architects.

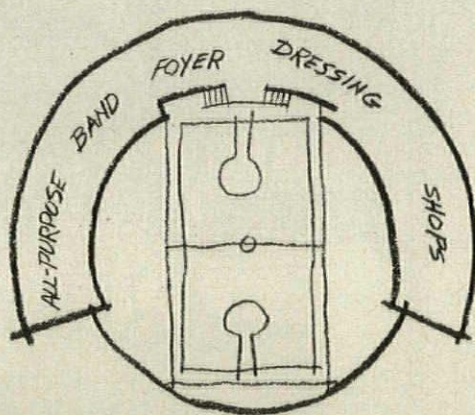
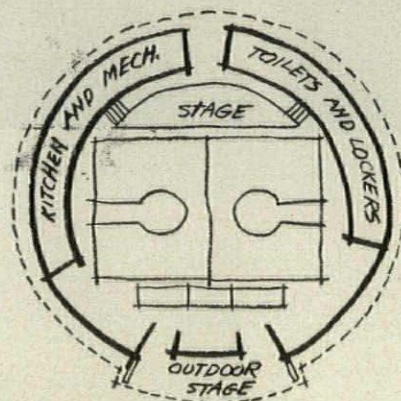


LENS-ART PHOTO

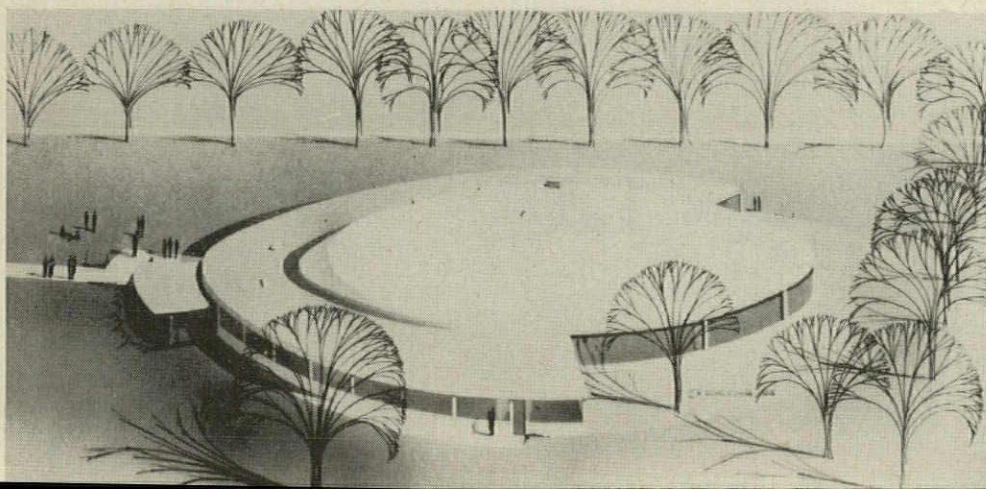


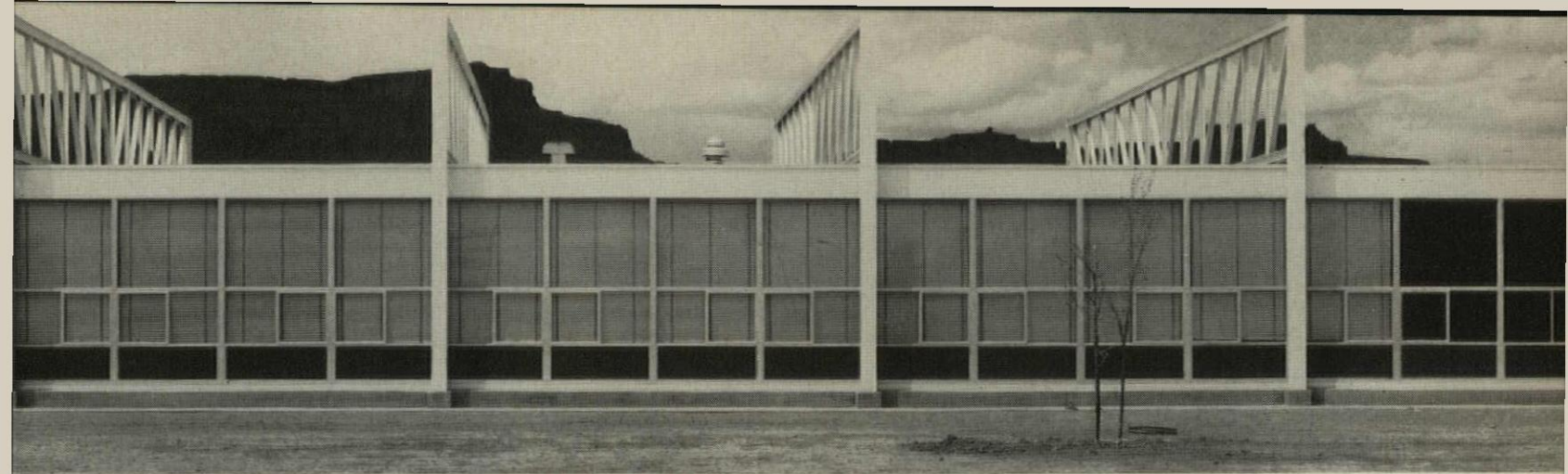
MULTIPURPOSE "HIVE" was designed to be used for wide range of activities, 12 hours a day, six days a week, all year, at eight Pontiac, Mich., elementary schools previously lacking activities areas. They were to serve also as community centers. Bids last spring came in too high (\$155,000 each) however, and units are to be built as rectangular, laminated wood truss structures. Architect attributes high bids to contractors' unfamiliarity with concrete

dome structure, still thinks hive design is potentially very economical. Deck over perimeter rooms would be poured concrete, forming tension ring; dome would be sprayed concrete over "bird cage" reinforcing, with thickness shading from 10" to 3" at central (shutter equipped) sky-dome. Interior height of 24' would accommodate basketball trajectory. Area of 7,234 sq. ft. is very efficiently planned. H. E. Beyster & Assoc., architects.



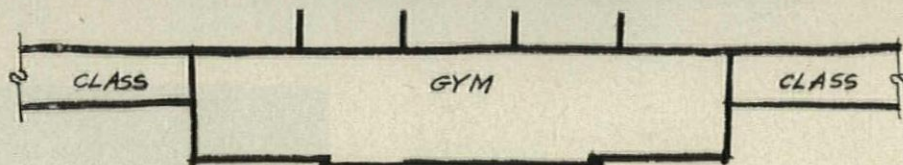
DOMED GYM and shops building for Marlow, Okla. high school is poured thin-shell concrete. Although similar to "hive" shown above, its area (18,507 sq. ft.) is more than twice as great. Now under construction, cost is \$116,897 including fees; \$6.25 per sq. ft. Similar 15,665-sq. ft. gym-cafeteria by same architect for Amber, Okla., bid in by same contractor, reaped \$5,000 saving on formwork reuse; \$5.27 per sq. ft. Extraordinarily low costs are result not only of basic system but economy finishes and careful detailing: for instance, concrete bleachers at \$3.50 per seat instead of usual \$10 to \$12. Domes are notoriously difficult acoustically; on this point, optimism of architects both for this structure and "hive" remains to be proved. R. Duane Conner, architect.



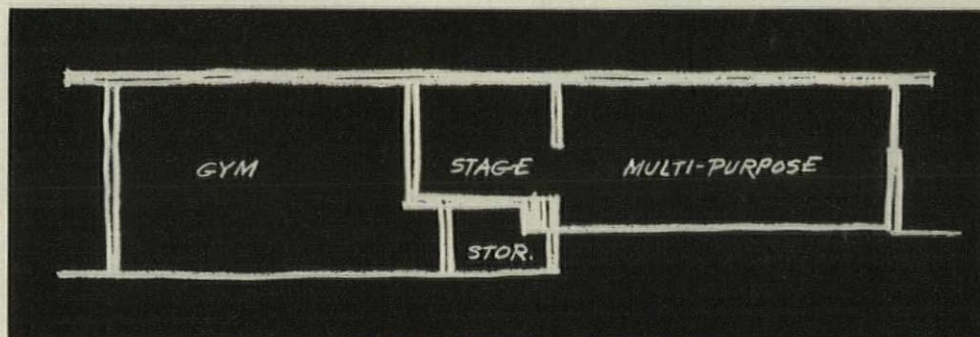


CHAL RUMEL

DUG-DOWN GYM with framing exposed above achieves great elegance in combined elementary-secondary school at Green River, Utah. It also helped achieve great economy. Wall repetition, lightness of structure and factory fabrication brought cost of school to \$10.42 per sq. ft. in desert site far from materials sources and labor market. The gym-assembly interior also looks refreshingly clean with roof framing kept outside where it makes a fine landmark and clearly separates elementary and secondary wings. Dean L. Gustavson & John W. Sugden, architects.



SPLIT-LEVEL WING in elementary school at Northport, L. I. has playroom on low side of slope and cafeteria-assembly room on high side, the two fitted together like a jigsaw puzzle. Space under assembly stage accommodates gym instructor's office and storage rooms. There is fold-up bleacher rear seating in assembly. Ketchum, Gina & Sharp, architects.

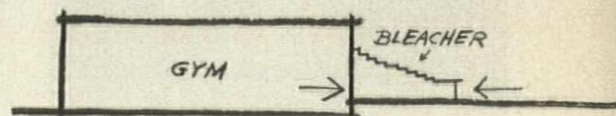
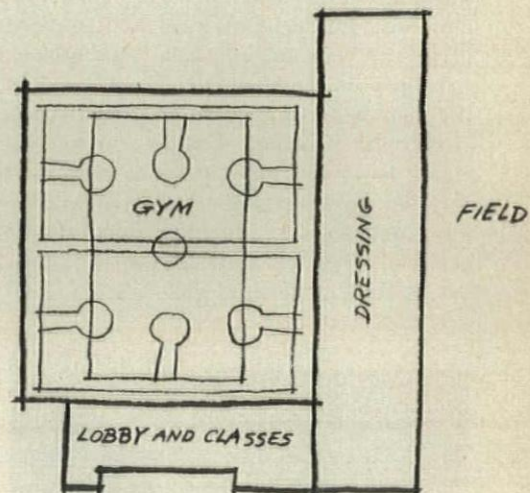


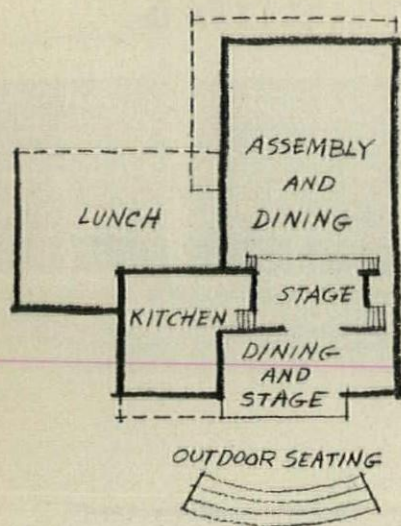
STUART WEINER



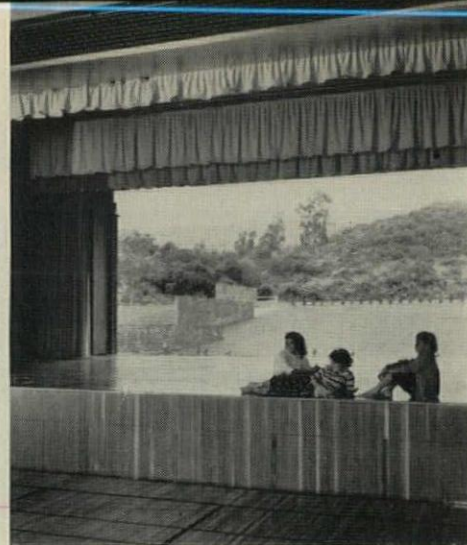
INDOOR-OUTDOOR GYM at Scottsdale, Ariz., with stadium bleachers at building wall, is arranged so same ticket booths handle crowds for indoor or outdoor games and so locker rooms are equally convenient to field or gym. Even the press

box, at gable, views either way. Lobby divides to make two classrooms. Integrated bleachers cost \$4,500, a third the estimated cost of a separate grandstand. Gym and bleachers cost \$9.60 per sq. ft. excluding fees, Mel C. Ensign, architect.





INDOOR-OUTDOOR ASSEMBLY and cafeteria addition unit for elementary schools in Los Angeles is splendid example of typification without standardization. Same materials, construction, detailing and basic planning are adapted to differing sites and plants, bringing repetition economy without sacrificing specific needs. Note delightful outdoor lunch provisions. Photo shows indoor-outdoor stage by same architects at Los Angeles park department's Eagle Rock clubhouse; school units will have similar feeling. Richard J. Neutra & Robert E. Alexander, architects.



JULIUS SHULMAN

© EZRA STOLLER

ULRIC MEISEL



GLASS GYM at Tyler, Tex. junior high is next thing to covered open space. This is beloved building. Students use it as chief social hangout of school. It is left open week ends (nothing has ever been stolen or broken), is also favorite place for banquets, dances, shows. School principal reports it is cool and breezy in summer (windows open on four sides). Low sun usually gives enough heat in winter; warm-air suspended units give good evening heat. Big end panes are $\frac{1}{4}$ " tempered plate; in year of use none has broken. Principal is enthusiastic about asphalt tile floor because it permits all activities, even roller skating. Canvas curtain dividing boys' and girls' side has been used only few times; experience showed division was unnecessary during simultaneous physical education classes. Caudill, Rowlett, Scott & Associates and Bruce & Russell, architects.

ULRIC MEISEL



OPEN PLAYROOM at elementary school in Darien, Conn. (AF, Dec. '54), was experimental with provision for future closure if necessary. After two years of use, school officials would not enclose it—even if cost of \$8,000 (without heating and lighting) were not a factor. Only ten days a year have been too bitter for use. Physical education teacher says it is sometimes tough on him in winter but worthwhile because children enjoy it so much and it seems so obviously good for them. Any effect on health has been to the good. Ketchum, Gina & Sharp architects.

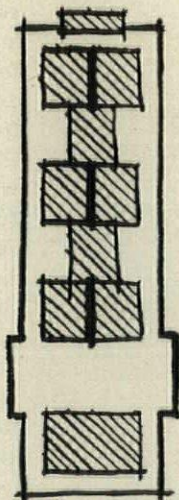


CORRIDOR LOUNGES for students at Edsel Ford high school in Dearborn, Mich., are scaled to conversational groups. This is thoughtful large-school refinement of the corridor lounge idea first used in famous Crow Island elementary school. Student common rooms, as school versions of "living room" are called, seem to be especially appreciated and used along corridor main streets. Eberle M. Smith Associates, architects.

MARION SMAK



CANTED CORRIDOR WALLS, formed of tilt-up concrete slabs, yield interesting exhibit space at junior-senior high school in Amityville, L. I. Same slabs form acoustic and lighting baffles in adjoining auditorium. Fletcher-Thompson, architects.

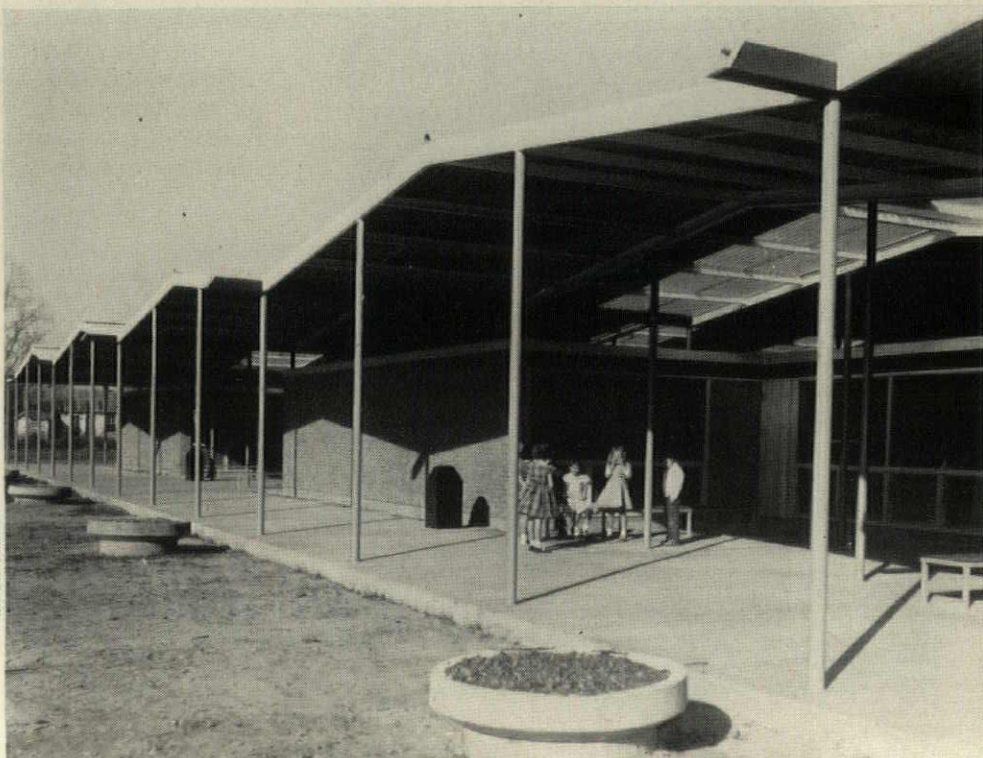


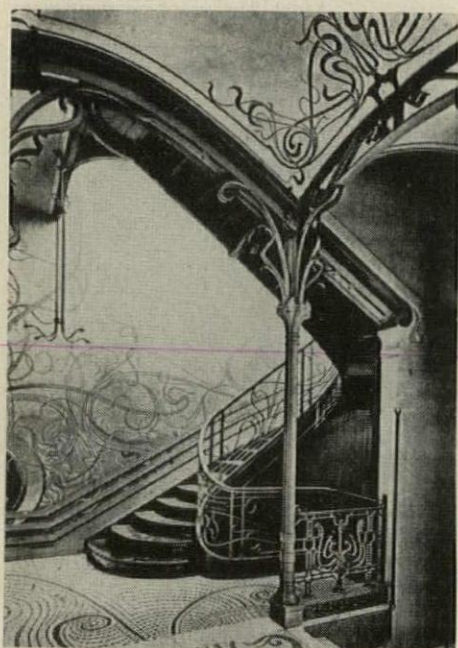
OUTDOOR CORRIDOR ALCOVES at San Jacinto elementary school in Liberty, Tex., serve much the same vital function of providing for spontaneous get-togethers as indoor corridor lounges. School is in hot, rainy area. Note how roof spouts drop their waterfalls into stone-filled boxes, a nice example of sensitivity to what children will enjoy. Caudill, Rowlett, Scott & Associates, architects.

DEARBORN-MASSAR



MAIN ENTRANCE HALL at Baker junior high in Tacoma, Wash., is extra wide for noonday square dancing, which is usually more enthusiastically engaged in than photo would indicate. Robert Billsbrough Price, architect.

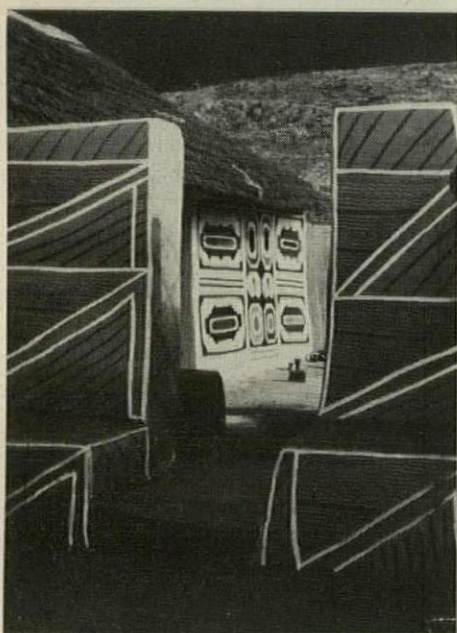




It is no easier to wed painting, sculpture and the other fine arts with European architecture than with US architecture, although the tradition is closer at hand in Europe

ART IN ARCHITECTURE*

A BOOK REVIEW BY WALTER McQUADE

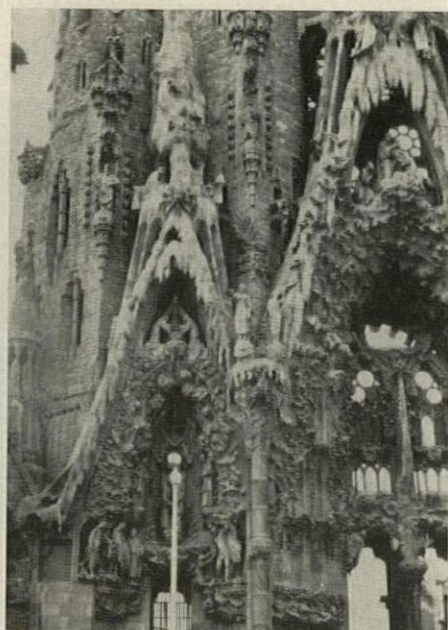


In the three photographs to the left are works of two sophisticated European architects, Horta (1) and Gaudi (3), and one very unsophisticated African architect, a native in the Transvaal who built himself a hut, then painted the walls in vivid, gutty patterns (2). All three examples are anything but functional architecture; they are eccentric, delightful—perhaps great—art. At any rate, they are buildings which are considerably more than merely efficient unto the day's activities within.

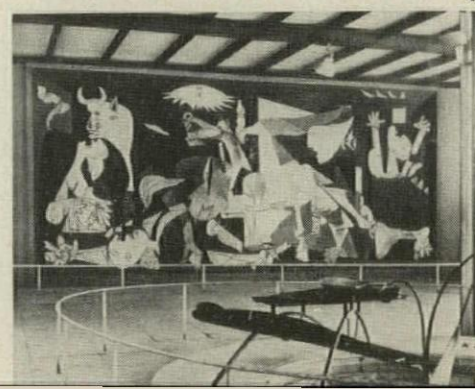
Are these the pictures that clients and the general public have in their minds, when they mutter in the public press and consumers' magazines for something more satisfying in modern architecture? Are they calling not for bread, but for cake, not for stripped functionalism but for a return to deliberate visual excitement in the new buildings which surround them, a return to "artistic" architecture?

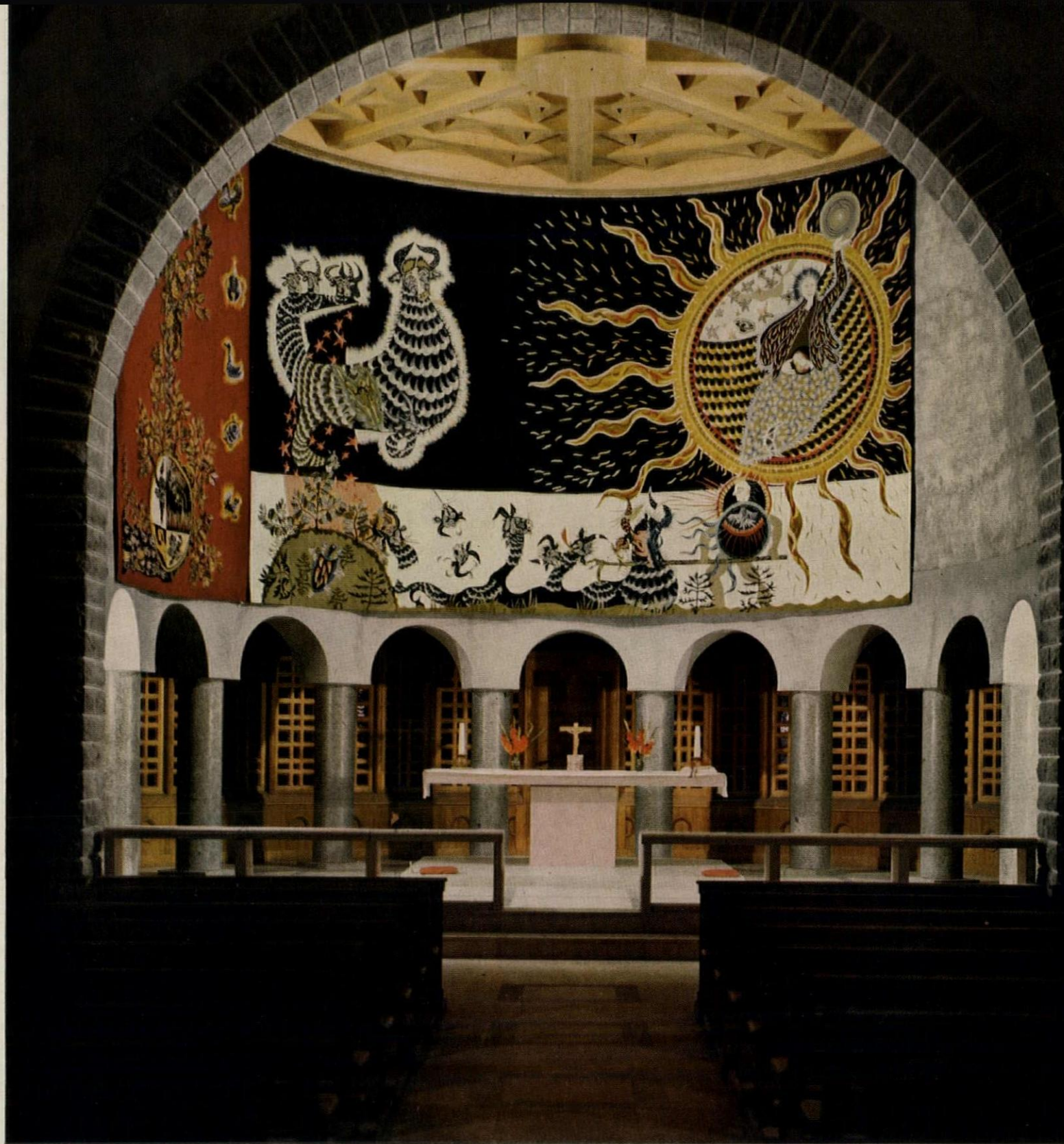
If this is so (and it should be pointed out that sighs of "It works, but it looks dull" are coming not only from clients but from budget-bound architects themselves), the logical place for American professionals to look for leadership is Europe. In America, art and architecture were married briefly, but that broke up in the twenties, and the estranged pair now meet only occasionally at cocktail parties and symposiums. But European artists became architects in the fifteenth century and European architects became artists in the succeeding four centuries, so the tradition of "synthesis" might still survive somewhere under today's functional cloak.

A search in Europe for ways to bring art back to architecture evidently is what has inspired Paul Damaz to produce this handsome, profusely illustrated book. But the result will help American readers only a little, and the basic message of the book is ironic. In the only examples of "synthesis" of art and architecture shown which come close to matching the gigantic achievements of the European past, there is very little real partnership indicated between artists and architects. In Lurcat's tapestry in the Church at Assy (5) or in the chapel Matisse designed at



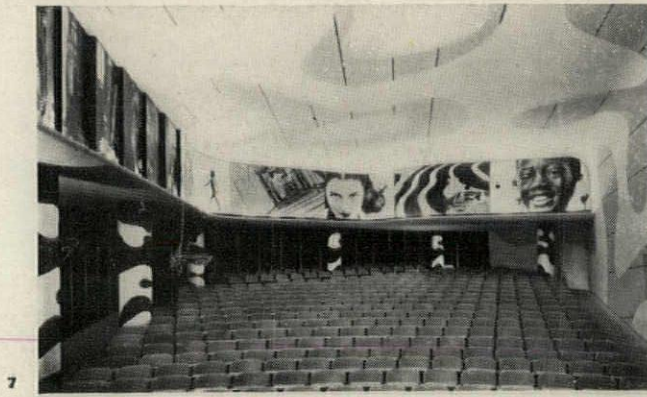
* "Art in European Architecture." By Paul Damaz. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 228 pp. 8½" x 10½". Illus. \$12.50



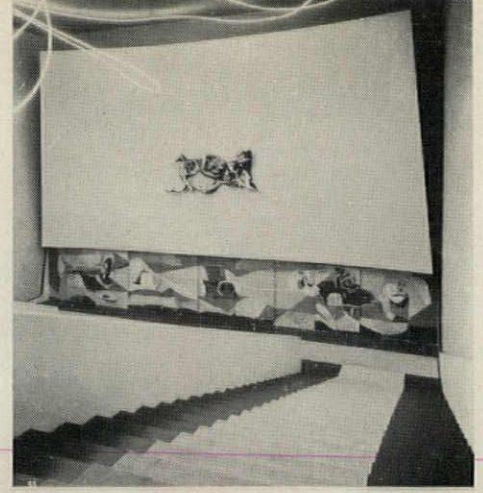


1) Staircase in Brussels, 1893, by Victor Horta. 2) Entrance to a Ndebele's House in the Transvaal. 3) Basilica of the Holy Family in Barcelona by Antonio Gaudi. 4) Mural *Guernica* by Pablo Picasso, in Spanish Pavilion at Paris Exhibition, 1937. Fountain in

foreground is by Alexander Calder. 5) Tapestry by Jean Lurcat, "The Virgin and the Dragon," in sanctuary of Church of Our Lady of Grace, Assy, France, 1950. Architect: Maurice Novarina. 6) Glazed tile, "St. Dominic," by Henri Matisse, in same church.



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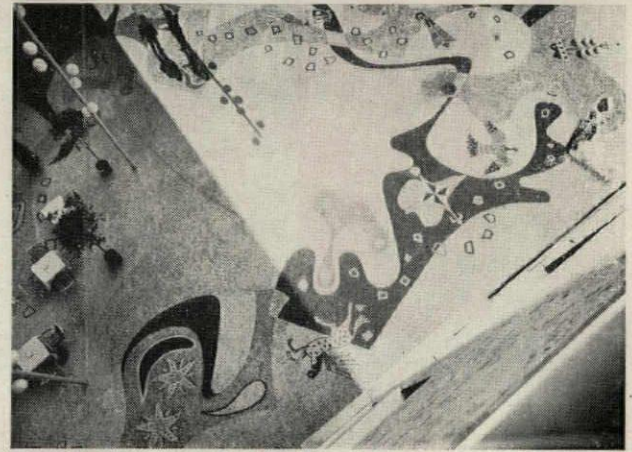
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Vence (AF, May '52) the architecture is nothing special; the art is overwhelming. These artists did not share a conception equally with an architect, but took over. They are overriding geniuses, to whom any recent tradition of a new architecture is merely a minor detail. The question of integration is unanswered; Architect-Artist Le Corbusier's statement in the book's foreword, "Painters and sculptors live their own lives," is emphasized.

On a lesser plane there is some excellent work done by other artists and architects together for European exhibits and shows, but most of it seems as transitory as the shows themselves. And even the best examples of art in European architecture today, such as those shown on these pages, are rather easy to classify.

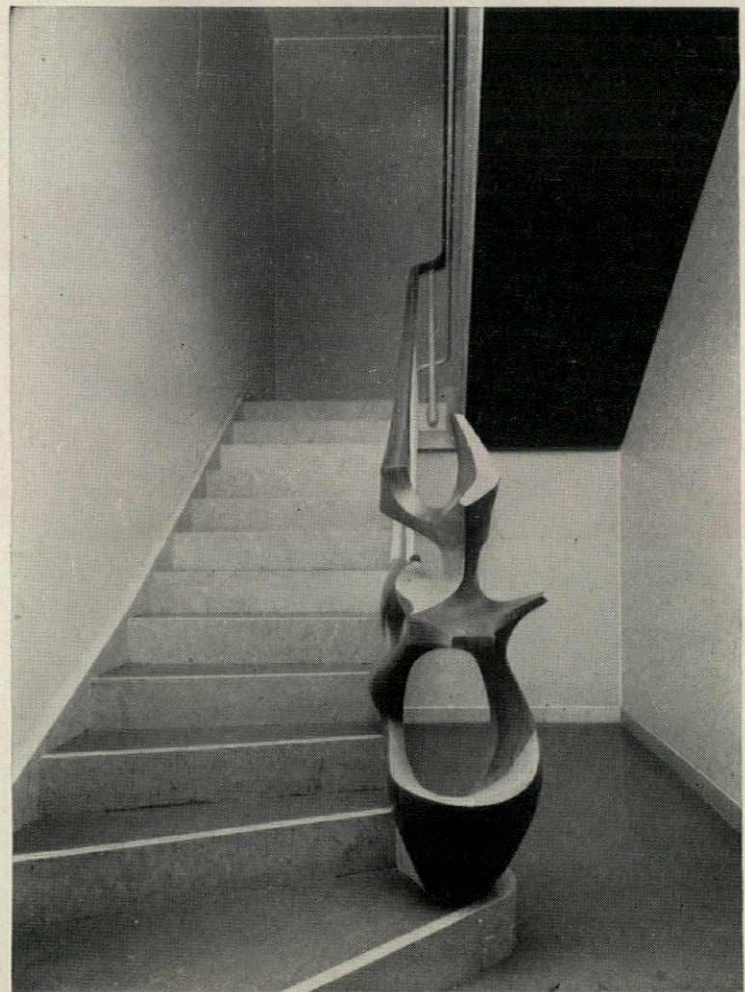
7) Movie house in Zurich, Switzerland, 1949. Architect Werner Frey also did the photomontage and free-form painting. 8) Staircase at the Ninth Triennale of Milan, Italy. Luminous sculpture by Lucio Fontana; ceramic sculpture by Neto Campi; mural by Aimone. Architects: Luciano Baldessari and Marcello Grisotti. 9) Mosaic floor of the Swiss Center in Milan Italy (1953). Armin Meili, architect; mosaic by Alberto Salvioni. 10) Play sculptures in Stockholm Parks. Egon Moller-Nielsen, sculptor. 11) Sculpture, "Continuity," by Max Bill at the Agricultural and Trade Fair in Zurich, 1947. 12) Sculptured stair rail in apartment house in Milan; Giulio Minoletti, archi-

tect, Antonia Tomasini, sculptor. 13) Wood relief on wall of furniture building at Agricultural and Trade Fair in Zurich, 1947; Hans Fischli, architect; Richard P. Lohse, sculptor. 14) Metal relief on auditorium wall at 1947 Zurich fair; Hans Fischli, architect; Carlo Vivarelli, sculptor. 15) Berlin Pavilion of the German Transport Exhibition in Munich, 1953. Eduard Ludwig, architect; H. Uhlmann, sculptor. 16) War Memorial in Milan, Italy, 1948; Belgiojoso, Peressutti and Rogers, architects. 17 and 18) Sculptured steel frieze on front elevation of Rome railroad station; architects: L. Calini, M. Castellazzi, V. Fadigati, E. Montuori, A. Pintonello, A. Vitellozzi; sculptor: Amerigo Tot.

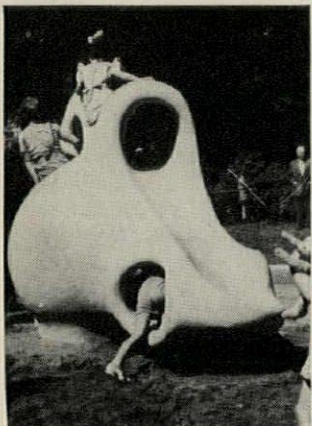


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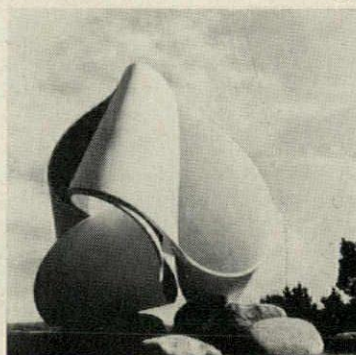
THE SOFT CURVE



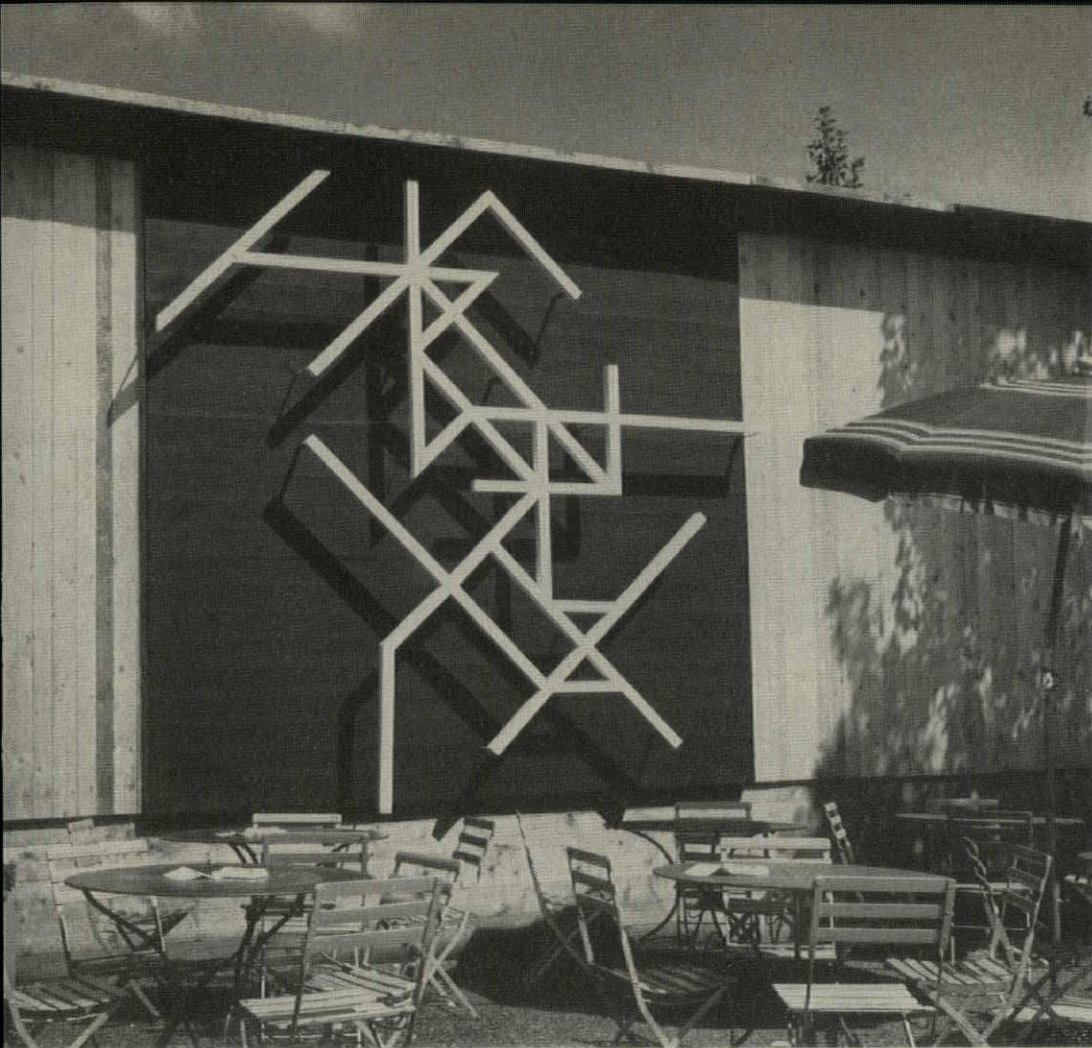
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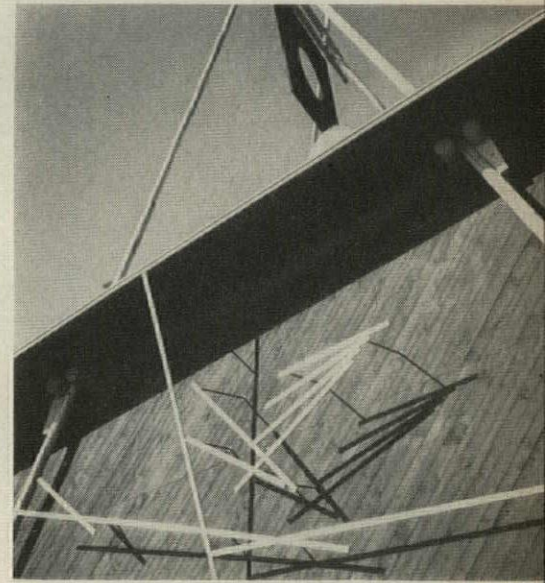


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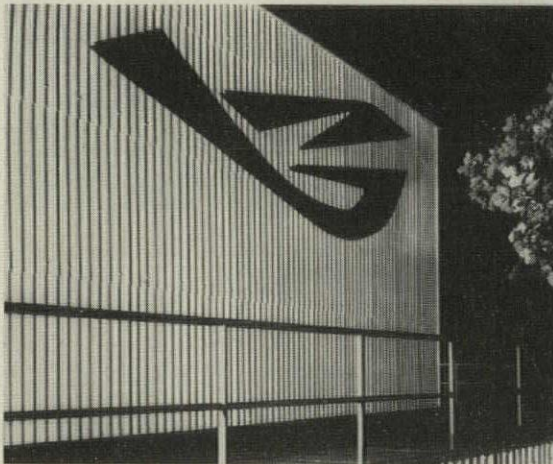
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PHOTOS: 1 & 4) COURTESY MUSEUM OF MODERN ART; 2) CONSTANCE STUART; 3 & 10) P. DAMAZ; 5) LIFE; 6) BEHNHARD MOOSBRUGGER; 7) H. WOLF-BENDER'S ERBEN; 8) ARAGOZZINI; 9) FORTUNATI; 11, 13 & 14) HUGO P. HERDEC'S ERBEN; 15) KESSLER; 16) ARAGOZZINI; 17 & 18) A. CARTONI.



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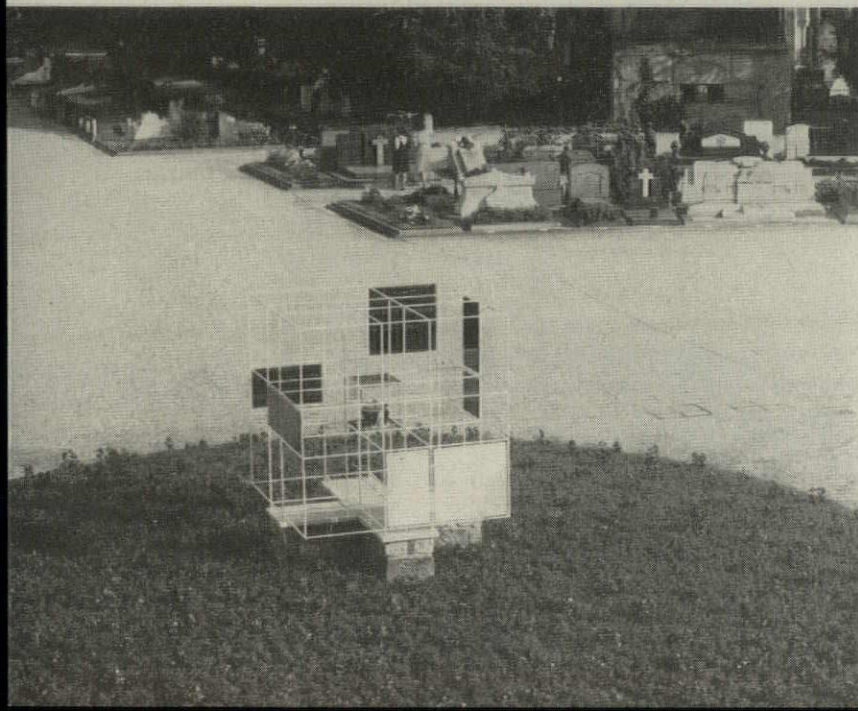
THE HARD LINE



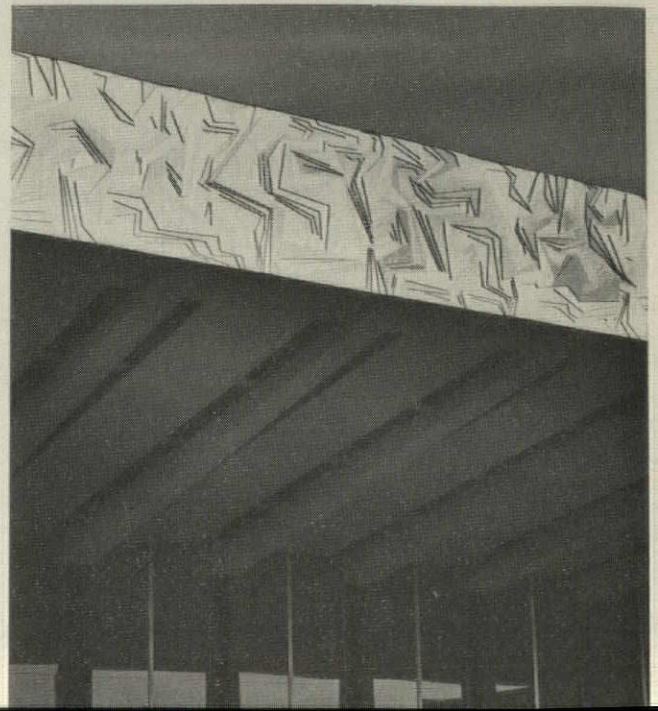
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4
Sketches of a design for the Library of Baltimore, estimated; if wanted throughout, at 27,000.—
proposed to be built of Brick & stone.

North Elevation. - M. This
sort of Lapola has become very common & is very
expensive.

3 } Preferable & more economical
Cupola?—

windows as on Calvert street.

Plan of the upper floor.

Architectural floor plan of the interior of the Lincoln Memorial. The plan shows the upper floor with a large semi-circular dome and the ground floor with a large semi-circular dome. The plan includes dimensions for various rooms and corridors, such as 15.0, 22.0, 20.0, and 25.0. The plan is labeled "Upper floor" and "Ground floor". The plan is oriented with the entrance at the top.

Plan of the tower floor

surface of Books

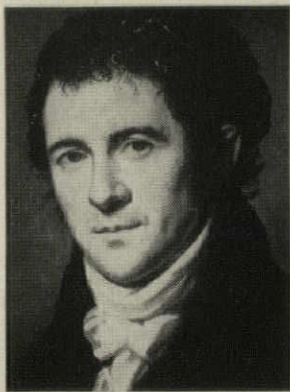
Cases.

$$\begin{array}{r} 1/321 \\ 253 \overline{) 32} \\ \underline{253} \\ 3A.6 \\ 15 \\ \underline{31.6} \\ 3564 \\ 25 \overline{) 1650} \\ \underline{1650} \\ 652 \\ 9/31.5 \text{ 0.47} \\ 90.5 \text{ Yards.} \end{array}$$

100 Books them average
superficial Yards

90,000 Books.

W. A. Phelps Arch.
June 2. 1887.



AMERICA'S FIRST ARCHITECT

Talbot Hamlin's great book about Benjamin Henry Latrobe, a master of all building trades, wins the first Pulitzer Prize for architecture

by FREDERICK GUTHEIM

Talbot Hamlin's Pulitzer-prize-winning biography* of America's first professional architect, Benjamin Henry Latrobe, is the perfect matching of author and subject. The enthusiasm which is displayed on every page for Latrobe's efforts is needed, for his story "is the tragedy of a man devoted to the ideals of imaginative planning in a country where mere improvisation was still the rule." It is still the rule, and the relevance of the book is up to the minute.

Latrobe was not only a creative genius in architecture. He was in himself a virtual one-man building team. He earned by far the greater part of his livelihood as an engineer of waterworks, canals and steam pumps and machinery; as a master builder and shipyard manager; as a city planner. He was a prolific reporter of the American scene who left thousands of sketches and water colors, a medalist, a sensitive painter. He moved in the most practical and powerful circles of his day, the friend of presidents, bankers, merchants, bishops, industrialists, inventors. To recreate this great personality, and to trace his career in the morning of America, neglecting none of it, is an immense literary accomplishment in which interest has been sustained and clarity preserved with no sacrifice of scholarship.

*BENJAMIN HENRY LATROBE. By Talbot Hamlin. Published by Oxford University Press, 114 Fifth Ave., New York, N.Y., 633 pp. 6" x 9". Illus. \$15.

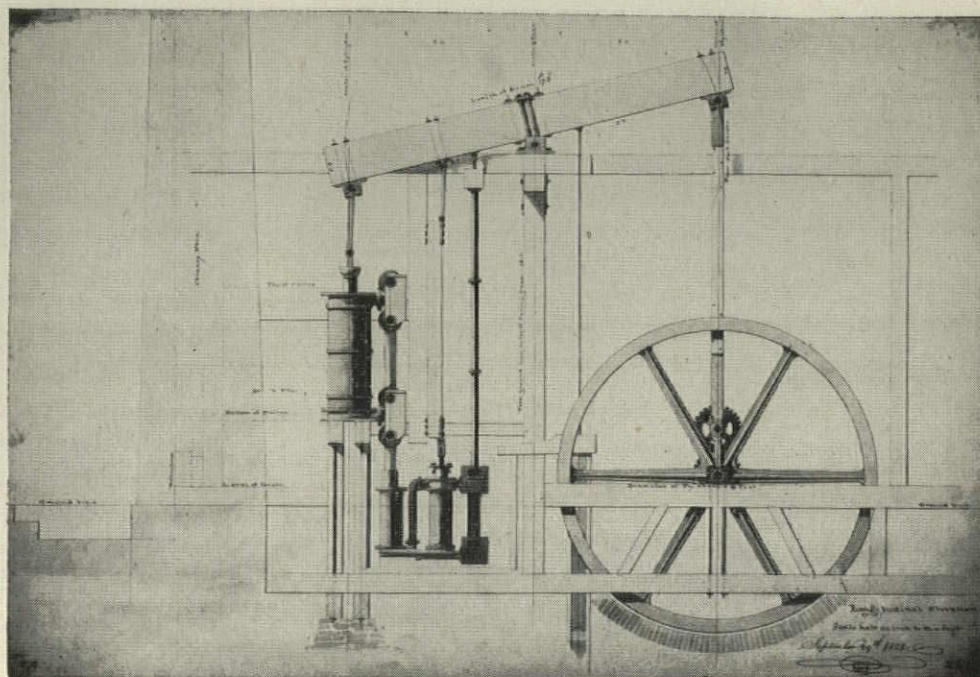
Sketchbook pages show Latrobe's suggestions for the library of Baltimore (left) and for a naval engine (right). Note his practical comments on his alternate designs for the library cupola and his calculation of the square yardage of wall space available for books (905 sq. yd. for 90,500 books).

Latrobe's most significant contributions to the developing new world, however, were in the field of architecture. His work on the US Capitol and the White House; the Bank of Pennsylvania; the Baltimore Cathedral and the Exchange—these are his monuments. To these should be added his many outstanding private houses, especially those for Van Ness, Taylor and Pen-nock—the last, in Norfolk, being the architect's first design in America and the one in which he stated with great force his major contribution to residential planning. But with these brilliant accomplishments, Latrobe died "nearly destitute and almost forgotten." That tragedy, and what caused it, and how it illuminates this rare individual and the life of his times, is Talbot Hamlin's theme.

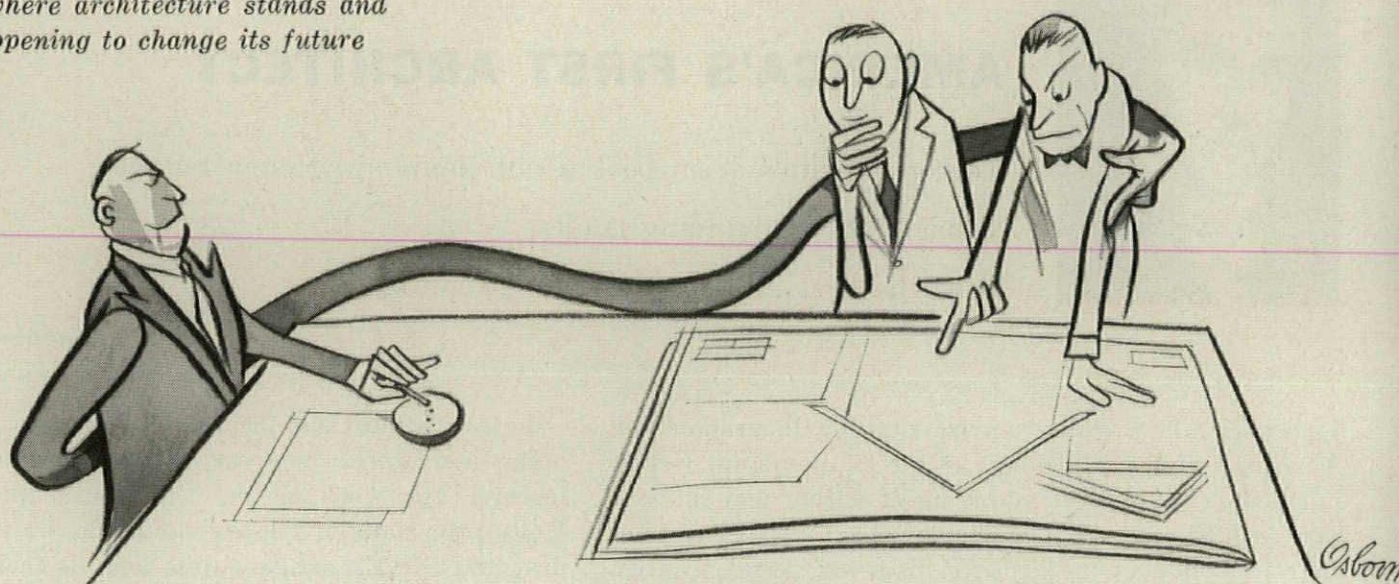
* * *

The Latrobe who arrived in Hampton Roads in the early spring of 1796 was a fully trained, experienced, mature architect and engineer in his early thirties, a widower and the father of two children. His family background and education were exceptionally broad, and included Germany, France and Italy as well as Latrobe's native England. "Original, accomplished and thoroughly prepared for larger and more

continued on p. 178



*Another in a series of articles
exploring where architecture stands and
what is happening to change its future*



THE LENDER'S INFLUENCE

For himself, he may like his buildings modern but for his borrowers, he prefers a cautious mediocrity. What is this strange power he has over architects, product development and cityscape?

by FRANK FOGARTY

Some 25 years ago, Frank Lloyd Wright, in talking about boldness in architecture, remarked that there was nothing more timid than \$1 million. Then he paused, thought a bit, and amended the statement. "Except \$2 million," he said.

Far from quipping, Wright could hardly have been more serious when he turned the phrase. As a working practitioner in the age of the "genius architect," he had lived to see the near extinction of the bold, self-financed client who had first given him his head on the prairies of the Midwest in the early 1900s. The captains of industry, whose fortunes had thrived on risk, had all but vanished—victims of the income tax, the growth of group action, and the other leveling winds that had blown through the economy. In their place, Wright found a new class of client, one that now borrowed its money and depended on a breed of lenders that had little but suspicion for artistic genius.

For many people concerned with architecture, Wright's judgment has long been a convincing one. Nodding in agreement, they will say that capital does, indeed, breed caution, and they will point to selected samples to prove it. They have heard money talk and, to them, its institutionalized voice has droned incessantly of boats that mustn't rock and of looks before you leap. No, they will say, capital is no kin to architectural innovation. Given its stake in the status quo, how could it be?

It's a convenient thesis, to be sure. But it happens to have one flaw: it is only partly true.

To anyone who looks closely at US building today,

it is soon apparent that building money and its assigned pigeonhole can't possibly make the fit they're supposed to. The role of the lender—and it is the lender who overwhelmingly controls construction capital now—shows annoying inconsistencies. True, the lender has helped to smother architectural progress and to heap mediocrity upon our cityscape. But it is also true that he has been willing to finance good design and, indeed, to build it for himself. The pat thesis doesn't even try to make sense of this; it simply ignores it. Yet the thesis survives. Why?

The answer probably lies in the fact that the hand of construction capital is not only unseen most of the time, but is unknown as well. The role of the lender is obscured by a cloud of fiscal complexities. The public sees him, at best, as an anonymous force; the architect, buffered by the client, finds him remote. What the lenders' policies are, how he implements them, how he decides what will and won't be built, are for most people questions without answers—or, at least, valid answers.

Which is strange. For in setting out to see precisely how the lender does affect architecture today, inquiry ran headlong into one unavoidable fact: no other part of the building industry can exert the influence on design that the lender can. No other part can even come close.

The power of the dollar

There are roughly 20,000 lenders in the US today who make it their business to lend on the real estate market (there are countless others which finance from time to time—individuals, philanthropic organizations, pension funds, government—but the holdings of each are relatively small). Together, these mortgagees split up a total of \$130 billion in real estate debt as of the end of last year.

Leaving to the economists the volatile question of whether this debt is out of line, the fact remains that it is huge. Last year alone, it shot up by more than \$16 billion. At today's level, it is four and a half times the fast-rising total of consumer installment credit, equal to a hefty 45% of the nation's disposable income (compared with 27% in 1951), and nearly 19% of the estimated \$700 billion that the US has invested in buildings.

Traced to its holders, this debt shows a surprising degree of concentration. Of the \$121 billion in loans on nonfarm property (\$89 billion of it on one- to four-family residences), close to four fifths of the total is owed to one group—the so-called institutional lenders (see box, p. 142). And of these only three—life insurance companies, commercial banks, and mutual savings banks—are important in the nonresidential field. (Savings and loan associations, the biggest of all lenders with about \$31 billion in mortgages, channel their funds into the residential market, mainly into single-family houses.)

Since the commercial banks are still primarily interested in shorter-term commitments—construction loans, and the like—most nonresidential builders have had just two groups of lenders to turn to for their long-term financing—life insurance companies and mutual savings banks. Out of their resources has come the bulk of the money to finance the 6,000 office buildings that have been going up each year, the 35,000-odd stores, the more than 70,000 multiple dwellings, and the 100 or so urban hotels.

The statistics alone show the results. Of the total \$22 billion in mortgages on commercial and multifamily buildings that institutional lenders now have, almost half is in the hands of the life insurance companies. Four of these alone—Prudential, Metropolitan, Equitable and New York Life—have more than 10% of the total pot. Seldom have the few had so much power to influence the shape of America's architecture.

How, exactly, has that power been used?

The fact that lenders vary from man to man, and from one part of the country to another, makes a precise assessment of their role difficult at best. Nevertheless, certain broad findings seem justified. These are the most significant:

▶ The lender's influence on architecture, where it is felt at all, is primarily negative. It is not so much what the lender wants in design as what he doesn't want. This is particularly true now, and it represents a change from 15 years ago. Where the lender would once make positive "suggestions" for altering details, he now rarely does. In a tight-money market, he can afford to make flat rejections, and move on to something else.

▶ Whether positive or negative, lending influence seems to vary inversely with the price of the building. The higher the cost, the less the lender enters in.

► As a result, homebuilding feels more of the impact of lenders' likes and dislikes than any other segment of building. Admittedly, the insurance appraisal practices of the Federal Housing Administration and the Veterans Administration—with their notorious aversion to any design innovation which the lowest-paid bureaucrat cannot understand—are a strong factor here. But a legitimate question seems to be whether it is now \$10,000—instead of \$2 million—that's the most timid thing around.

► Over-all, a lender's views on design tend to be only as conservative as his economics tell him to be. He will finance an "advanced" building—meaning one unfamiliar in planning and appearance—provided its location is good, its ownership gilt-edged, its income prospects strong. But he will turn down the same building if, on balance, the economic indications he goes by seem too weak to justify the experiment. In short, design seldom becomes an overriding consideration,

except in the project that is already marginal.

Though lenders have rarely been accused of being overly candid with outsiders, even their guarded talk can be revealing. What comes through in their conversation today is hard to miss: the safety of the dollar is uppermost in their minds; architectural excellence rates a poor, poor second.

"Who cares what an office building looks like in New York City, if it has the site and the tenants," says a vice president of New York Life. A Chicago banker insists that all he is interested in is whether the building, as is, makes a sound investment. "If it doesn't, we don't finance it. Anything other than that—trying to make changes—gets you in trouble." An executive of Metropolitan Life makes the point that they avoid setting architectural standards. "We don't want our name tied that closely to the success or failure of any project," he says. And a Boston mortgage officer puts it bluntly: "It's not our business to pioneer or to innovate. Our con-

WHERE THE MONEY COMES FROM

Of the \$121 billion owed on nonfarm mortgages today, almost all of it (nearly 80%) is owed to institutional lenders: life insurance companies, commercial banks, mutual savings banks, savings and loan associations. This is how they split up the tab:

Life insurance companies hold over 22% of the total urban mortgage paper and almost half of all off-the-farm loans now out on commercial buildings and multifamily dwellings. They are the basic source of financing for the blue chip projects, i.e. those running above the \$3-million mark; in sale-leasebacks, too, they control the market (New York Life alone has made 94 of these deals since 1946 and has industrial and business buildings worth more than \$110 million on its books). Biggest lenders among the insurance companies: Prudential with more than \$5 billion in mortgages; Metropolitan; Equitable; and New York Life. All operate nation-wide.

Commercial banks have a good-sized \$21 billion in mortgages on their books and account for about 16% of the overall nonfarm total. These banks have been edging more and more into the mortgage field over the past few years; New York's First National City Bank, for instance, is one

that has just started a home mortgage department. But the bulk of commercial bank real estate lending is still short term, mainly confined to: 1) construction loans and other interim financing, and 2) "warehousing" the mortgage paper of savings banks and other holders at a discount.

Mutual savings banks, with over \$17 billion in mortgages, have about 14% of the non-farm total. All the mutuals—527 of them—are based east of the Mississippi River, but many operate nation-wide through a network of regional correspondents or brokers. Mutual savings banks prefer residential properties or small industrial buildings, tend to lend on shorter terms (ten years, say, with possible renewal) than insurance companies. Their commercial loans, which are the exception, rarely top \$1 million. New York's Bowery Savings Bank, biggest of all the mutuals, has about 65% of its \$1.4 billion of assets in real estate.

Savings and loan associations, of which there are about 6,000, constitute the biggest single mortgagee today. With \$31.6 billion outstanding, they have a shade better than 26% of the non-farm total. Lending principally on single-family homes, the associations stick pretty

much to higher-interest conventional mortgages (though they did most of the GI financing after World War II), and now have less than one third of their holdings in FHA or VA paper.

The intermediaries. In between these institutional lenders and would-be borrowers is a highly influential and diverse group whose functions range from middlemen (straight mortgage brokers) to participants in the loan itself (mortgage bankers). In practice these people often have as much to do with what gets built, where, and how, as the final mortgagee himself. Mortgage bankers usually work with one or another bank or insurance company and as such are called correspondents or agents. Their job: to find, screen and evaluate local projects, place the mortgage (the banker may take the commitment himself but will usually pass it on to another lender), and to service the loan for its duration (for a fee of 0.5% of the outstanding amount). There are some 2,200 of these mortgage bankers operating now, and the big ones—like Houston's T. J. Bettes and New York's George Warnecke—service close to \$1 billion in loans each year.

The mortgage broker generally moves in and out much

more quickly. Time was when the broker simply lined up the borrower with a willing lender, collected his fee (ranging up to 5%, depending on the size of the transaction) and then moved on to something else. Some brokers still operate this way, but more of them are now reaching out to take a hand in all stages of the lending process, from planning through to finished project. For instance: New York's big Brooks-Harvey (\$150 million worth of real estate deals a year) specializes in initiating complex package deals and will, at times, involve itself in the whole building sequence from helping pick a site to finding the main equity holder. However, the broker still backs out once the project is done; he doesn't stay around to service the mortgage.

The other lenders. The remaining 18.6% of the non-farm mortgage total, the amount outside of institutional vaults, is spread among an array of lenders: the federal government, pension trusts, labor unions, fire insurance companies, endowment funds, real estate companies, individuals. Taken singly none is important in terms of the over-all total. But many of these mortgagees will lend on risks and types of property that conventional institutional lenders won't touch.

cern is to protect the policyholders' investment."

Applied to cases, this dollar philosophy shows unmistakably in what the lender considers in making his loan decisions. For commercial buildings, there are four factors that he takes into account today: 1) location, which is by far the most important; 2) reputation and financial standing of the promoters and occupants; 3) size of the loan; and 4) a bad fourth, type of building, its architecture, space use and layout. When he goes a step farther, and makes a specific, rule-book appraisal of the property (the appraiser is actually the key man in all mortgage decisions), the safety of the investment again takes priority. Here the lender is projecting forward—trying to predict what the selling or renting market for the property will be X number of years in the future. He may use one or all three appraisal methods—an estimate of the value of the land (improved), plus the cost of the building; a comparison with nearby real estate and similar properties; or a capitalization of the estimated income from the structure. Whatever yardstick he applies, however, he has one aim in mind: to minimize the possibility of loss.

In all this, the lender's concern for architecture is, at best, incidental. Design takes a back seat to the known economic considerations. If it moves up front at all, it is only because the lender feels it may tip the scales of an otherwise worthwhile project, turn it into a doubtful one.

This, theoretically, could happen with almost any building. The fact that it doesn't—that design seldom becomes consciously a crucial factor—is simply proof of how pervasive negativism can be.

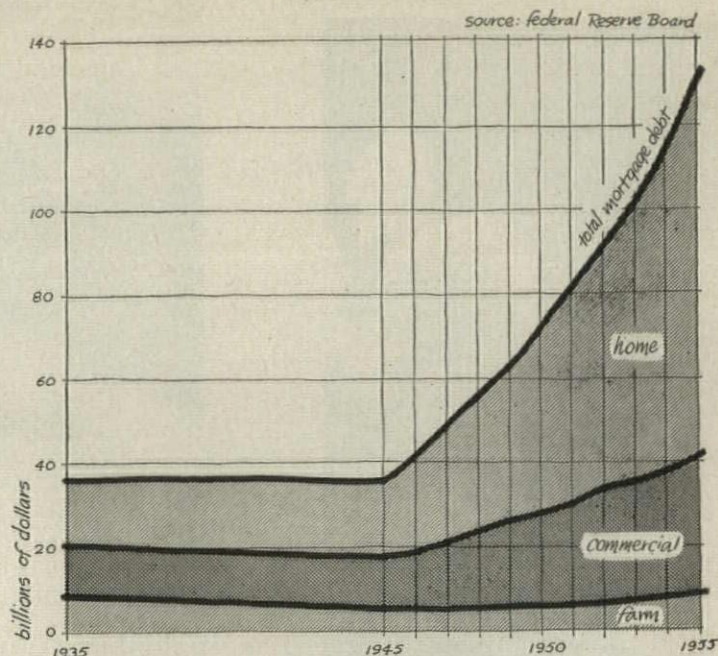
A mental blacklist

Any entrepreneur worth his keep today knows almost down to the penstroke what will, and won't, go for the sort of mortgage he wants. If by chance he doesn't, his tutoring will start early. Long before an architect even enters the picture, he will have had "sounding-out" chats, probably with several mortgage brokers or correspondents. Out of these, he will carry a pretty firm idea of what the building should avoid to get the financing he needs. (Actually, the architect may never find out how much the lender turned down at the beginning, which could explain why so many of them feel it's solely the entrepreneur—not the lender at all—who keeps the fresh air out of design.)

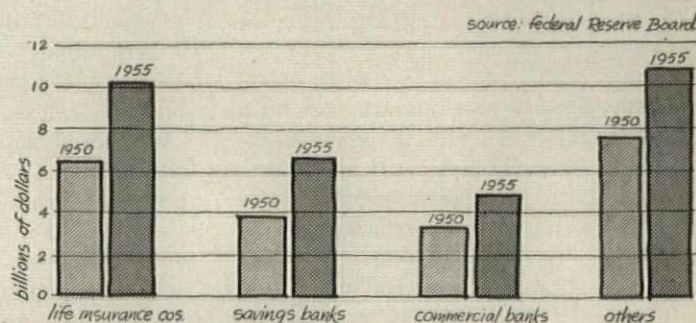
No lender likes to admit it, but the truth is most of them do keep a mental blacklist, one that makes an item-by-item rundown of their tabus. And almost without exception, these lists will start with a common proscription: the ban against innovation.

The lender is not interested, generally, in any building that looks "strange." Innovation in style will, hands down, draw more hostility than change in any

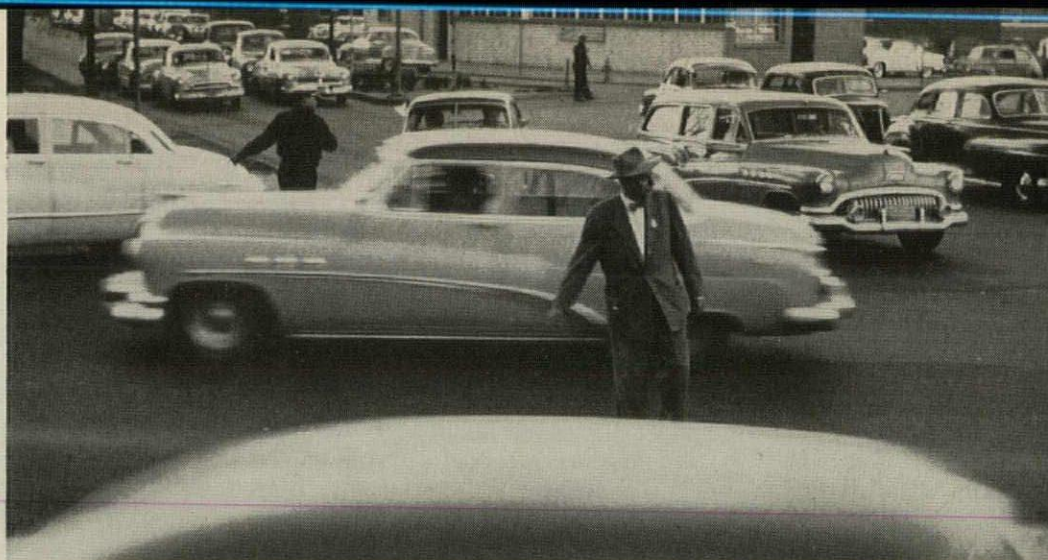
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Total mortgage debt, long on a plateau, has shot up 270% in last ten years. Homes (one- to four-family dwellings) have been the biggest gainers, now account for 60% of the \$130.2 billion of mortgages outstanding. But loans on commercial buildings and multiple dwellings have climbed, too. They are now two and one half times what they were in 1945, take about 25% of the total.



Commercial mortgage debt (including loans on multiple dwellings) remains concentrated in the hands of insurance companies, commercial banks, mutual savings banks. All other lenders combined have less than 35% of the commercial total.



CARL IWASAKI—LIFE

Students take on a task-force survey of the growth and traffic problems of a whole metropolitan region. The twofold result: invaluable training for 70 young planners and architects, new impetus for urban redevelopment

HOW TO START CITY RENEWAL

Not always does city rebuilding start off with the Texas-size bang of a Fort Worth plan, commissioned by a farsighted utilities president and unveiled with nationwide fanfare (AF, May '56). Sometimes the idea grows slowly, broadly and painfully as more and more citizens recognize the need.

In Springfield, Mass., the seeds of redevelopment have been planted, not by a leading businessman and the architect he hired, but by an alert teacher and a task force of Harvard students, who offered to spend the better part of a school year analyzing the city. Now that their fieldwork is over, these students are moving on better equipped for the redevelopment projects badly needed by other US cities. And behind them they have left some immediate contributions to one city's future: a wealth of regional information, a new citizen organization, and a climate in which the seeds may grow.

Harvard's "invasion" of Springfield actually got started through the back door—a good place for other architects and planners to explore if they hope to get a professional foothold in the continuing process of urban renewal. Reginald Isaacs, planner of the Michael Reese Hospital area in south-side Chicago (AF, Sept. '46) and now head of city planning and landscape architecture at Harvard's Graduate School of Design, had been called in by the new administration of Springfield College to study its proposed campus expansion (p. 146). But as Isaacs went to work he found the city had no clear mas-

ter plan into which a long-range campus plan could fit with any certainty. The very lack of a plan gave Teacher Isaacs an idea: why not give his students a chance to gain some practical experience in the field while gathering information of value to both college and community? After talking with local civic leaders, Isaacs made his proposal to a city-hall meeting called by the mayor and the chairman of the planning board: Harvard would like to collaborate with Springfield's civic organizations on a comprehensive study of the metropolitan region, and later on specific design projects within the city. The basic purpose, Isaacs explained, was to give graduate students realistic experience in gathering and evaluating all kinds of data, in developing goals and the detailed plans for carrying them out, and in presenting their ideas effectively in written and graphic form. As the city's part of the joint project, Isaacs suggested the formation of a Metropolitan Planning Council to bring together the efforts of Springfield's myriad civic and fraternal organizations, and to help raise the \$2,300 his students would have to spend for travel, maps and materials.

The civic leaders present replied by forming a committee which wrote to no less than 110 organizations in the area, asking them to name a representative to the new council and to contribute \$25, \$50, \$100 or \$200 toward the expenses.

The money was raised and Springfield made the major course for Harvard planning and landscape students who started

to come down in teams assigned to the city itself and to eight outlying towns. Faculty leaders were Isaacs, William Goodman, Hideo Sasaki and Charles Eliot. Local planning boards and civic groups cooperated with information, and with work space in city hall or firehouse. Toward the end teams of architectural students from Harvard's urban design class came in to concentrate on Springfield's central business district (photo right).

After all the studies were in, a public exhibition and meeting of civic leaders was held in the auditorium of Springfield's Museum of Fine Arts, where the graphics of some 70 student reports covered all four walls from floor to ceiling. The Junior Chamber of Commerce took on the job of bundling up all the material, sorting it out and getting it to the various planning boards involved.

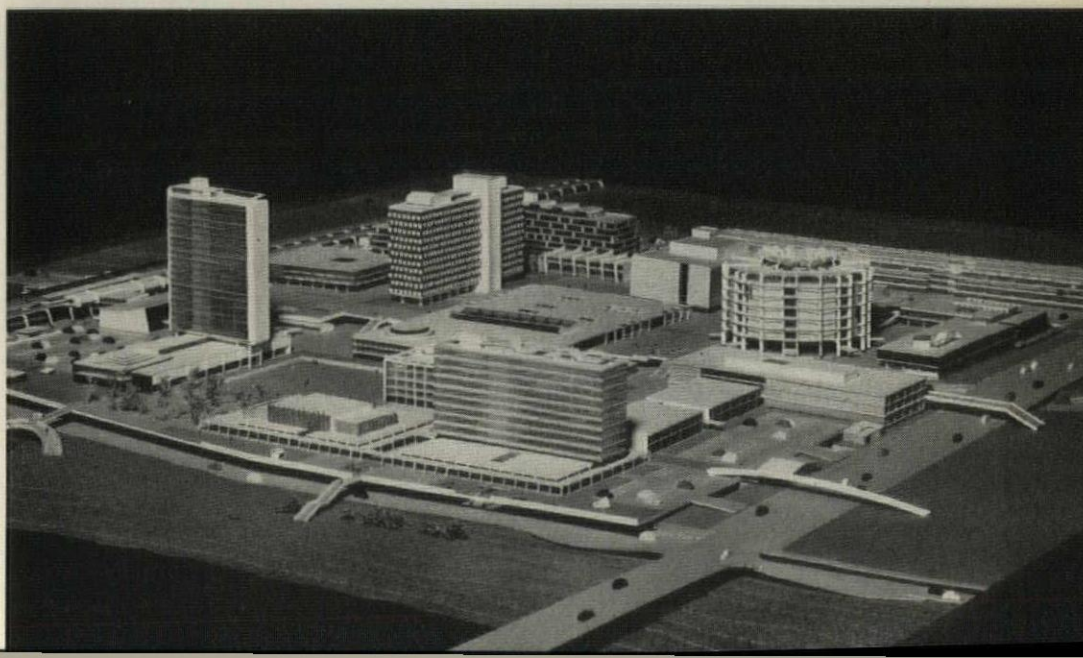
So far, there are some encouraging results. The city planning board has completed its own master plan report, started slightly before the Harvard program. Significantly, the citizens' Metropolitan Planning Council is still going, has 360 members, and has joined with three other important civic groups to form the Hampden Council (named after the county), with its own full-time, paid staff.

For its part, the city has made a real contribution to education—lack of which today is one reason much redevelopment never gets moving properly. Other cities will be watching Springfield to see what happens next.



AERIAL PHOTO: H. A. PROVOST

Downtown Springfield north of city hall (tower at right in photo) was the specific target of one student project. Three teams built models of this area "25 years from now"; one is shown at right. The planning principle is a valid one: a shopping-business-entertainment center unified by pedestrian plazas, with cars routed around, underneath and to peripheral parking. But as the students learned, it looked to their experienced professor more like Springfield "100 years from now"—too ambitious to be a working solution.

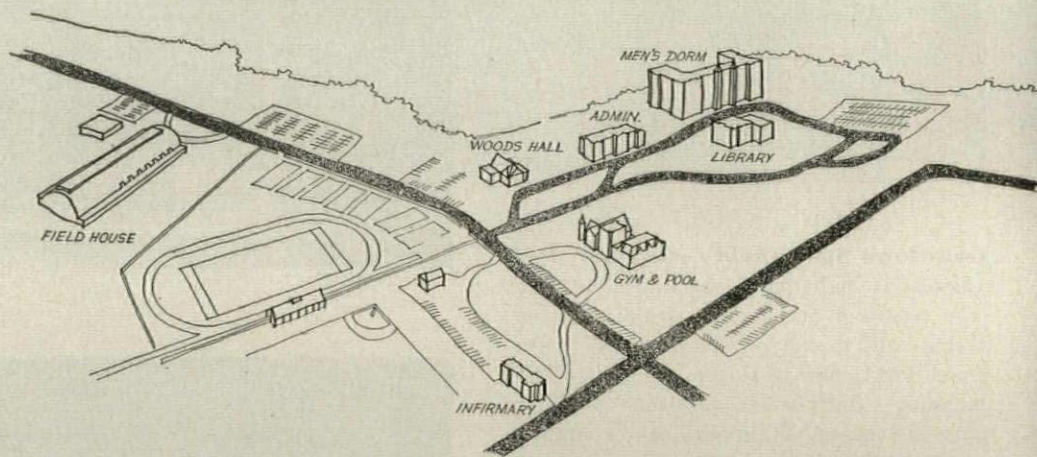
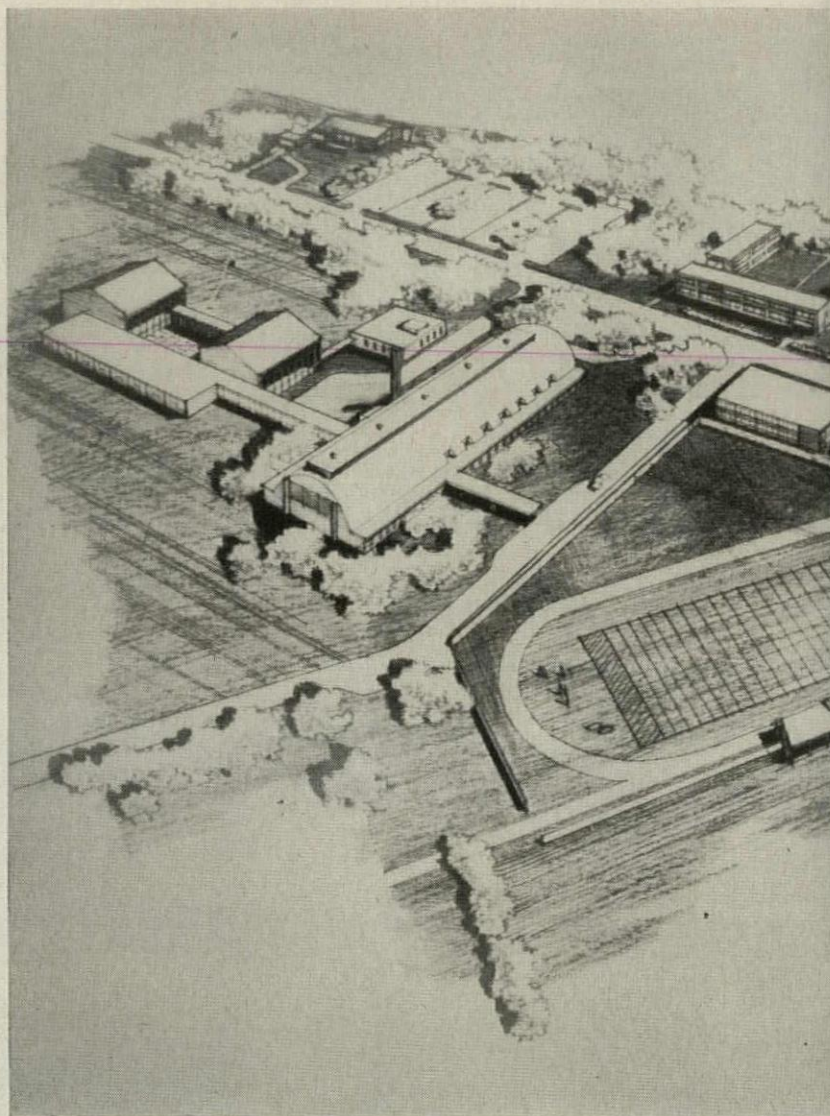


City renewal at Springfield began with this new campus plan for the local college

The project that started the chain of city-wide thinking in Springfield is itself a typical urban problem, not unlike Springfield's own downtown area: a group of related buildings that have grown up haphazardly along existing streets. Today heavy automobile traffic is literally cutting Springfield College to pieces. Students walking from the men's dormitory to the gym, for instance, must navigate an inner street-loop full of moving and parked cars. To get to the infirmary, student center or field house, they must cross Alden St., a hazardous sub-artery.

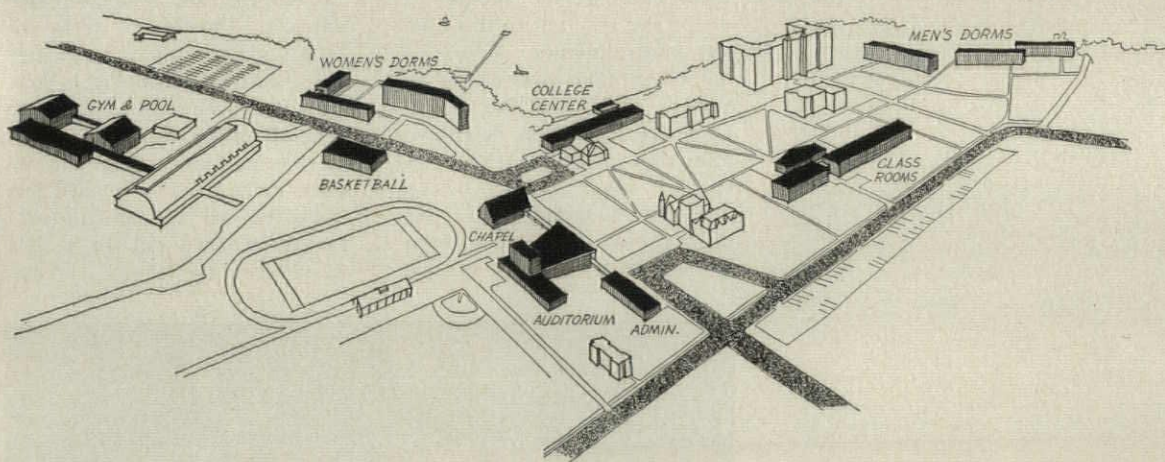
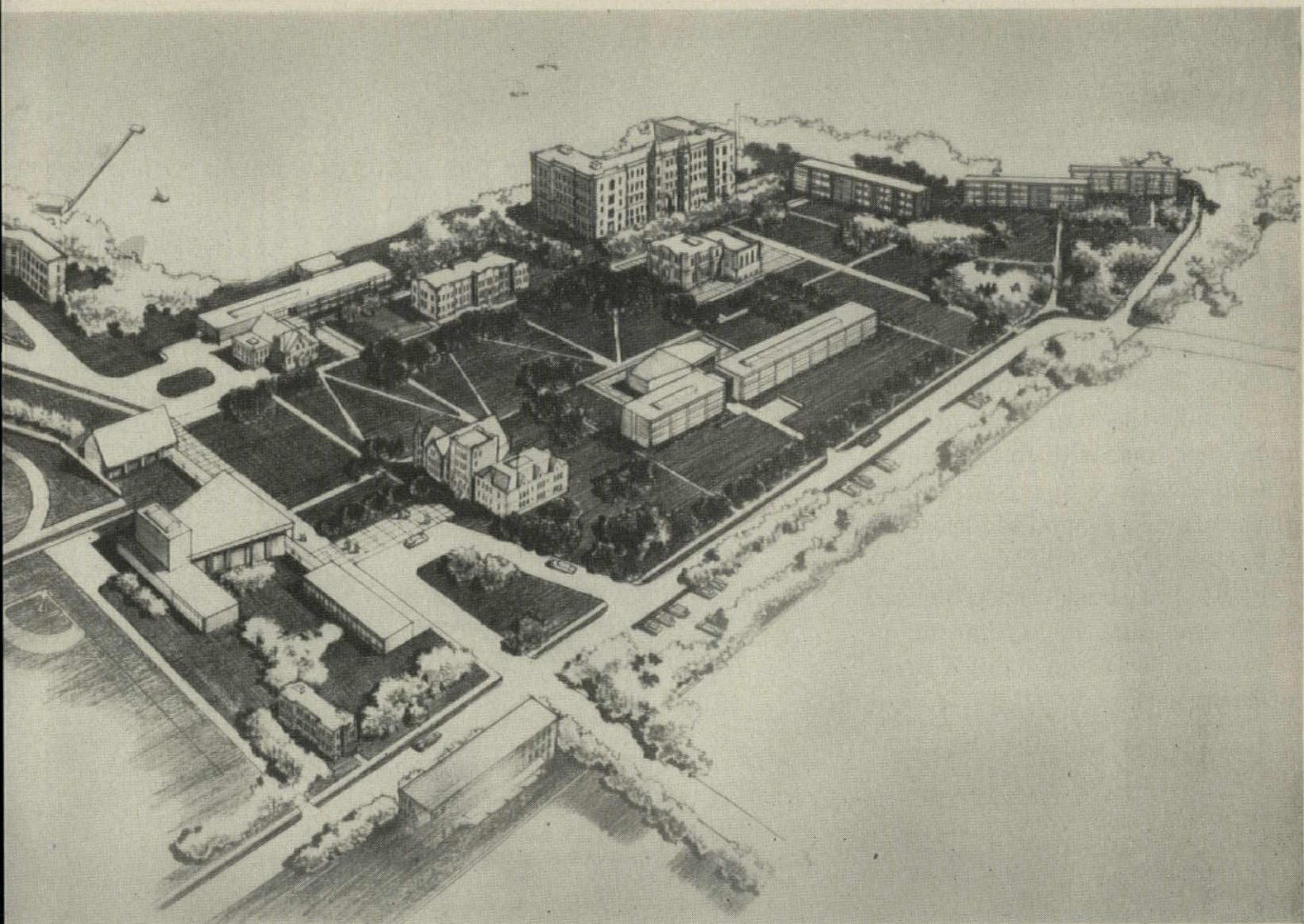
The college, which presently trains 1,100 young men and women for service with the YMCA and other youth groups, badly needs new class, meeting and housing facilities. Under a \$3 million expansion plan drawn up by Planner Isaacs, Landscape Architect Hideo Sasaki, and The Architects Collaborative, a campus now divided for the convenience of the motorist would be given back to the student on foot. Gradually new buildings would be added to the old to make an informal quadrangle that would become the heart of a newly unified college life. The inner loop-street and unsightly parking would be removed, Alden St. dead-ended in two turnarounds so the green could extend across to new chapel, auditorium and administration buildings. Like Harvard Yard, which the planners knew and restudied closely, it would be intimate, walkable, full of a pleasing variety of spaces and views—not overextended or rigidly symmetrical like some other college schemes. Buildings would not be sentimental imitations of existing ones, but would be closely related to them in scale.

At latest reports it was not yet certain that the TAC architecture would be used. The college was tinkering with second-string solutions, of the sort that promise to be "just as good." It began to look as if the college as well as the town might not make real progress until younger thinking took complete control.



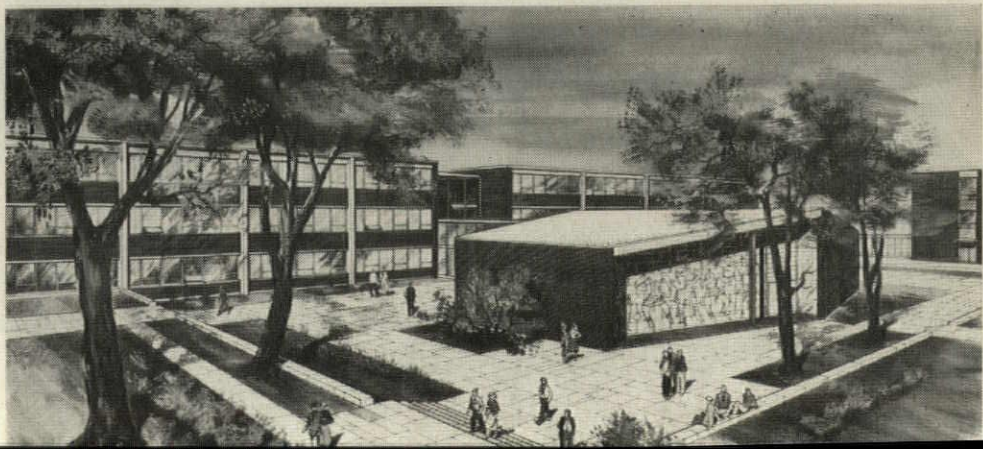
Today: as in other colleges, cars have invaded the very center of Springfield's campus (photo left) clogging it with traffic and parking that break up the views and prevent any real enjoyment of a stroll between classes. Sketch (above) shows buildings strung out along roads which cut the campus into thirds.





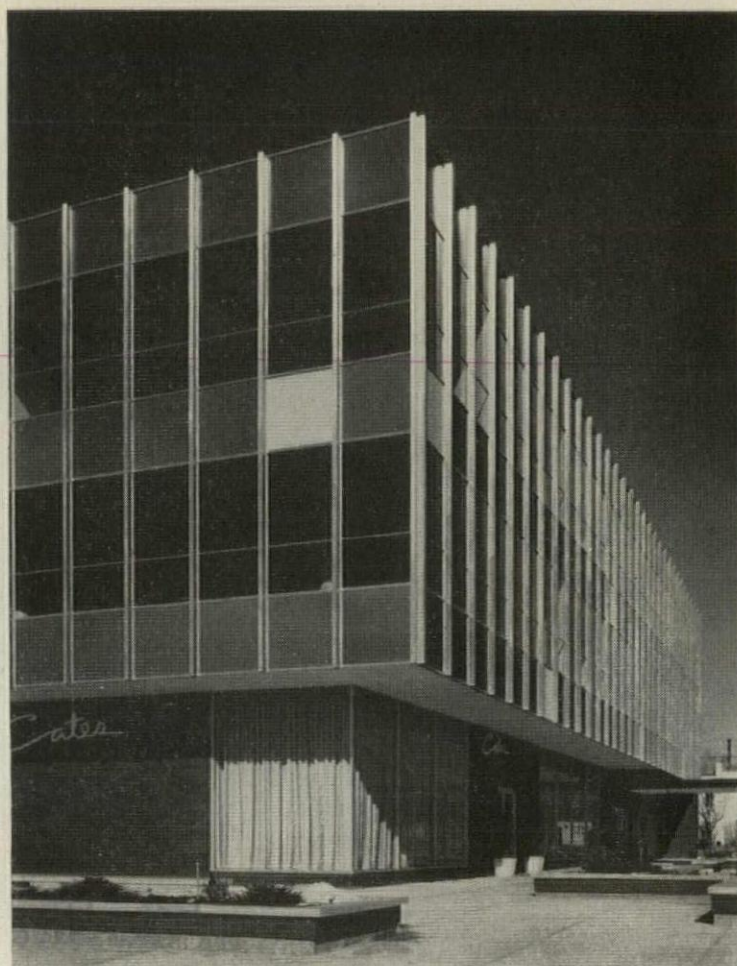
Tomorrow: the college would be united around a pleasant open green laced by footpaths. Cars have been put back in their proper place as a service, now come to the campus instead of *through* it.

New academic group, the most urgent need, would be placed on the front campus, completing a quadrangle with older buildings. Classroom building is divided into science and humanities, linked to back-to-back auditoria building.



BUILDINGS IN BRIEF

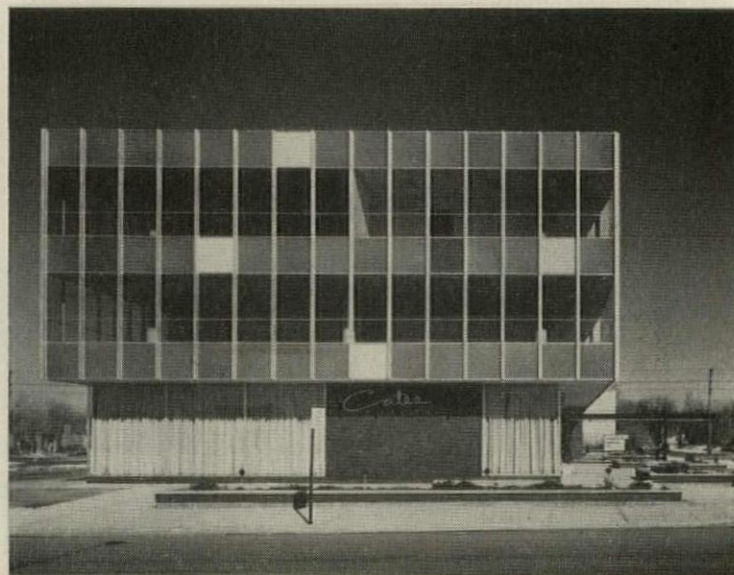
In this department FORUM takes an around-the-map look at new buildings, each with some claim to design excellence or a contribution to the proving ground of ideas. The department has only one aim: to keep FORUM's busy readers briefed on designs and ideas that might otherwise be lost in today's surge of construction

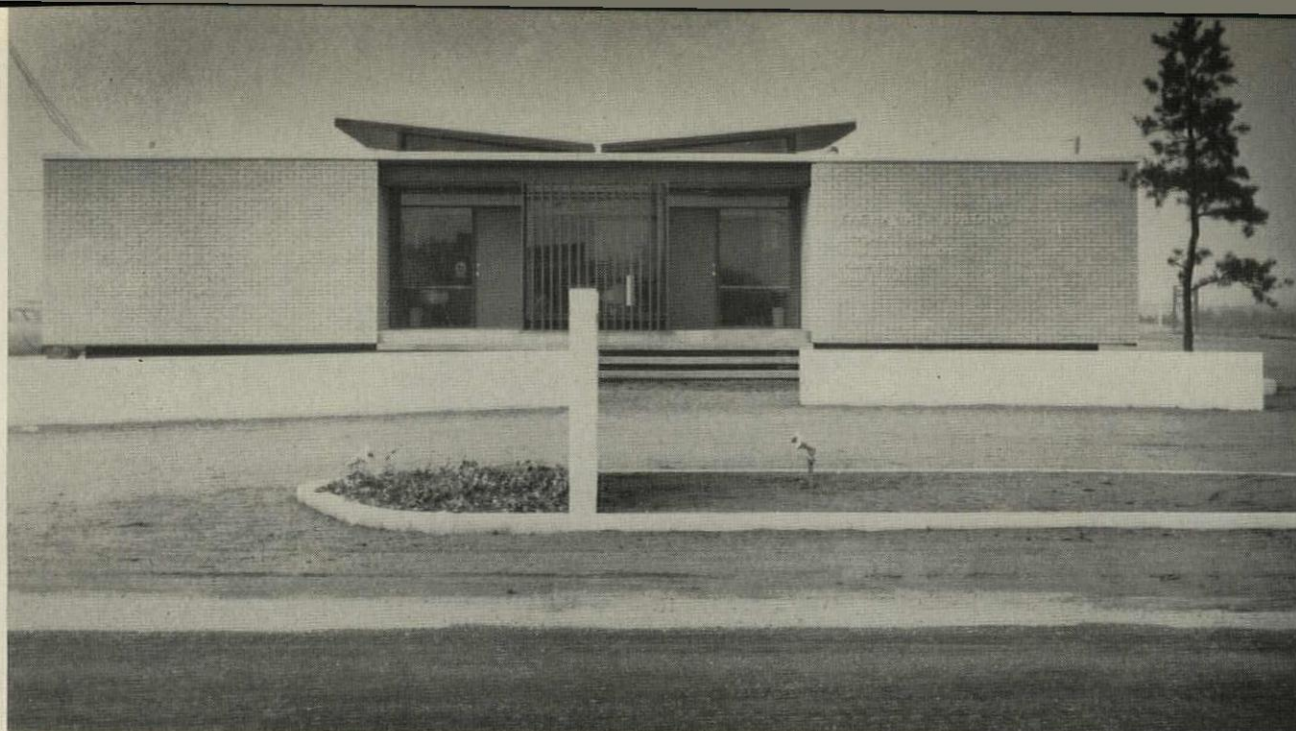


DENVER'S DEBATED CURTAIN WALL

People think it's either "terrible or terrific," says Architect Theodore J. Moore Jr. about the reaction to this Denver office building. Moore designed it (for real estate investors Redding-Miller Corp.) on a site 3 mi. from downtown and took delight in the contrast it made with a brick, next-door shopping center. His dash of color—porcelain enamel spandrels in red, yellow,

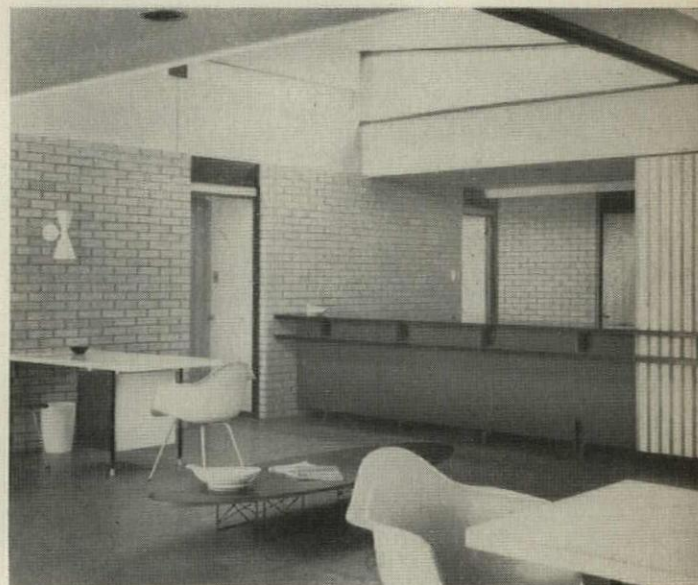
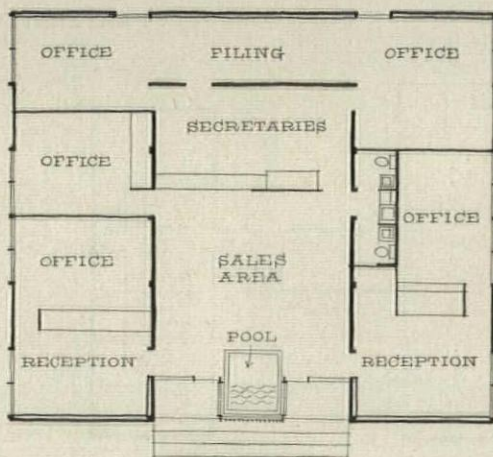
blue and white scattered across the glass-and-aluminum façade—is the admitted eye-catcher. But Moore feels the building's outstanding features are its air conditioning, a low-velocity baseboard system with special diffusers integrated into the curtain walls, and its cost. Price for the finished job, including all tenant improvements, worked out to a low \$15.10 per sq. ft.





A CLINICAL APPROACH TO OFFICE SPACE

There's not a doctor in the house, but this little office building at Shipbottom, N.J., could almost pass for one of medicine's group clinics. Architect Leo S. Wou laid it out that way to tie together a real estate and insurance agency (the owner) with offices for a builder, a lawyer, and a loan association. Wou used the center of the building, lit by a clerestory, as a common area for the public and for clerical help; the outer walls he gave over to individual offices. Sited on sandy Long Beach Island, the building needed 20-ton piles for support. It is built on concrete slab with nonbearing walls, cost about \$30,000.



PHOTOS: (ABOVE) DANNY WANN; (OPP. P.) WINTER PRATHER

SO QUIET YOU CAN HEAR A PIN DROP

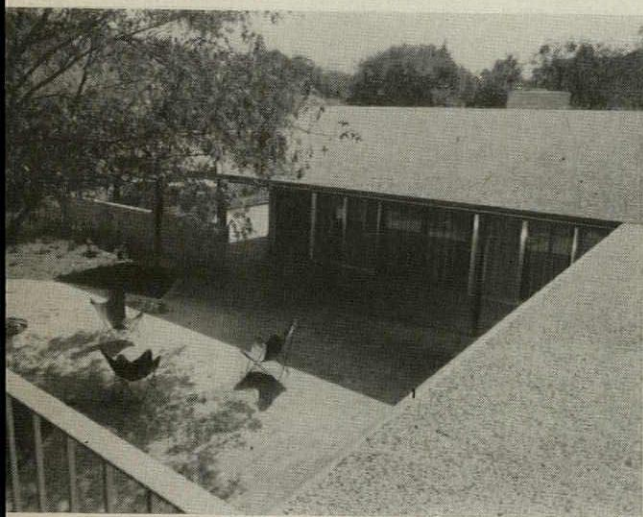
Hardly the place to expect serenity, this bowling alley in Covina, Calif., manages to achieve a good bit of it with its clear-span, uncluttered sweep. The work of Architects Powers, Daly & DeRosa, the building stretches 180' in length over the alley area, was built at a cost of about \$1 million, including equipment. The 30 bowling lanes are equipped with automatic pin-spotting machines and a system of underlane ball return, which keeps the floor clear of the usual trackage. The ceiling is acoustical tile.



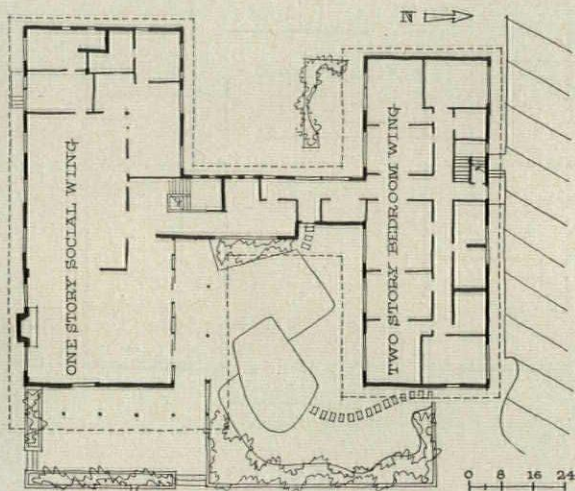
AMERICAN MACHINE & FOUNDRY CO.



FRATERNITY HOUSE TAKES TO WINGS



PHOTOS (ABOVE): DEWEY G. MEARS

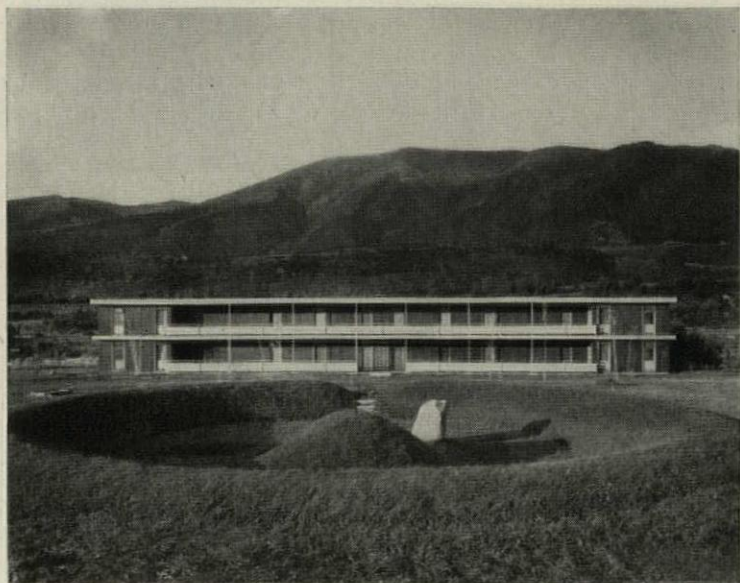


For this Phi Delta Theta fraternity house at the University of Texas, Architects Page, Southerland & Page created, in effect, two zones of activity: a single-story living and social area for 90 members; a two-story dormitory wing for 28 students. To link the two, they designed a service corridor, allotted the space on either side of it to the pleasures of enclosed gardens. Built at a cost of \$12.34 a sq. ft. (excluding landscaping, kitchen equipment and fees), the house has brick-cavity walls, a redwood post-and-beam structural system.

WHAT A BRICK CAN DO, A FLUE CAN, TOO



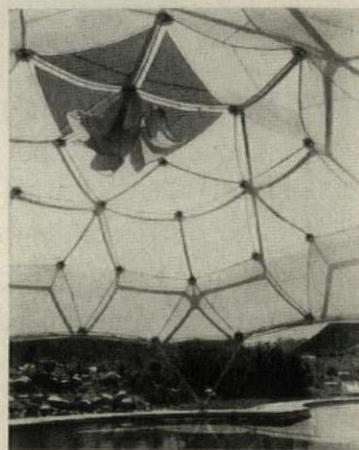
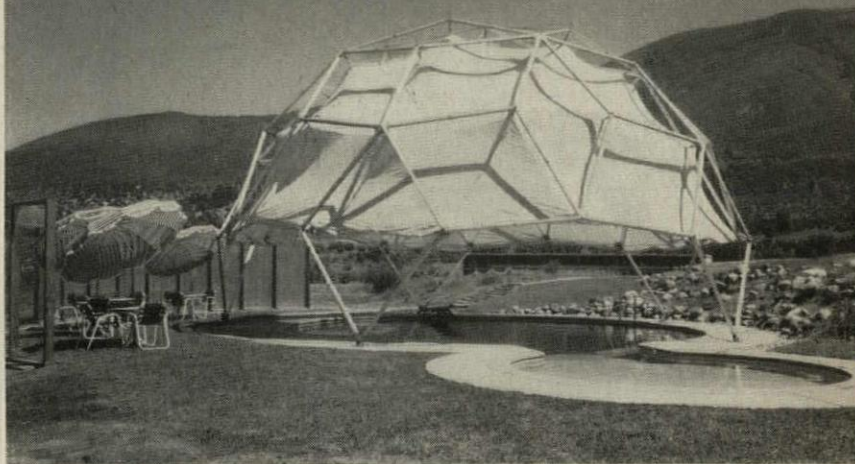
Clay flue lining may be one thing to a chimney sweep. But to Architects Curtis & Davis it was a way to get the honey-combed look they wanted for this six-story Pan American Motel near New Orleans. In all, they used 15,000 of the linings to pipe air and light directly into the motel corridors. Each one—measuring $8\frac{1}{2}$ " x $8\frac{1}{2}$ "—was ordered in 6" lengths, which became the wall thickness. The linings, laid in a steel angle at the top and bottom of each floor, were set in mortar about $\frac{1}{2}$ " thick. The end product, the designers say, has about the same structural strength as an 8" solid brick wall.



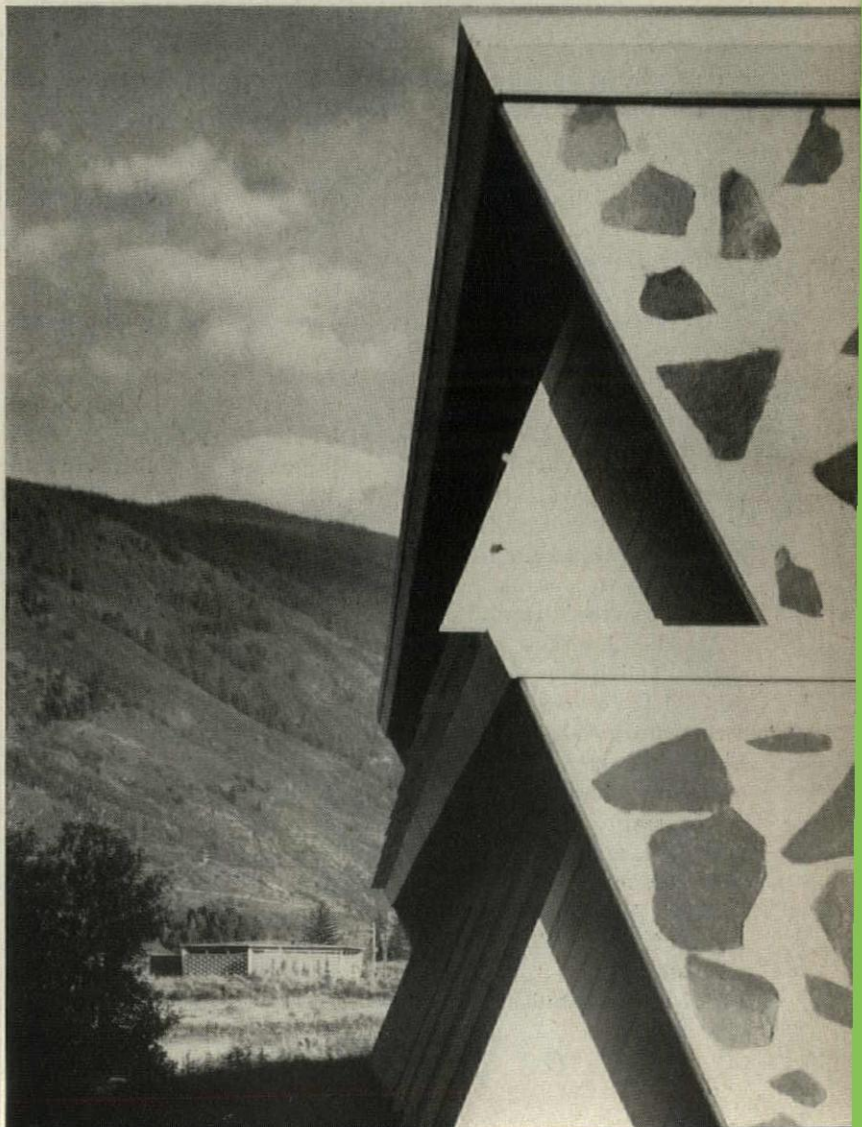
ASPEN: NEW SHAPES IN THE MOUNTAINS

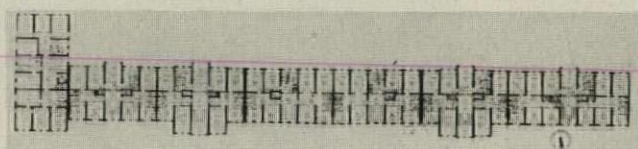
These architectural outcroppings in the mountains of Colorado are the latest phase in the building adventure that has been going on in Aspen at the Institute for Humanistic Studies (AF, July '54). Part of Industrialist Walter Paepcke's campaign to make Aspen a major cultural and resort center, the new construction adds a recreation area, is the first of an expanded program. Shown above and below are two of the three lodges at Aspen Meadows by Herbert

Bayer and Fritz Benedict, which, all told, provide 40 apartments. At upper right is a figure-eight pool, topped by Buckminster Fuller's geodesic dome of vinyl-coated nylon skin to protect winter swimmers. The detail at lower right is from the wall of one of the lodges; flagstone set in poured concrete creates the effect. Less obvious is the landscaped mound in front of the lodge above. Its function: "It may be used to sit on," says Designer Bayer.



PHOTOS: (BELOW & LEFT) BERKO; (ABOVE) FRITZ KAESER





BUILDING ABROAD

ARCHITECTURE OF EAST GERMANY

"If West German architecture is bad, it is by default; in East Germany, it is so by decree"—a critical appraisal of the Communists' fanatical but narrow rebuilding program by a recent visitor behind the Iron Curtain who prefers to remain anonymous

Numerous Americans have visited the East Sector of Berlin. They all have experienced the peculiar feeling of shock that comes from the contrast between the prosperous normal appearance of the western half of the city and the pauperism, depopulation and acres of ruins in the East Sector.

In proportion to its scant rebuilding ratio, the East Sector of Berlin (97% destroyed) has far fewer domestic buildings than the West. Inquiries about new living quarters are answered with monotonous reference to "our *Stalin Allee*." This development in the heart of the old slum district, which was wiped clean by bombs, is a mile and a half ribbon building, containing shops and apartments for party functionaries (photo 1). Its main characteristic is a startling resemblance to the *Mietskasernen der Gruenderzeit*—speculation tenements of the expansion wave after the Franco-Prussian War of 1870. The elevations are uniform eclectic clichés, hiding apartment layouts that repeat all the worst speculation sins of the 19th century (2). There is the pitch-dark *Berliner Zimmer* or foyer, narrow uniform rooms with insufficient ventilation, giving in the rear on the famous *Hinterhof* or rear yard, and there are inside bathrooms and kitchens and narrow stair halls.

West Berliners are profuse in their scorn of the *Stalin Allee*, aiming their criticism mainly at the ridiculously outmoded monumentality of the façades. The

foreign visitor would like to join in their often very funny quips, but he feels bewildered. Is this official architecture really so different from the official architecture of the Free West? A juxtaposition of, say, the new home of the President of The Republic in Bonn (3) and the Sports Hall, terminating the *Stalin Allee* (4), shows an embarrassing likeness. West German architecture in general is heavy, unproportioned and without design imagination—as evident in Stuttgart (5). The difference lies in the rare exceptions that are possible in the West but unthinkable in the East: the superbly designed Volkswagen repair shop in Braunschweig by F. W. Kraemer, for instance (6) or the multiple dwelling units for Siemens by Freimuth in Munich (7). But the handwriting of the typical postwar architect on both sides of the Iron Curtain is a heavy gothic script. The difference that permeates the air one breathes, originates, as everything else in Germany, from an ideological contrast: if West German architecture is bad, it is so by default; in the East it is so by decree.

Big Brother's loudspeaker

The train to Dresden, racing at a smart clip through the new "Workers and Peasants Republic," could have run unchanged in the Weimar Republic. The third-class wood bench compartments are still overcrowded and full; the second-class com-

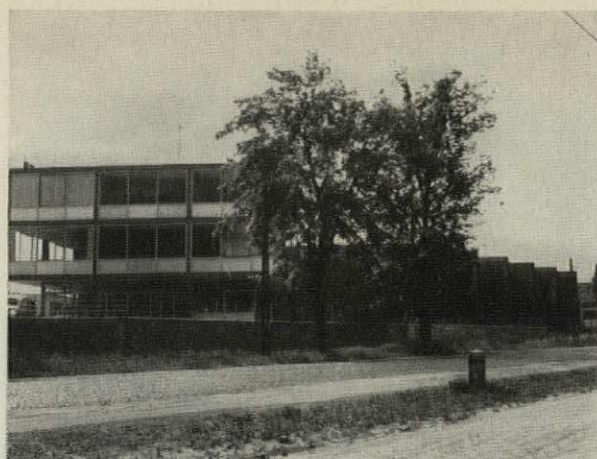
partments are still overstuffed and empty. The difference from 25 years ago is the loudspeaker, that all-pervading voice of the "Big Brother," accompanying the East German citizen from waking to retiring, and from nursery school to crematorium. On this particular trip the broadcast elaborated on the promised return of the famous art collection of the Zwinger Gallery in Dresden, which had been perfectly safe in Castle Pillnitz before the Russians liberated it and took it to Moscow. The broadcaster thanked the valorous Soviet Army for having protected these priceless treasures against the ruthless hordes of the massed capitalist armies, and he thanked in even more obsequious terms the glorious Soviet *Volk* for their gift to the humbly indebted German *Volk*. There was a wildly irrational note in this abject gratitude for the return of German State property.

The landscape between Prussia and Saxony is flat and dull. What made it interesting for me now were the low-cost worker settlements near factories and trade centers. In West Germany the keenest disappointment of the overseas visitor had been the defacement of vast amounts of farmland by slums of single family boxes, ugly, impractical and without the slightest trace of site orientation (8). In the homeland of the most progressive pre-war settlements, this wanton destruction of the *banlieu* of the finest old towns had hurt.

Now, in traveling through the East Zone these same mass housing efforts became evident. But they were of a different type. Here the state had built row houses, three or four stories high, and of completely uniform design in widely separated towns (9). In spite of their esthetic monotony, and their lack of landscaping or of town planning, the sober multiple dwelling was less depressing than the miserable little *Eigenheim*—less even than the Long Island speculative house.



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An open city

To arrive in Dresden is an amazing experience—as if one were to step out of Grand Central Station in New York, to discover that one could look clear through to the Battery on one end of the island and to the Harlem River on the other. The rubble had been cleared away, but this is about all. There are very few islands of reconstruction. The famous Baroque Zwinger has been rebuilt stone by stone through labor conscription and public fund raising. The form composition and every detail of the profuse ornamentation have been repeated with historical accuracy. But the end effect is lifeless and mechanical.

This is something the Dresden Zwinger does not owe to the political climate. It shares its lifelessness with such widely separated historical conservation jobs as the fifteenth-century Ford Hospital in Coventry and the Agora in Athens, being reconstructed with Ford Foundation money. One cannot help but look for the First National Bank sign on those brand-new colonnades in Greece, no matter how scholarly correct their proportions. And the brand-new Gothic of Coventry looks like a Rathskeller under new management.

The natural aging of buildings is obviously more than structural survival, more even than the patina of weathered materials. It is a settling into environment, and a fusion of compatible building elements, that age as harmoniously as a good husband and wife. Here Europe could furnish a lesson for our builders—if they only cared.

Stalin Allee Jr.

Each major East German town has its own *Stalin Allee*, differing from the famous Berlin prototype mainly in size. The poor taste and fake Medievalism of these provincial town centers had been pointed out beforehand by a knowledgeable West

Berlin colleague. But as in the case of Western and Eastern Public buildings, the ridicule sounded oddly inappropriate. The difference between the standard concrete half-timber imitations in such towns as Ulm and Frankfurt (10)—jokingly called “Bauhaus Biedermeier” and the modified Tudor Bay in a small East German Town (11)—seems rather slight.

Life in Dresden is a nightmare for anyone except workers and party officials. The tragic accent comes from the yet unforgotten centuries when this city was a capital with the greatest opera and the finest artists, who within 100 years created the two most important German art movements: German Romanticism through the *Nazarenes*, and German Expressionism through the *Brucke*. There had been magnificent villas, an international Spa along the Elbe mountain range, famous Parks, and—so the proverb said—the most beautiful women in all of Germany. Not a trace of all this seems to remain. Those above the day laborer status who could leave, have left. Of the 271,000 East Germans, asking for asylum in the West in 1955, a majority were from Dresden. But flight means not only breaking all family ties, it means walking across the border with nothing but the clothes on one's back. All refugee property is confiscated. Many businessmen, artisans, professionals must remain. Their children are barred from higher education, which for Germans with their idolatry of *Bildung* is perhaps the most cruel blow. Higher education is strictly reserved for the offspring of the proletariat.

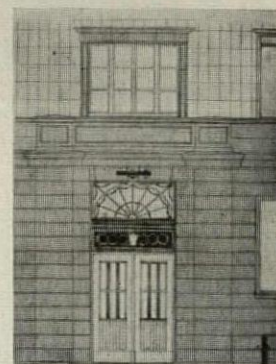
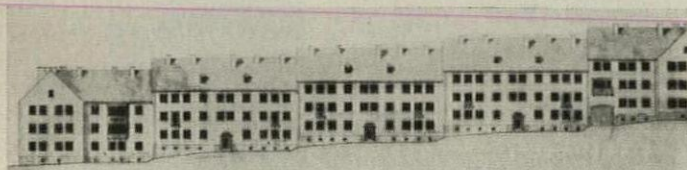
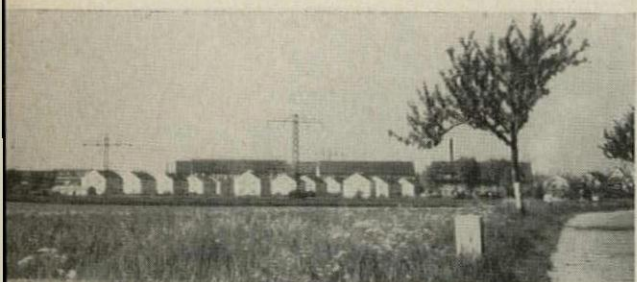
The gray masses of people, who, early in the morning and late in the day (there is no eight-hour day for anybody) streamed in and out of the ruined town into the suburbs, were easily explained as to their mode of survival. But what had become of the architects? There were no more than eight buildings under construction while I was in Dresden, and yet,

I was told that the famous old *Beaux-Arts* Academy, and the Technical University, were turning out architects at top speed. It was at the Technical University, rebuilt monumentally in its old location at the south end of town, that I got my most decisive insight into the actual status of architecture behind the Iron Curtain. My informant was a youngish professor of architecture, one of the generation who had been reared during the depression, had matured in the Hitler *Jugend*, and had—a great exception—survived five years of active combat. Between 1946 and 1951 he had been trained on a state scholarship. He was a serious dedicated man, the ideal prototype of the New Professional of the East German Republic.

Where are the architects?

To my opening wedge: “What on earth are all you architects doing?” he replied: “We rationalize and we educate.” The term “rationalizing” means in German something very different from the English. It stands for rational standardization of all products, parts and working processes. But I could not help grinning about the unintended double meaning. With great zeal and enthusiasm he explained to me that *Typenprojektion*—type projection—was the new task of German architecture, and that they could devote little time to actual building until this new architectural system had been fully developed. (It was the old German obsession to have a theory first and then—perhaps—an application. How different from the US.)

He had a clipping with a quotation by Comrade Khrushchev, first secretary of the Communist Party: “The industrialization of building demands that the working methods of the planning offices be changed. Type projection and the wide use of already existing type plans must be the main concern of all designers.” Using charts he elaborated on this basic need



for total industrialization and standardization of all building materials and parts up to the complete façade of each building type as developed in Russia (12). He had harsh words for the social Romanticism of those among his colleagues who secretly yearned for individual design.

"Individual taste can no longer cater to the personal demand but must transcend the environment of the specific building. The architect must never lose sight of the fact that each line he draws and each calculation he makes or each saving he achieves, but also each mistake he makes and each negligence he tolerates, will have a thousand reverberations on the collective building sites of East Germany (*Grossbaustelle Ostdeutschland*). He showed me about a dozen standardized façades and plans for student dormitories which have priority over all other building projects. He lovingly compared two already built (13 b and c) with the *Stalin Allee* (13 a) and concluded: "When I came here, there were dozens and dozens of stairs, windows, doors, cornices, moldings, ornaments. Now there are only five types of stairs possible, and in the Soviet Union, they have pared down ceilings of nine types for the whole country. Nine ceilings for the whole Soviet Union, imagine."

Later I read a long long speech by Walter Ulbricht, the First Party secretary, delivered at the building conference in April '55. He referred to the just completed First Five Year Plan: "It symbolizes the bright life of the future under the decisions decreed by the *Volksmacht*."

There it was again: the imperishable carrot that is dangled day and night before the nose of each citizen to make him run. There isn't a broadcast, speech or article that doesn't start with "*Eure Zukunft liegt . . .*"—your future lies, and ends its paragraphs with "*Der Tag wird kommen . . .*"—the day will come.

Considering that Hitler had lived for 13 years on the same trick, the confidence of the German people in providence seemed amazing.

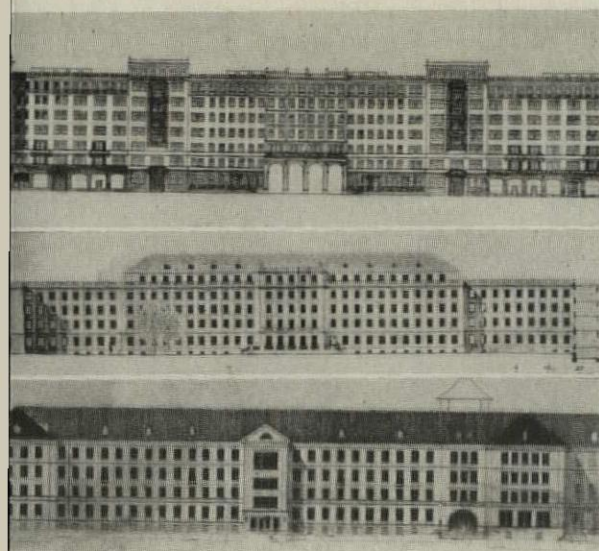
"Type Projection for Berlin has been worked out until 1970," Ulbricht had written. "A unique example of precise scientific work." The Dresden professor went into great detail, explaining to me how a state sponsored system of frequent competitions had brought magnificent results. From his detailed description it seemed that everybody was incessantly competing with everybody else. *Truemmerfrauen* (the women who clear away the bomb rubble) against *Truemmerfrauen*; the cement mixers against cement mixers; the "shock brigades" of construction workers on two different building projects, and the designers in the planning offices. "There are great personal advantages in belonging to a winning team," my informant concluded, "but also severe disadvantages if a team loses once too often. If a precalculated project runs short of building material or oversteps its budget, the names of those responsible are posted on the half-ready building and left there till amendments have been made by them."

No more geniuses

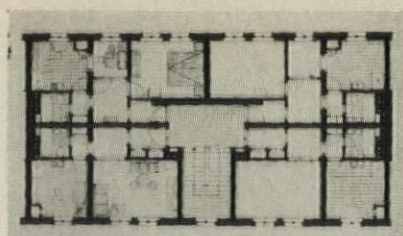
"Research for prestressed concrete must be concluded by June 30, '56," he read me from an official circular. "In Leipzig an opera and a post office have to be erected by 1957; a hotel in Magdeburg, a sailor's hostel in Rostock," etc. He pointed out the severe self-criticism that is the backbone of the Socialist Republic. After a brief reminder to me about the magnificent results this self-incrimination has produced in Russia, the professor showed me plates with plans for workers' apartment buildings (14). The margins were crowded with critical remarks by various "Cadre leaders" which would be published in the official architectural magazine.

"There will be no more precious geniuses with individual dreams," the teacher of architecture concluded. "Art, science and technology will be the three great unified forces from which to build a unified disciplined industrially fabricated new architecture."

As I was walking back through Dresden, past its miniature *Stalin Allee* on the *Gruner Strasse*, past student dormitories that seemed familiar because I had just been explained each detail, past shops with identical merchandise and past billboards with identical slogans, it all seemed nightmarishly logical. No matter how fervently the professor had invoked the Russian master mind, or had tried to emulate the foreign example, what I had heard from him and had seen during the preceding week in the East, was purely German history. Type projection? The horse whip discipline of Collectivism? In 1911 Herman Muthesius, co-founder of the *Werkbund*, had opened the convention of the *Werkbund* leaders with these words: "If any art, it is architecture which aspires to type. Only through type can it find perfection. . . . Modern social and economic organization is based on a sharp tendency of submission under leading viewpoints, severe (*straffe*) subordination of individual elements and undeviating emphasis on main principle as against minor issues. . . . Proudly Germany acknowledges her reputation of having achieved the strictest (*die straffste*) and most precise organization among all nations in her commercial enterprises, her heavy industry, and her state institutions. It is our military discipline that can be pointed out as the original inspiration" (15, an administration building).



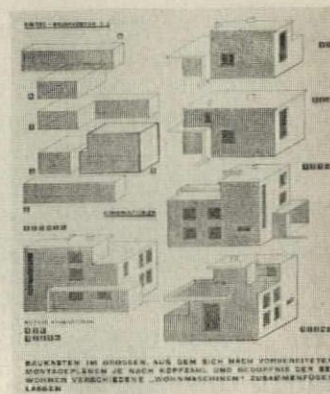
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This is the norm

The gentle, gifted Henri van der Velde had bitterly opposed Muthesius and the *Werkbund* principle: "As long as there are artists among architects, they will protest against any proposed canon and any standardization. The artist is essentially a spontaneous creator. Never will he of his own free will submit to a disciplining force—a norm, a standard."

But his protest had failed, together with his *Art-Nouveau* movement. The next step had been the creation of the *Din F'ormat* movement in 1917. Originally intended for industrial products, the influence of the German Industrial Norm Committee had soon become something of a *Weltanschauung* and had greatly influenced architectural design. *Normungsblaetter* (norm sheets) very similar to those the Dresden professor had shown to me, fixed uniform measurements for all industrial products and all building materials. The term DIN came to stand for *Das ist Norm!* (this is the norm) with the drive and exclusiveness of an Eleventh Commandment. The DIN idea had prepared the ground for the final step in German-type projection: *Bauhaus* architecture.

In 1924 Adolf Meyer published in the *Bauhaus* Book Series a volume: *Ein Versuchshaus des Bauhauses* (An experimental House of the Bauhaus) in which type projection for the first time was systematically presented. The caption under a photo in the Meyer book (16) reads: "Building block sets in life size, from which various 'machines for living' can be assembled from prepared assembly plans, according to number of heads and requirements of the inhabitants."

And the text of the book had expounded: "The human habitation is a matter of mass production. Technology today would be capable of doing this, but the building trade is still tied by obsolete

crafts methods. . . . A basic transformation of building toward industrialization is therefore a powerful demand. . . . This problem must be attacked simultaneously from three points: the economic-organizational, the technological and the formal. . . . The wealth of problems can no longer be mastered by the individual architect, but only by the collective teamwork of numerous experts."

A new mental intoxicant

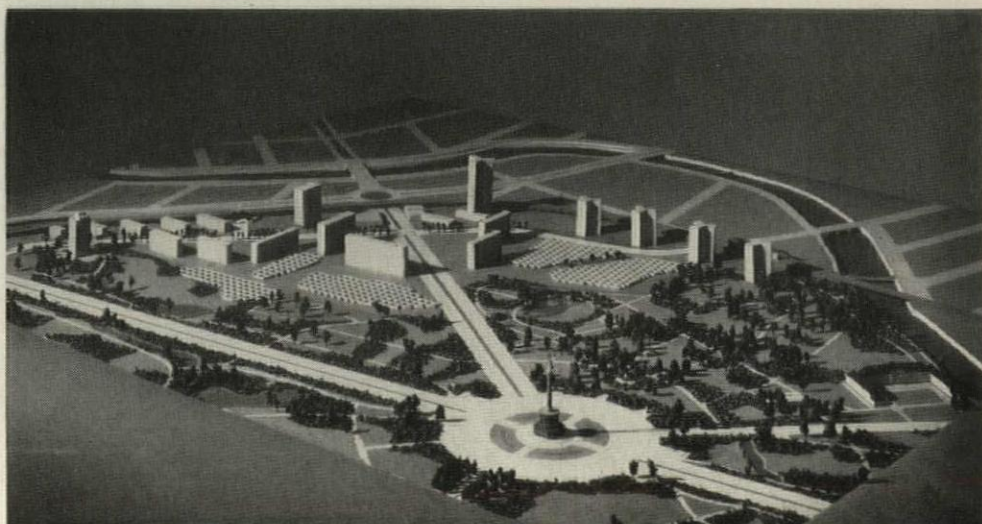
Like pollen-carrying insects, Mart Stam, Meyer, May and other architects of this generation had carried the type projection idea into Russia when they were hired in the twenties to create a Soviet architecture. Remembering the climate of those years after World War I, it occurred to me how all revolutions turn for salvation from the chaos they have created to a form concept of excessive purity and excessive regimentation. It was no coincidence that the only historical architects quoted in the official East German architectural magazine were Gilly and Schinkel, who had tried to establish a Roman discipline in building after the unsettling years of the French Revolution and the Napoleonic invasion. Jefferson had tried to align the leaderless

American colonies with classical discipline after 1776, and Wren had expounded Palladio after 1688.

The West has sloughed off the disastrous heritage of earlier type projection fallacies, as shown by the huge and multi-accented project for the West Berlin *Hansa Viertel* (17). But the East Germans have been forced by a tragic political fate to sell their soul to overlords who are latecomers in the development of Western Civilization. Infected by the last symptoms of the growing diseases of the industrial age, they are selling them now back to the originators, exploiting two German character defects: servility and fanaticism. In 1888 Bismarck said in a parliamentary speech: "If the evil art of acknowledging that which is foreign as superior over that which is native—even at the detriment and expense of one's own welfare and leadership—still flourishes among peoples, it certainly does so among the Germans . . ."

And Nietzsche, at exactly the same time, had summed up what I had experienced east of the Iron Curtain, crystallized, as it were, in the new religion of type projection: "The Germans" he had said in his *Will to Power*, "are a dangerous people. They are experts at inventing mental intoxicants."

17



TECHNOLOGY

New materials and methods in painting (right) . . . technical notes on air ducts buried in the slab . . . 175' hydraulic elevator . . . electric heating . . . new low-nickel stainless . . . paper forms for precast concrete . . . electronic brain center controls air conditioning . . . tapered steel beams (pp. 160, 161)



ALBERT PENN—LIFE

NEW PAINTS FOR BUILDING PROTECTION

Besides many new plastic materials, the industry has some new means of application and some new ideas about thickness

A couple of decades ago, almost everybody in the building industry had the facts about painting at their fingertips; there just wasn't much to know. Now, however, paints have become an esoteric mystery, akin to New Year's punch, whose ingredients are known to but a few initiates. These initiates are a group of smock-clad chemists and corrosion engineers who, with the nice accuracy of the scientifically inclined, even want to change the name "paint" to "coating." Moreover they are also trying to remove the ancient touchstone of quality paint jobs and eliminate the "one, two or three coat" specifications of yore and substitute actual thicknesses of paint film instead.

As a result, paint technology is now handmaiden to plastics and it takes a wise architect, builder, engineer or building owner to know what is available and what a specific coating can do to solve problems in corrosion, heat, humidity and wear resistance. Incidentally, the paint manufacturers seem reluctant to shed light on the mystery. Too often the basic ingredient of a coating is hidden behind a trickily spelled name and label which implies (without naming a substance) that the liquid within is more magical than chemical.

New materials

According to the manufacturers, a coating has been, or will soon be made from every one of the 14 major basic plastics. This doesn't mean that the new paints are limited to 14, since each of the 14 basic plastics proliferates innumerable compounds, to say nothing of the endless cross-compounds made by combining two or more basic plastics. The possibilities for confusion are almost infinite.

So far, these are the basic ingredients which have been used most successfully in construction paints: phenolic resins, vinyl resins, epoxy resins, chlorinated rubber, high styrene-butadiene copolymer resins, alkyd resins and fluorcarbon resins. To a lesser extent such plastics as silicone, urea, cellulosic, acrylic and polyester have been tried—usually for specialized purposes. This leaves only melamine and polyamide still in the test-tube or laboratory stage of experiment.

However, it should be a comfort to remember that the addition of these substances to paint technology has not

changed the basic constitution of most paints. Paint, in the main, still consists of 1) pigment, dry powdery particles to provide color and opacity, 2) vehicle, the non-volatile portion (or binder) which dries out to form the film holding the pigment together and a volatile portion (or thinner) which evaporates after permitting easy flow, and 3) a drier, which speedily converts the liquid paint into a solid film by catalytic action.

The plastics are used mostly as binders, although advances in pigment and driers have kept pace and are much improved too. The new coatings get their characteristics from the basic plastic from which they are compounded. To find a way through the alchemic morass of jaw-breaking names, it is necessary to cling to a number of guiding strings. The following strings are the basic characteristics of the most popular synthetics:

Phenolic resins. These coatings are a sort of middle road in the transition from the older oil-based (tung, castor and linseed) coatings to the newer synthetics. They are a good compromise or all-round paint having a wide variety of desirable properties without being superlative in any category. They have excellent weatherability, dry swiftly, are easy to apply by all the usual methods, are low in cost and have relatively good chemical and corrosion resistance. However, they have relatively poor gloss retention on exposure.

Vinyl resins. These coatings are among the best in properties of durability, chemical, corrosion and abrasion resistance, and color and gloss retention. But vinyls, too, have their drawbacks. They lack resistance to some solvents, are thermoplastic and usually must be sprayed on rather than brushed.

Epoxy resins. These are the new glamor coatings, the laboratory darlings of today. They show outstanding chemical resistance and excellent hardness plus good durability. But so far they are somewhat lacking in gloss and color retention and resistance to high humidity.

Chlorinated rubber and styrene-butadiene. Both of these rate high in alkali resistance (they are widely used for concrete and masonry coverage) and in other chemical resistance but low in resisting some solvents.

Alkyd resins. The "wonder paints" of a few years ago, these coatings are still considered excellent because of their gloss and color retention, ease of application and good atmospheric weathering. One of their drawbacks, in industrial use, is their relatively poor chemical and solvent resistance.

Fluorcarbon resins. Here is a material which the chemists and corrosion engineers would dearly love to get on the market. Of all organic coatings, these have the best chemical resistance. However, they are limited at the present time for construction use by high cost and the necessity for baking the finish on.

Emulsions. A lot of attention is now being paid to polyvinyl acetate emulsions. Coatings based on this compound have given excellent service on masonry and very satisfactory service on exterior woods. However, the exposure experience has not been long enough for a final decision. The coatings are also useful for interior use.

Acrylic and polystyrene emulsions have about the same properties as ordinary latex paints. (Some authorities believe that the latex paints have an advantage in being easier to clean up.)

Other new materials. A lot of development and experimental work is being done with silicone resins. Such coatings are interesting because of their extremely high heat resistance and their good chemical and corrosion resistance. They also show good gloss and color retention.

Copolymers to modify alkyds continue to appear in experiments seeking to combine the generally good qualities of alkyds with other plastics. For instance, an alkyd and acrylic copolymer has shown interesting properties including rapid drying, good adhesion and retention of flexibility. Some efforts have been made to develop a polyester resin as a 100% solids varnish.

New combinations appear almost every day, such as a water-thinned mixture of latex and acrylics, and silicone additives to enhance the properties of the older synthetic mixtures and the newer epoxy and polyester finishes. A still unsolved problem for the epoxy and polyester coatings is the necessity for catalysts to ensure rapid drying. The use of such a catalyst means a batching operation to control waste of material and some catalysts react so fast that unless the material is out of the paint pot and on the wall in a hurry, it "sets" in the pot.

Special paints. For some time paint producers have been trying to expand their market in masonry, concrete and stucco finishes. The choice today is between solvent-thinned materials such as styrene-butadiene and chlorinated rubber, and the water thinned or emulsion products made with acrylics, polyvinyl acetate and styrene-butadiene (changing the ratio of styrene to butadiene enables this raw material to be thinned with either water or a solvent).

There has always been a demand for

NEW PAINTS *cont'd.*

paints which perform functions other than decoration and corrosion control. Modern paint technology has been steadily improving these special service paints and many are on the threshold of wide distribution.

Sparked by some building codes which require their use, fire-retardant paints are under intensive laboratory investigation. Some manufacturers now put out a paint which fluffs up and provides an insulating barrier when scorched by a flame. So far, most of these paints rate low in scrub resistance, but new compounds are overcoming this deficiency.

Intumescent coatings (paints which swell up when a catalyst is added) are being used for insulation and sound deadening. This demand has not yet been answered satisfactorily because adding the catalyst to the paint makes for troublesome batching problems.

The use of paint as a vehicle for applying insecticides to walls has been greatly improved. The former objectionable appearance of DDT crystals on the surface after the insecticidal paint had been applied has been mitigated by using a urea resin as a vehicle.

Paints which incorporate abrasive substances such as carborundum are available to provide slip-proof surfaces. Strippable coatings which may be peeled from the walls like the skin of a banana have been made from both chlorinated rubber and vinyl resins. Electrically conductive paints for printed or painted-on electric circuits may someday be used in building. They already exist in the laboratory.

New thickness ideas

Aside from ship's hulls, chemical plants and oil refineries put paint to its severest tests. It is not surprising, therefore, that from the engineers and maintenance men of these industries has come one of the latest advances in paint technology—a more specific description of the necessary thickness of a coating; more specific at least than today's measure of "one, two, or three coats."

So far no complete agreement has been reached on precisely how thick a coating should be. The best rule, and one which is followed by many of these maintenance men, is that the film thickness (dry-film) should be about three times the profile depth of the surface roughness (see sketch). That is, if the profile depth of the material to be covered is 2 mils, then the dry-film thickness should be at least 6 mils. However, some authorities believe that in no case should a film thickness be less than 5 mils for outdoor surfacing.

To make specifying coatings in mil thicknesses practical it was necessary to provide proper instruments. Instrument makers have now made available both dry-film gauges (a magnetic type, which gives a direct reading in mils) and a wet film thickness gauge.

In conjunction with controlled mil thickness pressure tape is often used as auxiliary protection. In severe service where as many as four coats of paint might be required to obtain sufficient thickness (over the sharp edges of structural members, for example) tape is used to reinforce the paint at the edges. This can reduce the number of coats to two over the plane surfaces. Savings of up to 25% may thus be obtained.

New techniques

One of the most exciting new developments in paint application is the hot-spray technique. Because heat makes paint thinner, it permits the use of those coatings with a very high concentration of solids (with consequent vast improvement in the opacity of single coats), and it permits the use of more viscous coatings than can be applied by brush, roller or cold spray. This method can be used to apply mastic coatings which hitherto required smear and buttering techniques.

The hot spray not only reduces the pinholes which occasionally appear in sprayed-on films, but it gives a better and thicker build-up of film coating per pass with the spray gun. Even sharp edges get a thicker coat when this technique is used. Some field applications can thus be reduced to two or three coats from the normal three or four.

Naturally, since the paint is heated to 120° to 150°, it may be sprayed outdoors in fairly cold weather and in unheated buildings in wintertime.

Some industrial maintenance users have also found that the hose line can be reduced from the normal 1" to ½", thus lightening the weight of the painter's equipment—a morale factor which cannot be overlooked.

Besides the hot spray technique, there are other new application techniques. The double-nozzle spray gun sprays vehicle and binder out of one nozzle and the drier or catalyst out of the other. Equipment is also available which mixes resin and catalyst just as they leave a single nozzle gun. By either means, a very rapid drier or catalyst may be used to produce almost instantaneous drying. In fact, the catalyst may be so fast that the overspray will be as dry as dust before it hits the ground. This means that, besides the advantage

FRANCIS MILLER—LIFE



HARD SERVICE, such as this highway guard rail, has helped develop new paints useful in building. Need for portability took spray gun out of the factory and into construction.

of high speed drying to make the newly painted area available for use almost immediately, protective scaffolding and drop cloths can often be eliminated.

Another advance in spray technique is the combination of hydraulic spray with hot spray. The hydraulic spray (pumping the paint itself under pressure) requires a fairly thin-bodied paint to be successful. But combining hydraulic pressure with the vapor pressure obtained by heating the paint up to 200° F. (close to boiling for most solvents) raises the pressure up to about 450 lb. per sq. in. Upon release from the restrictive nozzle of the spray gun, the paint atomizes without the use of compressed air.

Besides lighter equipment (the air hose is eliminated), the combination system is said to lose less paint to overspray and to be safer because of less rebound. As in other hot-spray systems, the paint can have a heavier body with a higher percentage of solids and heavier film thicknesses can be laid on in one pass of the spray gun.

In the developmental stage is a system which uses superheated dry steam instead of air to atomize the paint. Such a system would reduce the overspray still further.

Still in the experimental stage, but now considered a likelihood for the future, is an electronic spray which will eliminate all overspray and possibly use electrostatic attraction to spread the paint.

OUTDOOR COATING THICKNESSES

Exposure	Film thickness (mils)	Average life (years)
Rural atmosphere	4 to 6	6
Fume contaminated atmosphere	6 to 8	4
Heavy fumes	6 to 8	2½
Splash or spillage	8 to 20	varies
Immersion	60 to 250	5 to 10

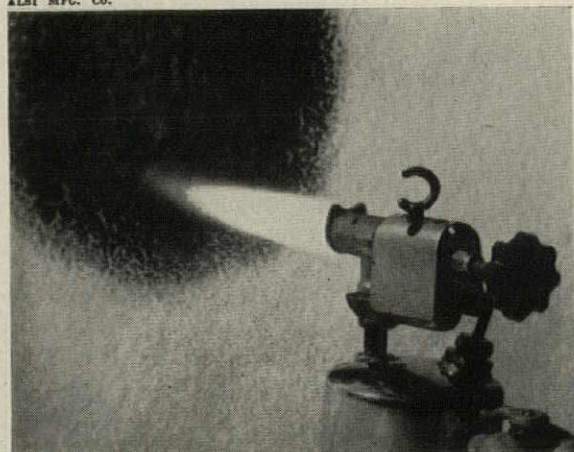


DEVILBISS CO.

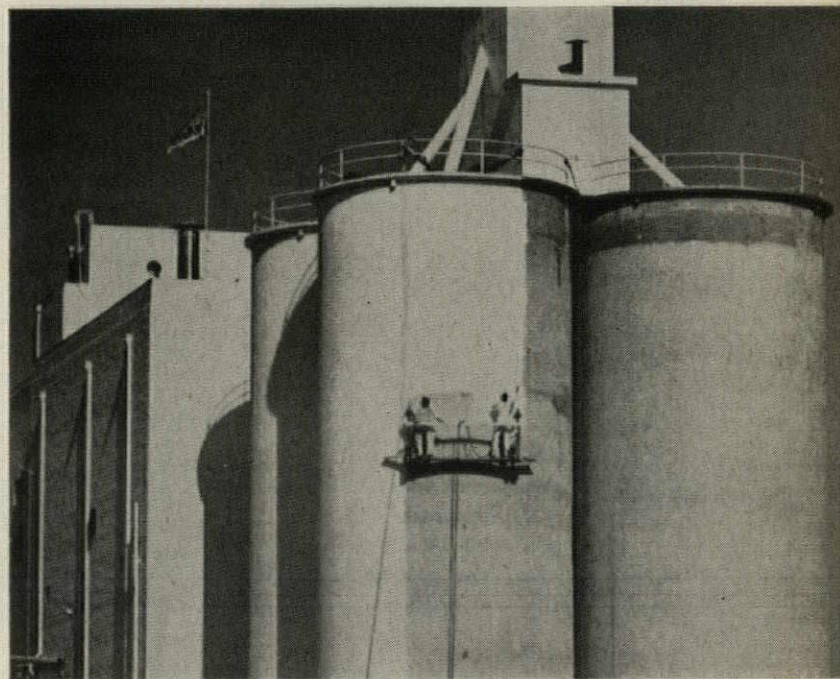
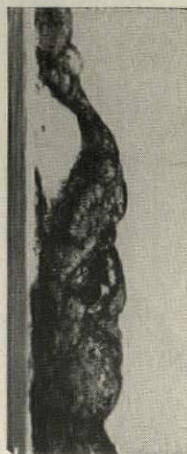
HOT SPRAY painting apartments is practical with portable equipment. Heat, fast catalyst and odorless paint cut down number of coats, drying time and nuisance.

BAKELITE CO.

ALSI MFG. CO.



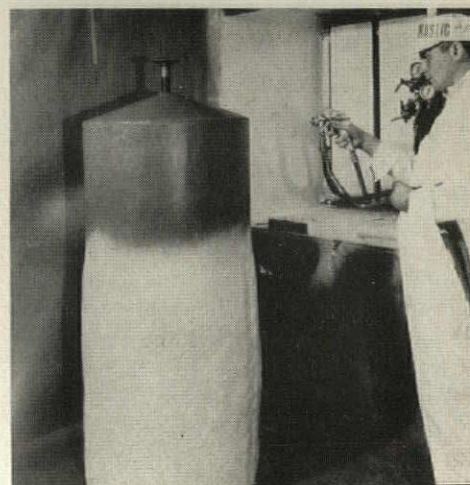
FIRE RETARDANT paint swells up and forms insulating layer when touched by flame. Required by some codes, paint of this kind does not offer much "scrub resistance."



MASONRY painting now can call on paints which resist alkali action of concrete, mortar and stucco. Here malt silos are being coated against moisture infiltration.

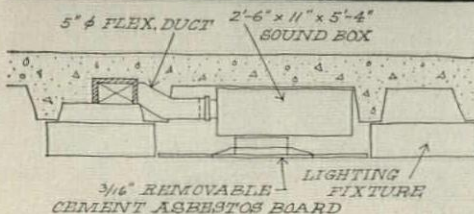
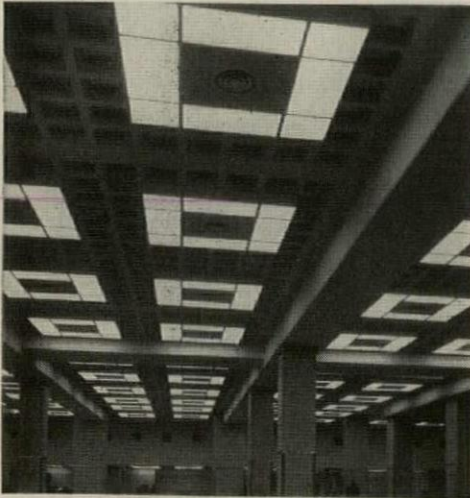
INTUMESCENT paints form an insulating layer by foaming under catalytic action. They can also be used as sound deadening agent on metal curtain walls and roofs.

DEVILBISS CO.



TECHNICAL NOTES

CARRIER CORP.



BURIED AIR DUCTS

To save the space and cost of a hung ceiling ducts are cast in slab

A novel principle in the design of big-building high velocity air conditioning was introduced in the exhibit area of New York's massive four-level Coliseum, where about 75% of the branch ductwork is embedded in concrete floor slabs. Another innovation: ceiling air diffusers are the core of 8' square fluorescent lighting fixtures.

The principle of burying air ducts (sometimes used in homebuilding) was adopted to fit the Coliseum's need for a ceiling without the conventional use of acoustical paneling or a hung ceiling. Such a hung ceiling would have cost an extra \$100,000 and would have lowered the ceilings which must be high to accommodate many of the Coliseum exhibits.

The embedded ducts were fabricated in the early stages of construction, waterproofed and anchored to the structural steel before concrete was poured. The ducts are made of 1" thick marine-type plywood paneling. To prevent the ducts from being crushed during pouring of concrete, sheet metal shields were placed around them and removed as the concrete was poured.

The ducts taper down from 15" wide x 5" deep at the end which is connected to mixing boxes (where hot and cold air is delivered in vertical risers) to 8" wide x 5" deep at the far end of the run. Each branch duct serves from one to four out-

lets. Flexible conduit connections (5" diameter) carry the high velocity air to sound attenuator boxes which, in turn, are connected to circular ceiling diffusers.

Architects: Leon and Lionel Levy; lighting consultant: Abe Feder; engineer: Guy B. Panero; mechanical contractors: Almirall & Co.; general contractors: Walsh, Fuller & Slattery.

OUTSIDE ELEVATOR

Clinging to a hotel, plastic cab provides sightseeing ride to roof-top bar

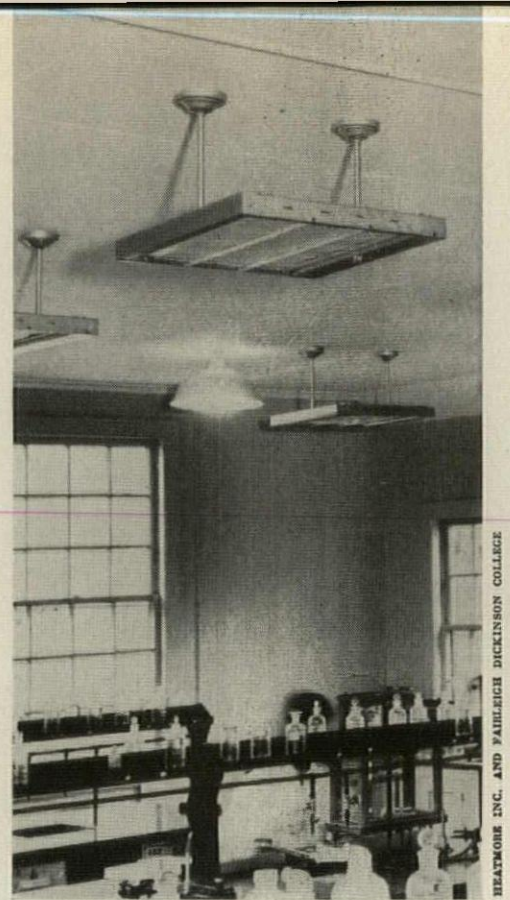
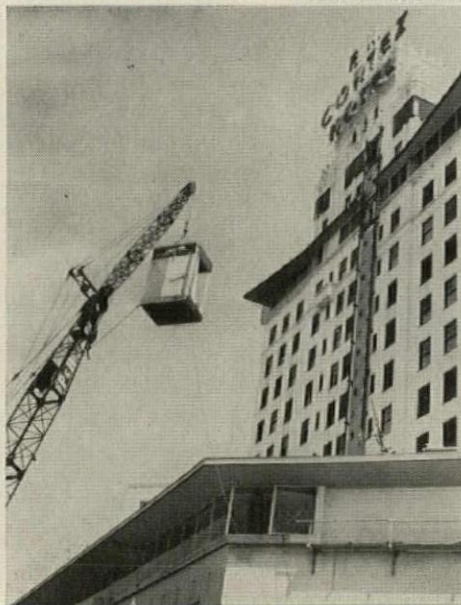
A \$100,000 outside elevator will enable hotel guests of the remodeled Hotel El Cortez to see the sights of San Diego as they travel up from the lobby to the 12th- and 15th-floor restaurants and bars. The 16-passenger elevator cab is clear acrylic plastic on three sides, rides on a 175' long hydraulic ram of 16" diameter steel which, to ground observers, is nearly invisible and creates the illusion of the cab moving up and down without a visible means of support. The cab has a two-way communication system, a heating and cooling system, is soundproofed and has piped-in music. At the lobby level, it comes to rest in an all-glass hatchway.

To install the system a well-drilling rig was assembled in the hotel basement to drill the 175' shaft for the ram and cylinder. The ram itself was welded together section by section and turned in a special lathe at the jobsite to smooth it down before being lowered into the cylinder.

The manufacturers say that the lift is not limited to hydraulic rams and, indeed, can be adapted to a cable support concealed in the side of a building of up to 50 stories.

Architects: Paderewski, Mitchell & Dean.

GLASS ELEVATOR CORP.



HEATMORE INC. AND FAIRLEIGH DICKINSON COLLEGE

ELECTRIC HEATING

Radiant panels are economical for temporary buildings in north

Most people dismiss electric heating for northern climates without study after a few preliminary calculations, but sometimes circumstances make it economical. Here, in the case of two temporary buildings at Fairleigh Dickinson College, Teaneck, N.J., is an example of the successful use of electric radiant heating.

The commons building was assembled by moving and combining several small frame buildings. It was to have a useful life of only about ten years. A conventional steam heating system would have cost about \$20,000—or \$2,000 per year without maintenance. The installed cost of radiant ceramic system was about \$4,000, or \$400 per year. Electric fuel costs were twice that of oil, but over the ten-year period, the total initial and operating cost advantage lay with electric heaters. Even if the difference in fuel costs were \$1,500 per year—based on \$1,500 for oil and \$3,000 for power—the electric system would still be cheaper.

To maintain a design temperature of 72°F. at an outside temperature of 10°F. required, besides careful insulation of the building, a power input of 28.2 kw.

The heating units in the commons building were placed beneath the windows. In the chemistry building ceramic radiant heating panels were hung from the ceiling above the benches in such a way that radiation was beamed on the students as they worked at their benches.

Architects: Fellheimer & Wagner; electrical contractors: John O'Brien and William Horn; consultant: A. J. Monack.

NEW STAINLESS STEEL

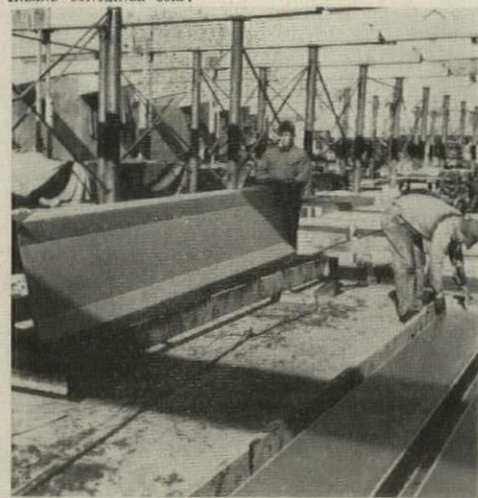
"200 series" uses relatively little short-supply nickel

New low-nickel, austenitic stainless steels, the "200 series," have excellent potentialities for architectural use, according to the American Iron & Steel Institute. Skidmore, Owings & Merrill's Inland Steel building, under construction in Chicago, will use this type of steel instead of the older "300 series," and the architects of other buildings now in design stages have tentatively specified it.

The "200 series" is the result of years of research on low-nickel, high manganese types of stainless steel which go back to World War II when nickel supplies were very low.

The physical and mechanical properties of the new series are very similar to those of the higher nickel types (types 301 and 302, for instance). Yield strength, ultimate tensile strength and hardness in the annealed condition are higher, but not enough to affect fabrication or erection. Welding techniques used for the 300 series can be used for the 200 series. Costs are also comparable.

INLAND CONTAINER CORP.



FIBERBOARD FORMS

Labor costs are cut 66% by use of corrugated paper forms

Substantial reductions in labor and material costs have been made by the use of corrugated fiberboard forms for cast-in-place concrete (AF, May '53, April '54).

Here's a case involving precast concrete. The building is a 25,000 sq. ft., one-story fireproof structure in Crawfordsville, Ind. The design required over 350 identical unit roof panels of reinforced concrete, each 18' long, 4' wide. They would have necessitated a rather

complex wood form. Inland Container Corp., which ordinarily makes corrugated boxes, devised a corrugated form which met the specifications and could be assembled by unskilled labor.

An analysis showed that while costs for the forms themselves were comparable with other forming materials, a 66% reduction in labor costs was achieved. The saving was made possible because of: easy handling and storage; accurate forming because each form was new; fast stripping; and, since the corrugated form was expendable, cleaning, repairing and storage after use were eliminated. (Wood forms would have been used only three times each; metal forms would have been very costly.)

Architect-contractor: Huber, Hunt & Nichols.

CLIMATE CONTROL

Central panel provides fingertip control over heating and conditioning

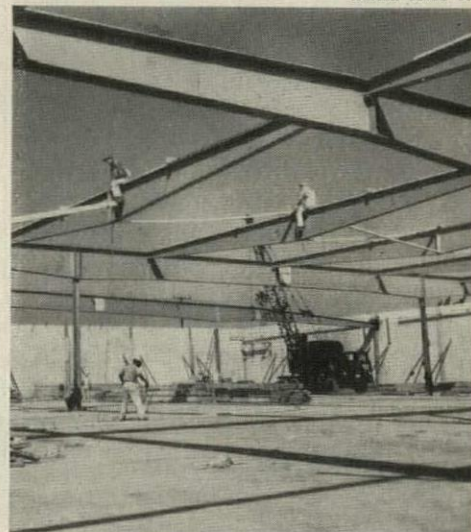
Engineers have completed installation of a master panel that applies the principles of electronic automation to the heating and ventilating of Prudential Insurance Co.'s Chicago skyscraper. At the dial-studded control panel, the building's engineer can singlehandedly monitor and control the heating and air-conditioning system in the 41-story structure. The panel is linked to 180 high-sensitivity electronic thermostats and 1,200 pneumatic and electric thermostats. These thermostats are integrated into a network of more than 20 mi. of copper tubing and 30 mi. of wiring.

The master control panel is patterned after the "nerve centers" of modern chemical, refining and processing industries. It automatically adjusts for the different heating or cooling needs posed by outdoor conditions. It also compensates for changes in temperature that occur in the morning when the building suddenly fills with people and in the evening when they leave, and it adjusts automatically for the heat produced by lights, by office machinery and by large numbers of people in conference rooms, auditoriums and central working spaces. The master panel also gives the building engineer supervision over all of the automatic processes. By the flick of a switch, he can shift the building's air-conditioning plant from day to night operation or to summer or winter schedule. The system is designed so that it can be supplemented later, if desired, with such new electronic developments as wind direction indicators, wind velocity

indicators, sun intensity meters and electronic "people counters" which would keep tab of the number of persons entering or leaving a floor via the elevators. (Nothing has been devised so far for keeping track of those leaving via stairways... or windows.) Another future possibility is an electronic scanner to check thermostats every five minutes and automatically record the temperatures for the engineer. At present, the engineer must perforce use his index finger to push a control panel check button.

Architects: Naess & Murphy; engineers: Minneapolis-Honeywell Regulator Co.

KAISER STEEL CO.



TAPERED GIRDERS

Built-up from plate, these long span girders save steel

To provide maximum headroom while using a minimum of steel, these welded girders were built up from steel plate 190' in length. The six-ton transverse girders provide extra headroom between supporting columns by tailoring the shape of the girders to their stress patterns and thus eliminating much of the depth required with rolled beams. The shape also eliminates much of the weight and cost of rolled beams (AF, Aug. '55).

The double-tapered cross members, similarly built up from plate, provide increased headroom between the transverse beams. The double taper is produced from wide plates by making a single diagonal cut with little or no waste of material. The halves are then rotated and spliced to give maximum depth at midspan.

Architect-engineers: Stiles & Robert Clements; general contractor: Harold Roach Construction Co.

for all concerned

CAPITOL BOTCHERY

The Great Capitol Boondoggle—tearing down the historic east front of the Capitol and rebuilding it further forward to new ideas—can now be prevented only by a sensible report from a committee of architects. The factual story of this remarkable episode (see News) explains better than any editorial FORUM's reasons for joining LIFE and a clear majority of the press in the belief that this is a highly dubious undertaking.

MISSING INDUSTRY

In the city of Chicago there is a remarkable institution—the Museum of Science and Industry—which boasts what is perhaps the heaviest museum attendance in the world, 2.5 million a year. Most of it is kids, boys and girls of high school age, happily satisfying their curiosity through exhibits “of which they can be a part.” They push buttons, pedal bicycles, listen to phones, ascend a complete mine shaft.

Major Lohr, director of the museum, says that the installations represent an astonishing cost. The minimum for a successful one has to be \$250,000, or one quarter of a million cold. Of such exhibits the radio industry, the telephone industry, the hardwood association and others have been happy to supply more than enough to run the museum and keep the directors happy as their flooring wears steadily down under millions of inquisitive feet. Floor wear is used as a measure of interest.

Lohr asks, however, who there is in the building industry that he might approach to get his exhibits rounded out with the biggest industry of all. Up until now he has found nobody who could give him a responsive answer. No single organization seems to be big enough, and nobody can speak for the industry as a whole.

This, we submit, is trenchant though oblique evidence of something the industry must cure. This biggest industry of all is small in its individual units, which moreover fall into many different types: the producers are both manufacturers and builders; the directive forces are architects and engineers.

We might suggest the various building congresses or the Producers Council or the Building Research Institute as a set of organizations that come nearest to presenting a potent and united building industry front: but there would be immediate protest from architects and engineers if they were to be left out.

So FORUM asks its readers how Major Lohr's dilemma might be solved. If we can get the answer it may have value for us all.

HUMANE TECHNOLOGY

On p. 152 appears a rather discouraging description of building in Germany behind the Iron Curtain. The anonymous author is obviously well acquainted with the German scene; but we do not agree with his thesis that the Communist regimentation of East

Germany today is quite so closely connected with exclusively German history. In the twenties fervor for mechanization was everywhere, not only in Germany but in France, England and America, and usually in proportion as the Industrial Revolution was beginning to permeate the building industry. Germany, high in the industrial scale, carried the development far.

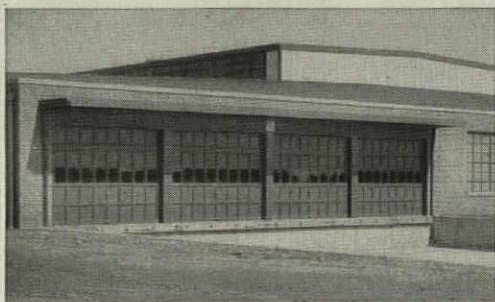
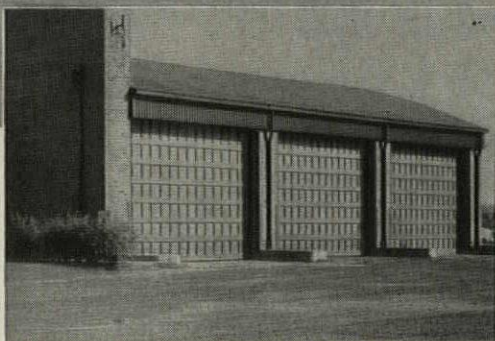
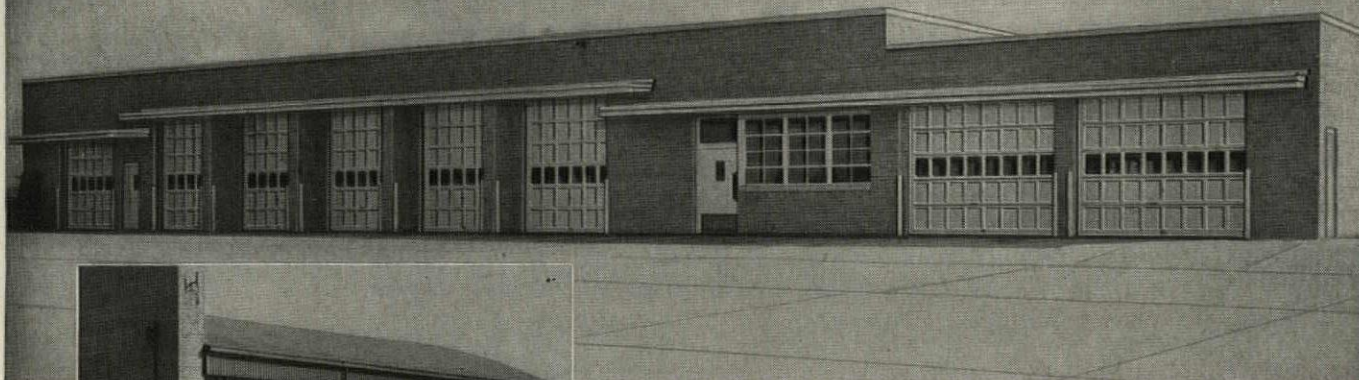
By now, as the author concedes, in the West the exaggerations have been toned down. Le Corbusier, who once exulted in the *machine à habiter*, now designs in a manner almost the reverse, and Gropius, whose *Bauhaus* carried out similar experiments, can be counted on (with his associates) to design schools and other kinds of buildings which are outstanding for their humane use of art and also their human scale and not only for technical competence. Meanwhile the need of an industrial society for standardized *elements* and closer teamwork cannot be reversed, even though the outcome must transcend them.

* * *

Frank Lloyd Wright celebrated his 87th birthday on June 8 with his Guggenheim Museum project in New York firmly under way at last. Courage is something that Wright unfailingly injects into this timid world, and we thank him for it more fervently every year.

Douglas Haskell

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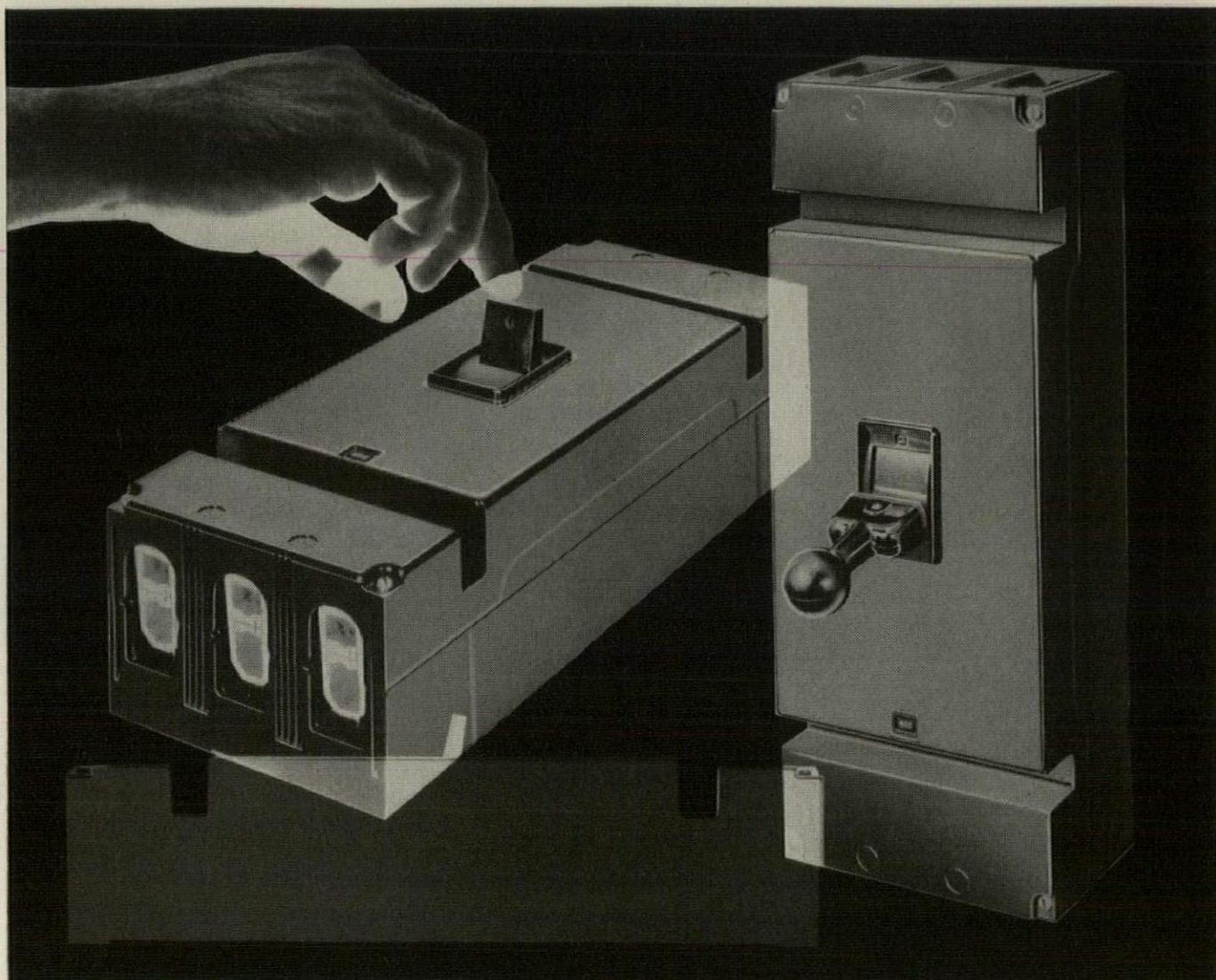
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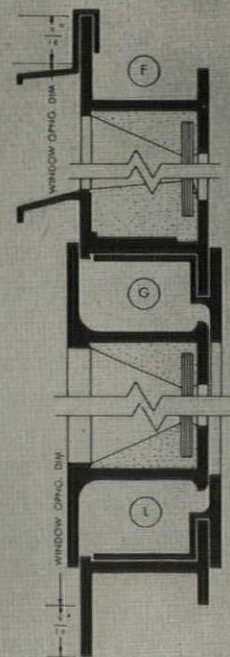
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THE LENDER'S INFLUENCE *cont'd.*

other area. The lender may look suspiciously at innovations in equipment, but he is aware of the field, keeps very close tabs on building materials and equipment and is generally alert to what is truly an improvement. So, too, with new planning approaches—drive-in banks, country office buildings and the like. As long as the approach is flexible, the lender will show it tolerance. But if a building deviates markedly from the appearance of others around it, there is only one thing to do—avoid it.

Style is the big reason why Webb & Knapp's helix apartment house—a circular building with pie-shaped apartments pointing in toward a central utilities stack—remains unfinanced after five years of trying. It was one of the reasons why Herbert Greenwald, Chicago promoter of Ludwig Mies van der Rohe's Lake Shore apartments, collected a pocketful of lenders' rejections when he set out to build the first of the glass-walled structures. (Greenwald eventually got backing from a relatively small mortgagee, but had to make compromises on the interior layout to get it.)

Taught to behave

By singling out what he doesn't like—and coupling this with a policy of flat rejection—the lender accomplishes two things: 1) He assures himself of a supply of buildings to lend on, most of which will conform before they even get to him; 2) he kicks away the props from any real reason for having to make positive suggestions for altering design. The mortgagee rarely needs to have any contact at all with the architect today. And the result is the architect can point to building after building on which he can swear there has been no lender's influence.

Denver Architect Raymond Harry Ervin states the case about as candidly as anyone can. Ervin feels he has had almost no interference in his work from lenders. But this, he concedes, is probably because he has learned what the businessman wants in his buildings.

"Years ago, I got over the adage that architecture is 90% beauty and 10% business," Ervin says. "It's been a compromise, I admit, but not so bad as some people would like to make out. . . . The architect comes to realize the lender is risking the policy-holders' money. . . . With me, . . . it's about 40% beauty and 60% business."

To say that negativism and rejection are the rules the lender applies to commercial buildings is simply to say that there are exceptions to these rules. The pat description of the lender's role conveniently overlooks them. But it is just these deviations that expose the oversimplification for what it is.

It really doesn't count much to a lender what a New York office building looks like, or for that matter, any

other building, well located, where the demand for space is great. Presented with a set of lease commitments from space-hungry tenants and a black-ink bank statement from the promoter, he can afford to be indifferent to the building's artistry or lack of it. An office tower by Architect William Lescaze will cause no more qualms than an assembly-line wedding-cake creation. Neither will he fret if he buys the owner bonds of a Rockefeller Center, or the paper of a Lever House, a Seagram building, or a Socony Mobil building. In each case, his money is riding on the gold-plated backer or tenant; the building can be anything the owner wants it to be. (A recent example of this: Frank Lloyd Wright's Bartlesville, Okla. apartment-office structure for H. C. Price Co. Several mortgage bankers say flatly that the building would never have been financed without the name of the company to back it.)

Architect I. M. Pei, who has done many of the Webb & Knapp buildings, feels certain that the bigger the client is and the bigger the job is, the less the lender bothers about the architecture. Pei, for instance, had almost no contact at all with Equitable Life when he did the Mile High Center in Denver. He didn't even take over the plans himself.

Equitable did query Pei about the floor-level air conditioning for the building. He called them about it, he remembers, explained his reasons for the system, promised to demonstrate when the steel structure was up. But that was the end of it, he says. He's not even sure the company came around to look at the demonstration when it was set up.

This relative indifference to the look of blue-chip projects shows up even more strongly in the industrial sale-leaseback deals. This is an area dominated by the insurance companies, and is just about the most profitable form of real estate investment today (net returns run 4½% to 5%, and there is the strong chance of a built-in buyer at the end of 20 or 25 years). Here the lender probably has the least to say about the eventual shape and use of the property. But he has the least cause to say it, if the long-term tenant is a General Motors, a Minneapolis-Honeywell, or the like. One happy result to date: sale-leaseback has produced some of the best functional architecture in all of the non-residential field.

The pride of ownership

Strangely enough, the lender may show neither indifference nor reaction when it comes to building for himself. Lender-owned real estate is at times far more imaginative and forward-looking than the projects they just finance. Prudential can point to its office building in Los Angeles, New York Life to Manhattan House in New York City, Manufacturers Trust to its Fifth Avenue bank, all better-than-average efforts. Here the lender has recognized that planning and design are pow-

continued on p. 168

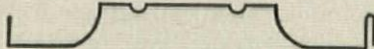
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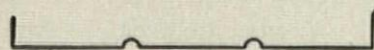


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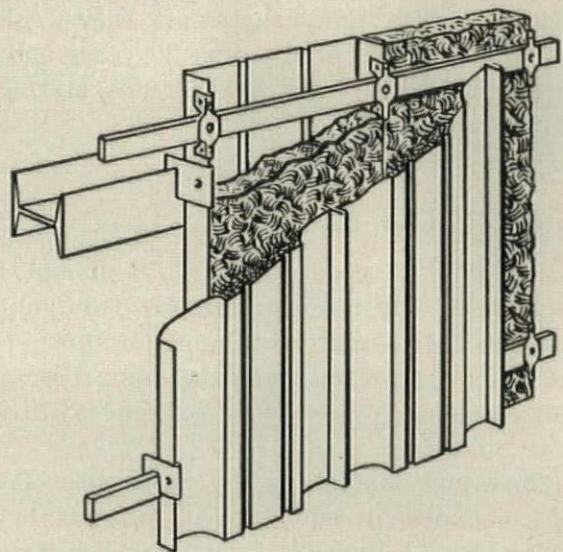


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THE LENDER'S INFLUENCE *cont'd.*

erful economic forces in themselves, sometimes subtle, and sometimes direct, in their effect on cold, long-range dollar income. The trouble is that relatively few of the money merchants sense this; if they did, there would be a more consistent standard of architectural quality in the building projects they produce for themselves.

There is real reason for the lender to care about what he builds for himself, and, perhaps, it's best explained by Henri Bourneuf, an executive of New England Mutual. Bourneuf points out that when a company holds a mortgage on a property, it runs the risk of participating in any losses on it. But it doesn't share in the future profits. If the company owns the property, however, it not only risks the losses, but can take a bite from the profits, too. So the investment is made with an eye to increasing the long-term value and dependable income.

In the case of one outstanding architectural investment by New England Mutual, the East Gate apartments at Cambridge, Mass., the company set its sights well above run-of-the-mill construction. "We didn't see any point," Bourneuf says, "in building and owning apartment buildings which would not be better than average and carry a degree of prestige for the future, as well as the present." He admits that had they just been lending on the same apartments, they would have thought only in terms of the next 20 years and would have preferred lower costs, lower rents, and accepted lower-grade architecture.

The unrecognized force

Yet such cases of good architectural judgment, even in the name of self-interest, are far from universal. Just what is good architecture, and just how radically it may affect long-term demands (thus becoming in itself an economic force) many lenders have been unable to recognize.

An interesting example is the experience of life insurance companies in building tall apartments in Los Angeles and San Francisco. Occupancy has never been as high as was hoped for. This gets into questions of sheer taste, questions of architectural form and plan arrangement. These are tall buildings, and a great many Californians dislike living in tall buildings. Some say the apartments have an unwanted "New York look." Chances are, a great many local architects could have warned the insurance companies that their neighbors had a different architectural standard. This taste factor, however, was the kind of factor that belongs with the intangibles, for which there are no open-and-shut economic indexes.

Or take a contrary case. The outstanding success of Rockefeller Center in New York has undoubtedly been strongly affected by the architectural concept of the

whole. It is virtually impossible to imagine an equal financial success for any other equal area of space without the center's cohesive and impressive architectural character. Yet, how to measure this?

The fact is that the degree of alertness and sensitivity of large lending institutions to the quality of architectural planning and design, even in their own holdings, has wavered all over the lot. There is no evidence that the less-than-perfect architectural character of the individual towers at Pittsburgh's Gateway Center swayed the judgment of the lender-owner (Equitable) in any way, and it must have an effect on long-term desirability. In Philadelphia, qualified architectural opinion already predicts a less-assured future for the Penn Center because the handsome scheme first suggested by Architect-Planner Bacon and his associates was replaced by an architecturally barren scheme at the command of lenders and investors. Local architects are still battling for greater pleasantness in the details of the project, and this is a battle against the obliviousness of lenders to the fact that a loss of pleasantness can result in a loss of hard-won money.

What every lender should know

To set up a recognized financial measuring stick for such intangible factors is really impossible, but a degree of sophistication could be a help. Architectural criticism is a form of literature that lenders might very well read. For example, any architectural critic of ordinary competence could tell the banking fraternity that some of the wildest googie aberrations in architecture are being built in startling numbers now for highly respected banks. The chance such buildings have of commanding respect day-after-tomorrow is very low. Over any long period, it is reason, not unreason, that is likely to prevail. Consequently, bad investment results from jazzy architecture are easy to predict. And lest the uncultivated banker rise too fast to declare such judgments of taste unreliable, it may be pertinent to recount that heavy money returns have been earned by those whose good taste was unique—thus Architect Mies van der Rohe of Chicago points out that his early investment in Paul Klee (then a painter totally unknown) has earned him a rate of financial increment that many a banker might envy.

The preference for perpetuating the present—or at worst, looking backward and financing the kind of buildings that used to be good mortgage risks—is, in many ways, the full flowering of negativism. It is what Frank Lloyd Wright talked about in 1927 when he said: "It needs no argument to convince anyone that new and constructive ideas in art and life cannot take place by appealing to the banker or broker. The banker is a banker because he hangs to the old order and is doomed to hang with it."

In 1956, despite the changes, it can't be denied that hanging goes on.



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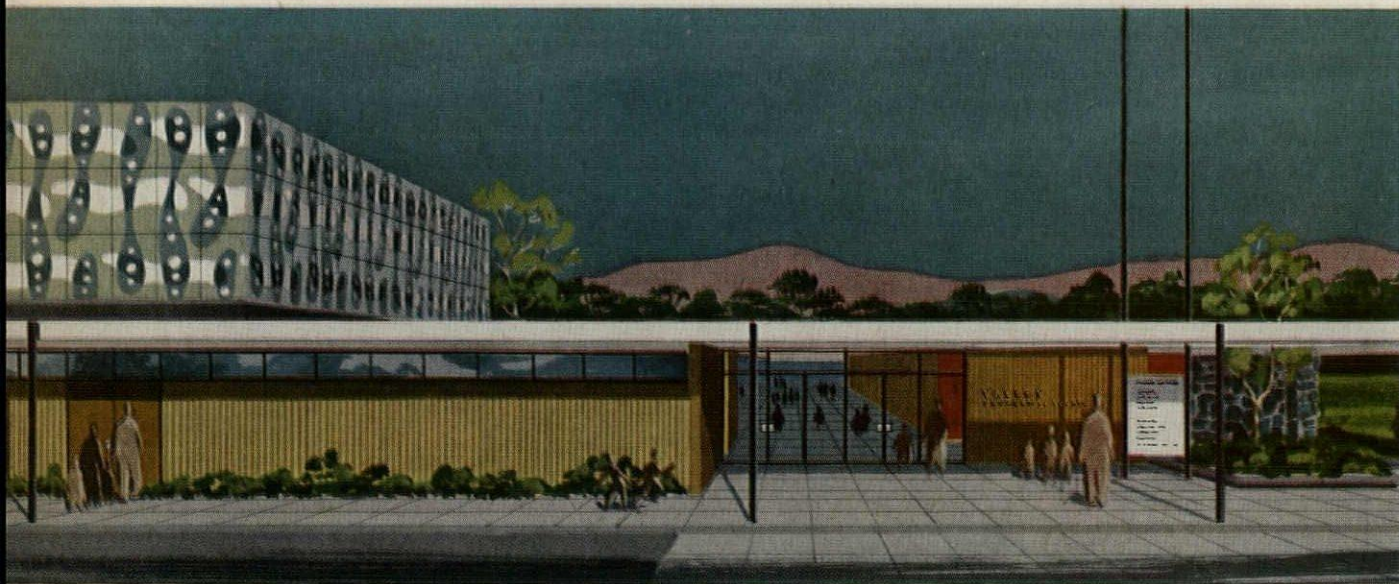
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A schoolboy's school . . .
as done by an architect



Elementary school at top of page designed by David DiZinno, Lyndhurst, O., age 7.

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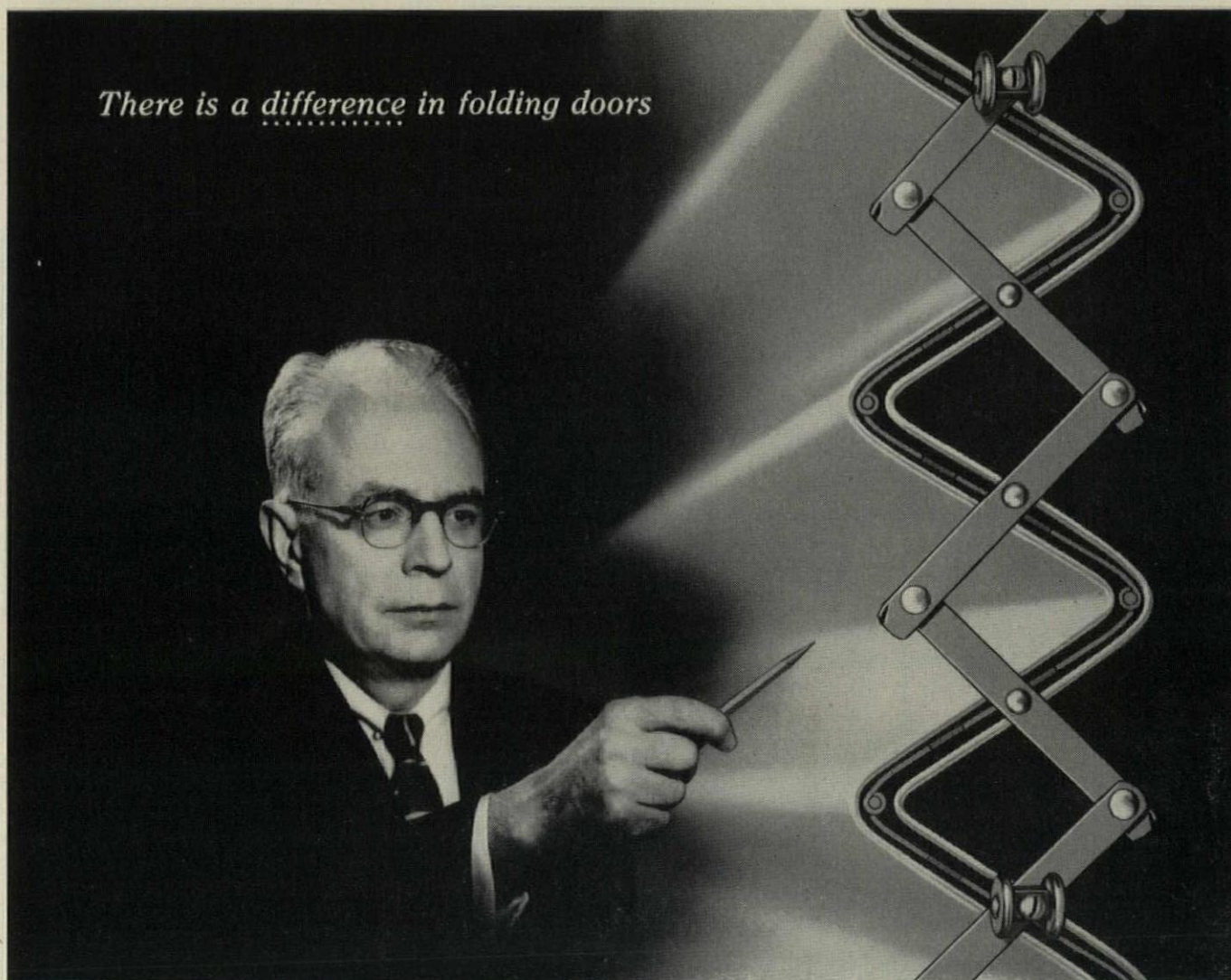


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RESEARCH

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THREE NEW PROGRAMS

Three new programs that can do much to meet the need for information about building research have been recently announced: 1) the "Building Science Directory," a new quarterly loose-leaf publication by the Building Research Institute; 2) an "Index of Architectural and Building Information"; and 3) Building Products Registration. The last two are to be conducted by the AIA's committee on research.

Each of these programs complements the other. The Building Science Directory will serve as a guide to current research programs and publications. The Index of Architectural and Building Information will provide abstracts of architectural and building information already authenticated, published or unpublished, and build bibliographies of technical literature. Building Products Registration will provide means for authenticating the research and product development data of partisan organizations, such as manufacturers and trade associations, to permit architects and contractors to use information from such sources with greater confidence.

All of these programs are being started through recognition of the dire need for such services by the building industry. Unfortunately, adequate financial support is not yet available to permit any of the three programs to move ahead rapidly. But, it is important that they have been activated.

SCIENCE DIRECTORY

The Building Research Institute has undertaken this publication as a service to its members. The first issue of the Directory was mailed in the middle of May. Nonmembers of the Institute are being invited to subscribe at a small fee. The loose-leaf format has been selected to permit the quarterly issues to be readily inserted in the binder that was furnished with the first issue.

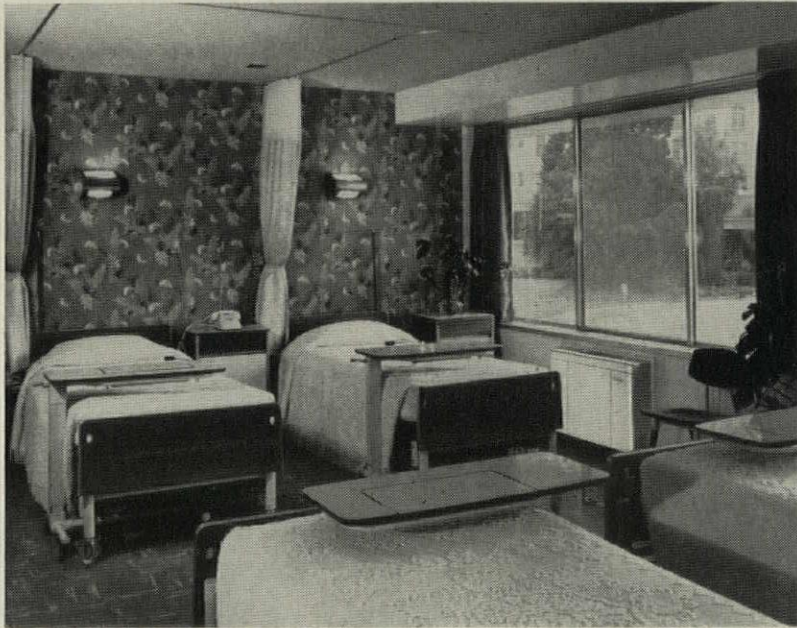
The Directory is divided into three sections. The first of these will list the organizations of the building industry which have some stake in building science. The first issue included a revised and up-dated version of BRI's former publication, "Trade Associations and Professional Societies of the Building Industry." Future issues of the Directory will expand this section by adding lists of the for-profit and not-for-profit private research organizations, and colleges and universities performing building research. The second section treats separately each organization with a research program and devotes up to two

continued on p. 176

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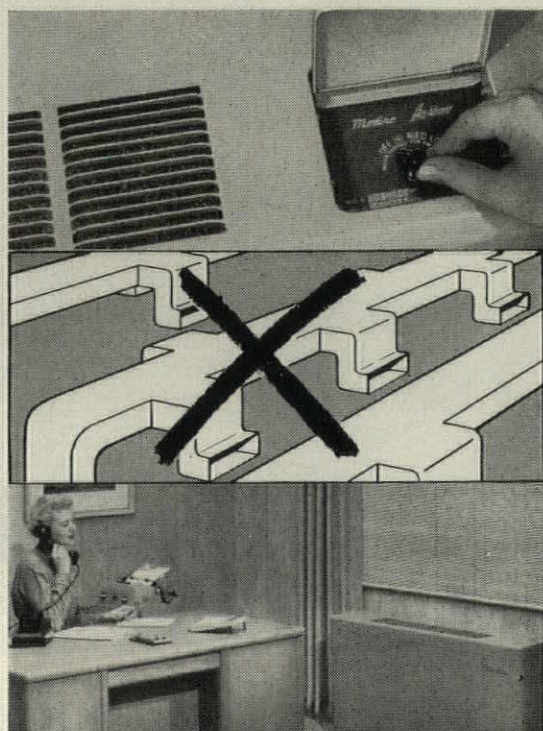
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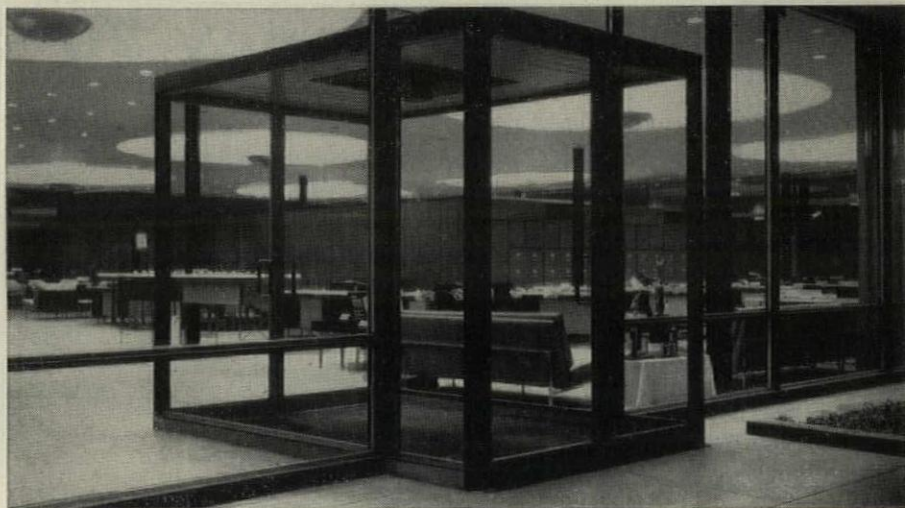
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RESEARCH *cont'd.*

sides of an 8½" x 11" page to detailed information. Included on these pages are: the name, address and telephone numbers of the people in the organization to contact for additional information; a comprehensive description of the organization; a list of current research programs; a list of publications, with information on how they may be obtained; a description of the educational program of the organization; and a description of activities related to stand-

ards and codes. Twelve such Directory pages were included in the first issue and a similar number will be published each quarter. The third section of the Directory will be prepared once a year. It will be a complete cross-reference index of all of the information in the first two sections.

The Building Science Directory is being developed to serve as a research tool—a reference which will direct information seekers to the primary sources of current

data on all aspects of building technology. However, the limited scale of the undertaking at present means a delay of several years before the work will have the comprehensive character that is now needed.

Subscription information may be obtained from Charles R. Koehler, editor, Building Research Institute, 2101 Constitution Ave., Washington 25, D.C.

INDEX OF INFORMATION

Not yet ready for publication, the Index has been announced to the architectural profession in "Special Report No. 4, A Statement on Architectural Research" by the AIA Committee on Research. The abstracting service to be provided by the Index was planned following a 1953 exploratory conference, convened by the Building Research Advisory Board of the National Academy of Sciences at the request of AIA. The early development of this program was conducted by the AIA Northwest Regional Committee on Research.

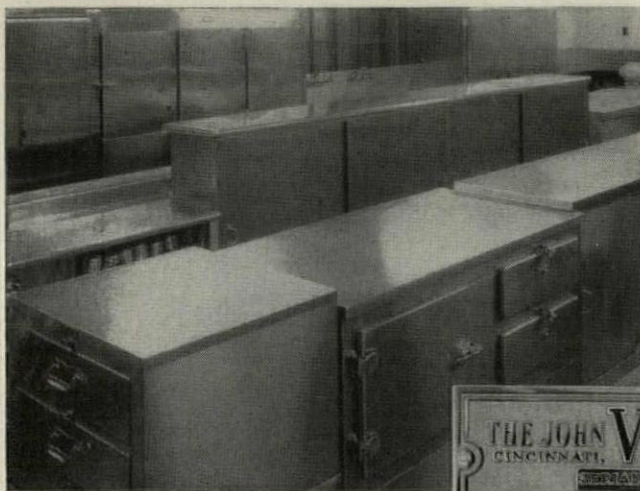
This service is currently planned as a self-supporting venture, paid for through subscriptions to the Index. Unpublished technical reports as well as published matter will be included. Special attention will be devoted to technical material that is not normally included in professional and building industry publications or in AIA publications.

PRODUCTS REGISTRATION

AIA's Committee on Research also announced this program in its "Special Report No. 4." (It was revealed to a selected group of trade association and professional society executives early in April as a means of establishing industry support.)

This program will probably be the most difficult of all to bring to full realization. As a means of providing architects, engineers, contractors and their clients with confidence in building components and materials, it will conduct investigations of data provided by manufacturers, trade associations, and acceptable laboratories. This information service will not guarantee results but will provide assurance that advertising claims and reported tests results are factual and authentic. It is expected that this program will be supported by fees received from the material and component manufacturers. Special problems to be solved in this program will involve the evaluation of "meaningfulness" of varying forms of data presentation in the cases of the numerous products for which standard specifications and standard test procedures have yet to be developed.

Additional information on both the "Index of Architectural and Building Information" and Building Products Registration may be obtained from Walter A. Taylor, director, Research and Education Dept., American Institute of Architects, 1735 New York Ave., N.W., Washington 6.



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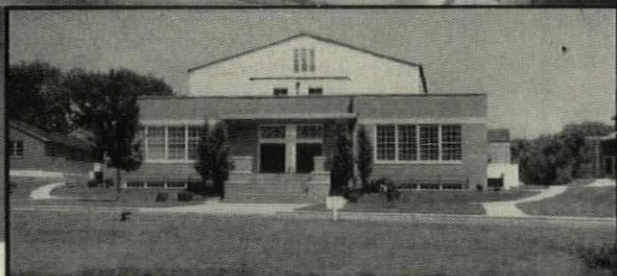
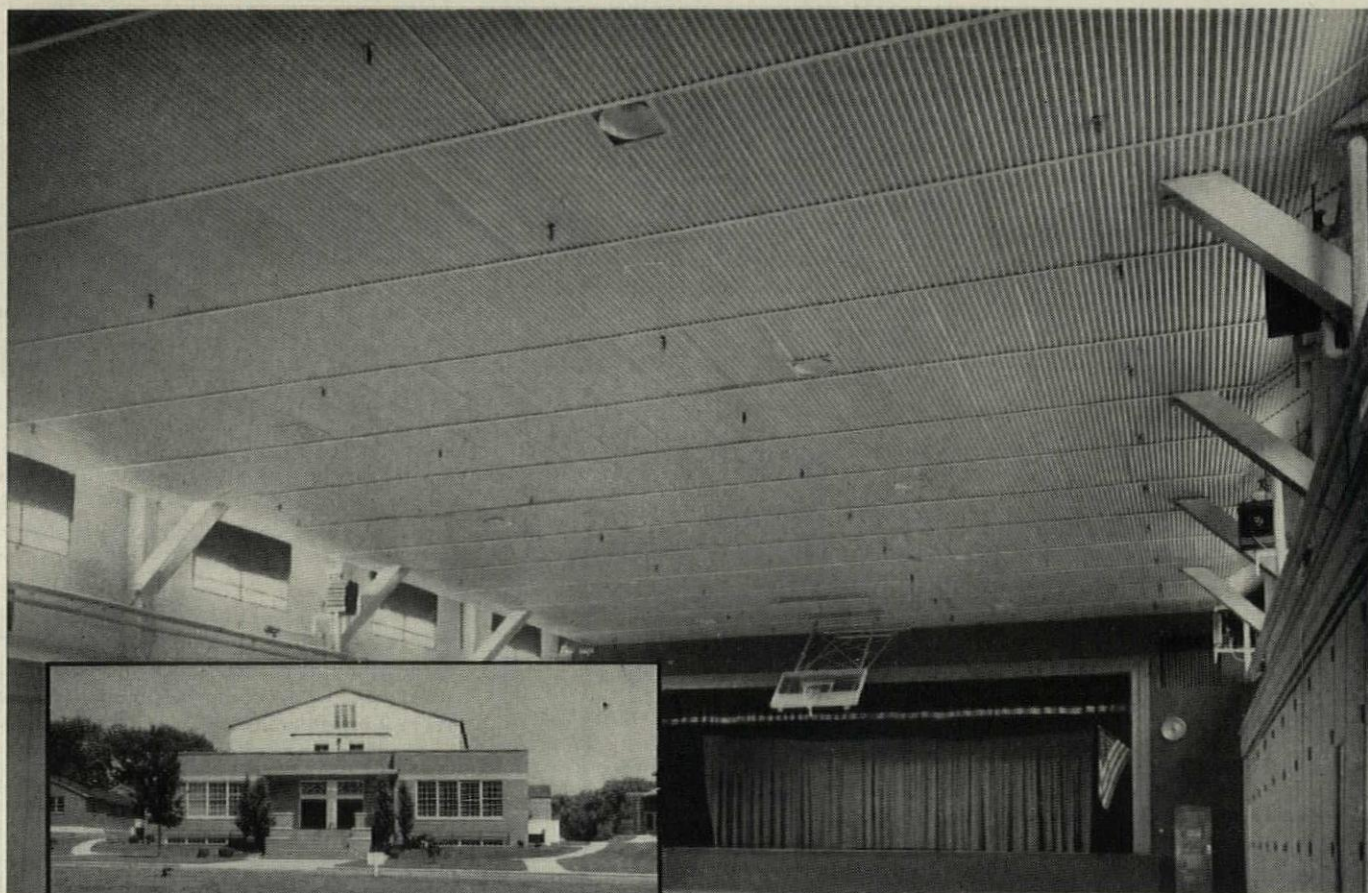
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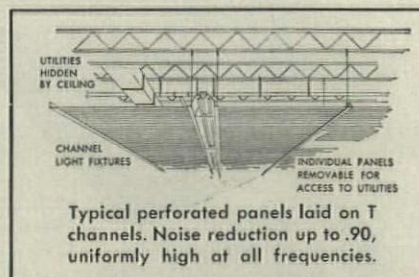
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demanding work," is Hamlin's summary of him at the beginning of his career in the US. In support of this, Hamlin recreates the architect's eleven London years, his work with Samuel Pepys Cockrell (in the design of the Admiralty Building, especially), his independently designed small public buildings, his residential alterations and two new houses: Ashdown House, and Hammerwood Lodge. He also demonstrates that Latrobe's engineering competence had

progressed far enough, while still in England, for him to have submitted proposals for the Chelmsford Canal. This strengthening and deepening of our knowledge of Latrobe's earlier career leaves no doubt that most of the main lines of its development had been established in England, and that he was a fully formed and experienced professional man.

In his encounters with American conditions, Latrobe's life thus reveals the oppor-

tunities and the difficulties which faced a man of creative ability and maturity, not those met by "an untrained bungler"—as Latrobe's enemies later asserted. That it was impossible in America to build the architectural designs of contemporary England without major changes requires little demonstration. The specific conditions of climate, the difference in living habits and standards, the changed availability of materials and craftsmen, the organization of the building business—all demanded and received recognition in design. Early in his career on this continent Latrobe found that the climate obliged him to locate "the inhabited apartments" on the south side of his buildings, leaving on the north stairs, lobbies, halls and other elements of communication. American manners required house designs emphasizing compactness, convenience and—above all—comfort, though with relatively moderate means for entertaining company. Latrobe's plans were carefully studied to separate living and service activities, to assure privacy. Care was taken to develop the function of each room, designing it for its own special use. These characteristics, evidenced in Latrobe's first design for the Pennock house in Norfolk, within a few weeks after his arrival in the US, were brought to their finest expression in the Van Ness house, his residential masterpiece in Washington 20 years later. As Hamlin observes, not only "was he a cultivated gentleman bringing to the new country the riches of an unusual background; also in less than a month he became an American architect, an American engineer."

Within five years after his arrival in the US, Latrobe had reached the top of his profession with his appointment by President Thomas Jefferson as surveyor of the public buildings, a position in which he completed the design for the Capitol at Washington and the White House, in each case having to make good the technical ignorance of such amateur architect predecessors as Thornton and Hoban. But first he proved his abilities with engineering and architectural projects in Virginia, and the two great landmarks of his early career—the Bank of Pennsylvania, and the Philadelphia water supply system.

The full and authoritative treatment Hamlin gives each of these major building projects reclaims them from the historical ambiguity into which they had, for the most part, sunk. He shows what an advance they represented over the regional aspirations toward a national architecture which in New England were being advanced by Bulfinch, McIntire and Asher Benjamin; the amateur neoclassicism of Jefferson and his followers in the National Capital area; or the vernacular architecture of the carpenters' companies and local builders everywhere. Though Latrobe might have been credited with the establishment

continued on p. 182

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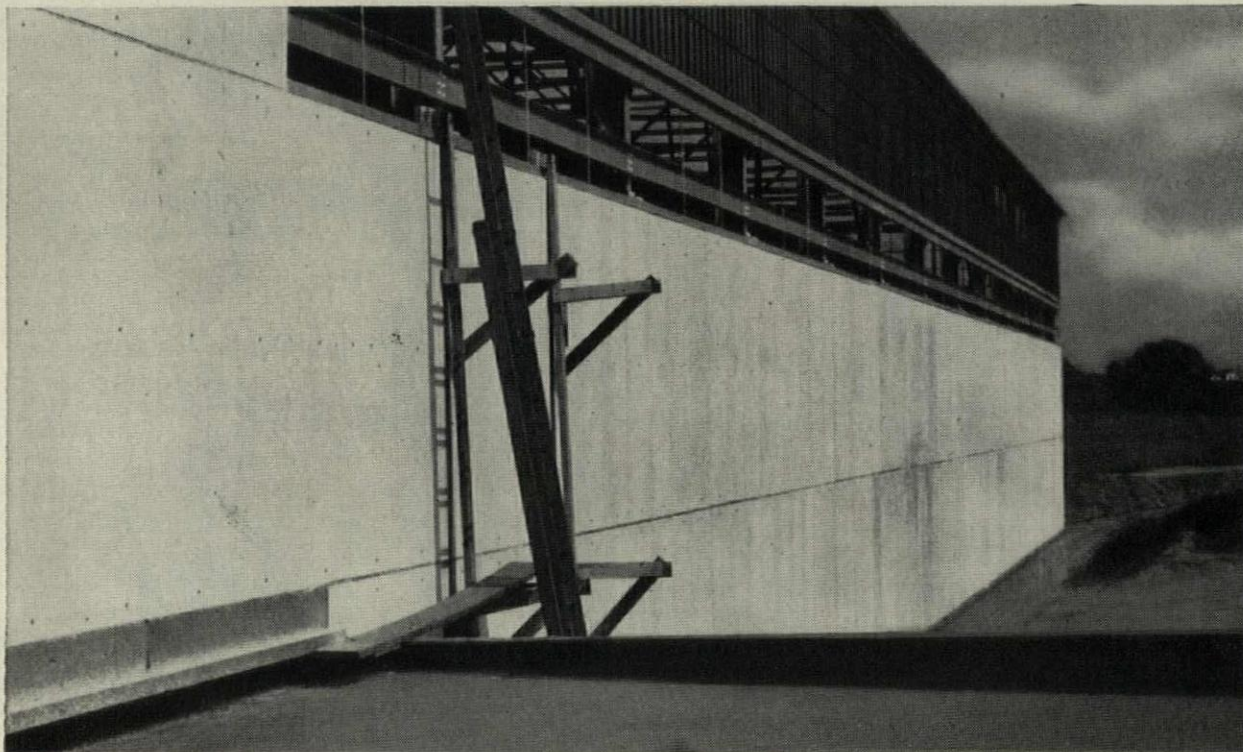
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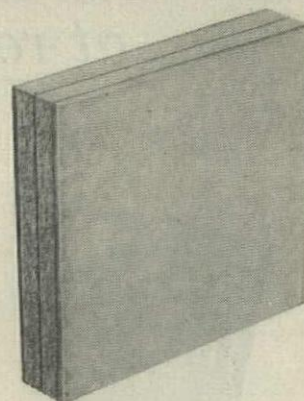
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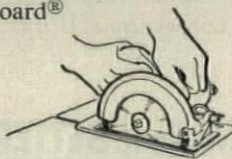
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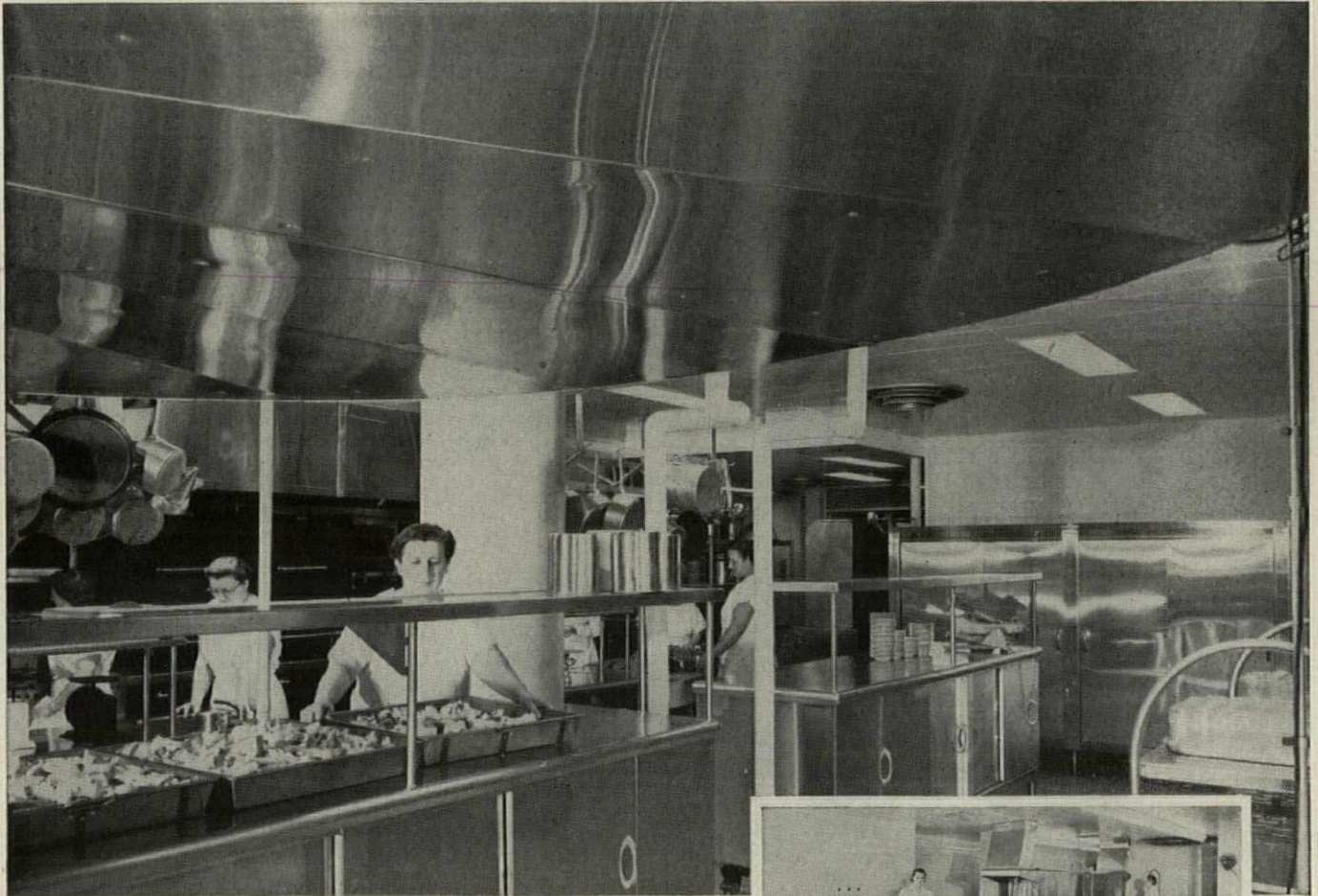


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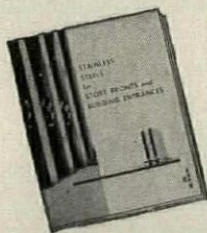
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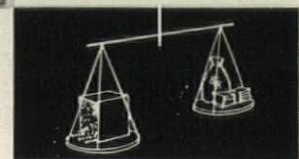
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BOOKS *cont'd.*

of a federal style of architecture, Hamlin chooses to regard his major accomplishment as the creation of an American architectural profession and his training of Mills, Strickland, and many of its leaders; Latrobe's other major accomplishment was the technical advancement of construction which followed the liberation of building from the ignorance and handbook dogmatism of carpenters and masons. The basic issue of Hamlin's biography of Latrobe

thus becomes the story of how this architect-engineer faced the carpenters of Virginia with their little handbooks of Adam details and their narrow conception of how men should live, and how he won out with his larger scale, his more appropriate plans, his more imaginative construction. It is the story of how he faced the organized building crafts of Philadelphia, with their brick traditions and their post-and-lintel construction, and left his mark with

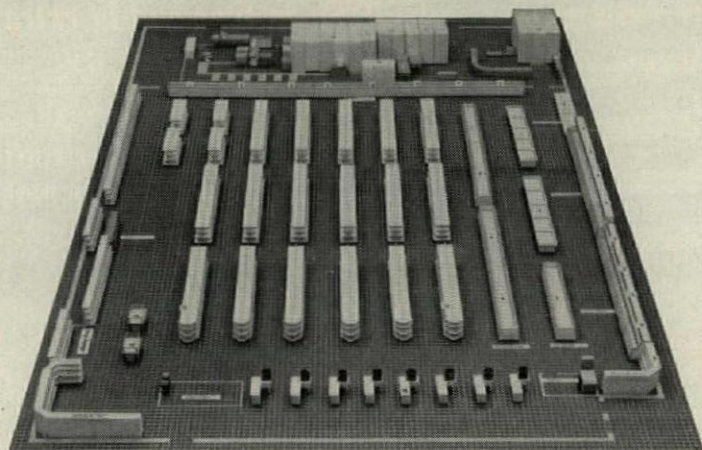
the all-marble Bank of Pennsylvania. Building achievements no less important were Latrobe's masonry vaults (traced in great detail by Hamlin) and their use as controlling elements in design. This was the key to the Baltimore Cathedral, the Exchange, many parts of the US Capitol, the Richmond Penitentiary and many of his other buildings. His contributions were also great in the development of quarries, building materials, and machine-powered, mass-production building methods; and he was not inferior to Jefferson in his invention of mechanical gadgets and services for the home, and the exploration of such novel architectural decorations as the corn and tobacco capitals he used in Washington. As Hamlin shows, Latrobe's contributions to the growing American profession of engineering were hardly less decisive, fertilizing with science, our already marked gifts for intuitive design and improvisation and developing modes of construction designed for permanence and low maintenance. Many were the conflicts between these newer ideas and the established way, and bitter were the struggles in which Latrobe found himself embroiled. There was "a general suspicion of theory as theory, a fundamental doubt of the value of professional advice. The Americans had accomplished so much through their improvising that they were skeptical of any other approach," Hamlin comments. In winning out against these attitudes, Latrobe left the building art in the US in his debt—perhaps more than to any other single individual.

But this is, after all, a biography, not an argument. And it is in handling the more intimate aspects of his subject that Hamlin has succeeded to the point of making this book, of all his books, his masterpiece. His portrait of the immigrant, eager to succeed in the American way, a backer of lost causes, a sucker and easy mark, an art lover, an egghead and associate of philosophers and scientists, hot-headed and impetuous, a poet and journalist in words as in sketches, a man of many lovable characteristics, deep personal tragedies, honorable and honest aspirations, founder of a line of distinguished descendants, belongs in the gallery with Henry Adams' biography of Gallatin. Were it not for this vivid portrayal, indeed, we would scarcely be able to appreciate the significance of this struggle in an America in which architecture was still a luxury, and any building venture a matter of guesswork and chance, in a day when draftsmen were lacking, contractors unable to read plans, craftsmen unobtainable to execute anything but the simplest conventional work. Those who take pride in what building is today will find here a compelling reminder of the road we have traveled, and will lay down this book with a new respect for a great designer now restored to his rightful place in the pantheon of American architecture.

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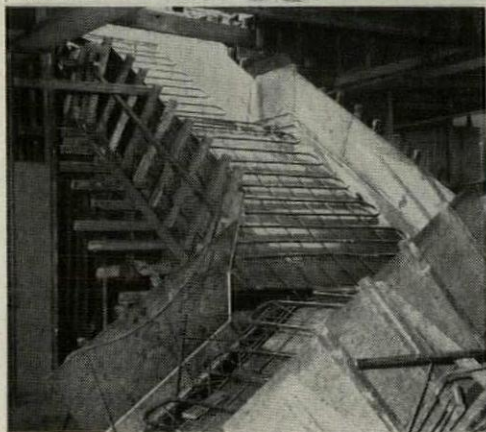
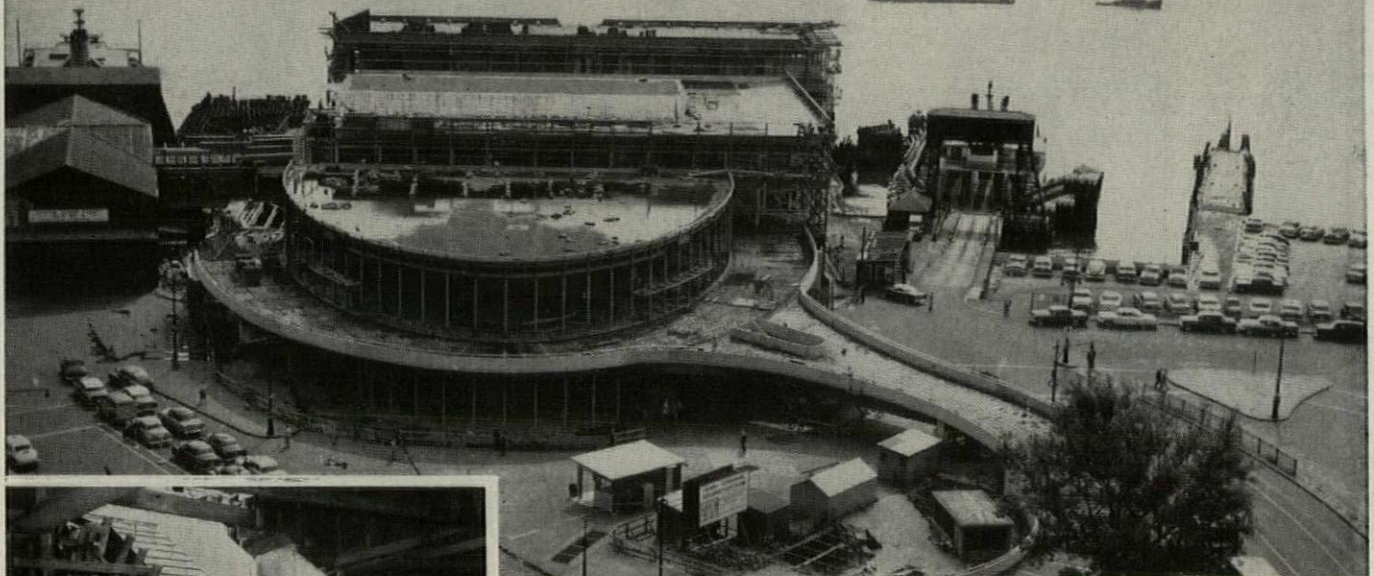
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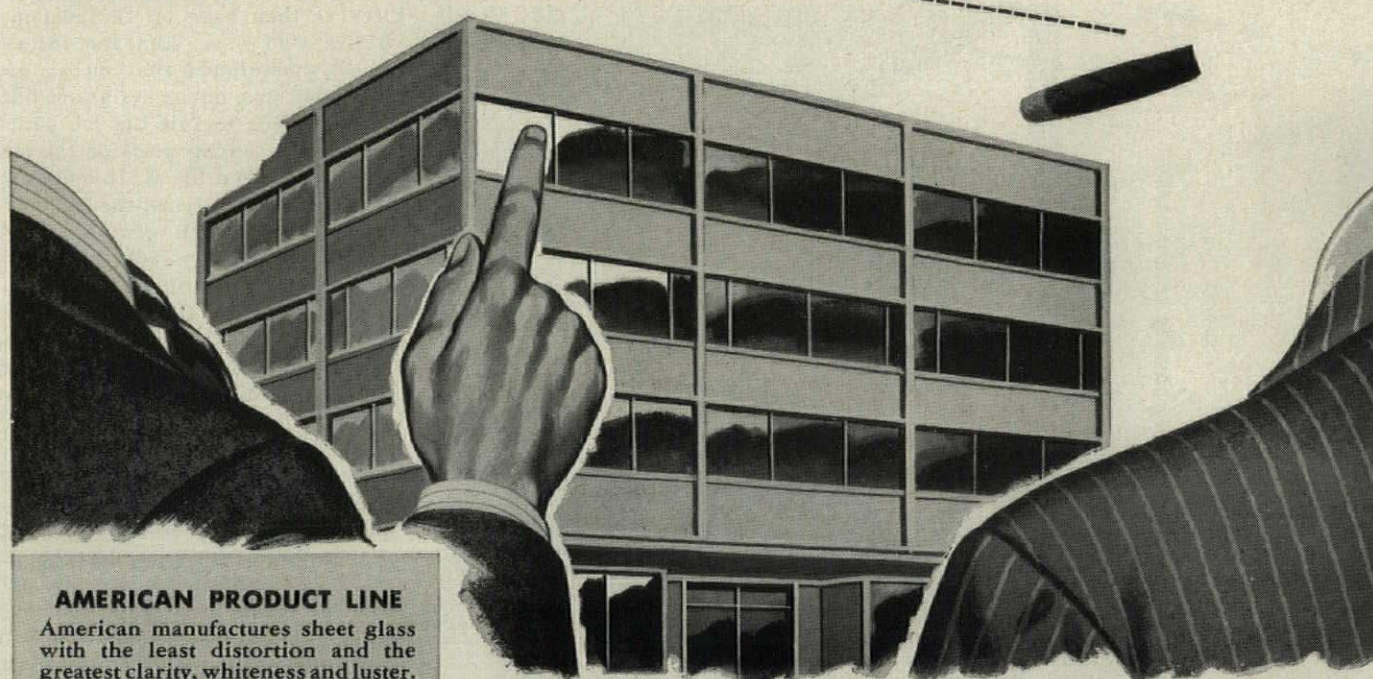


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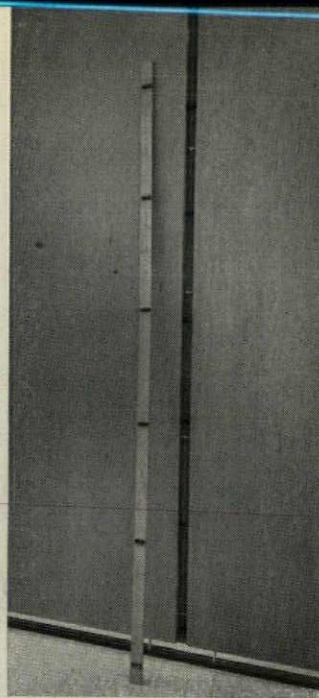
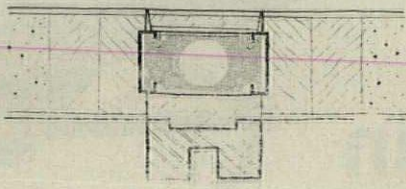
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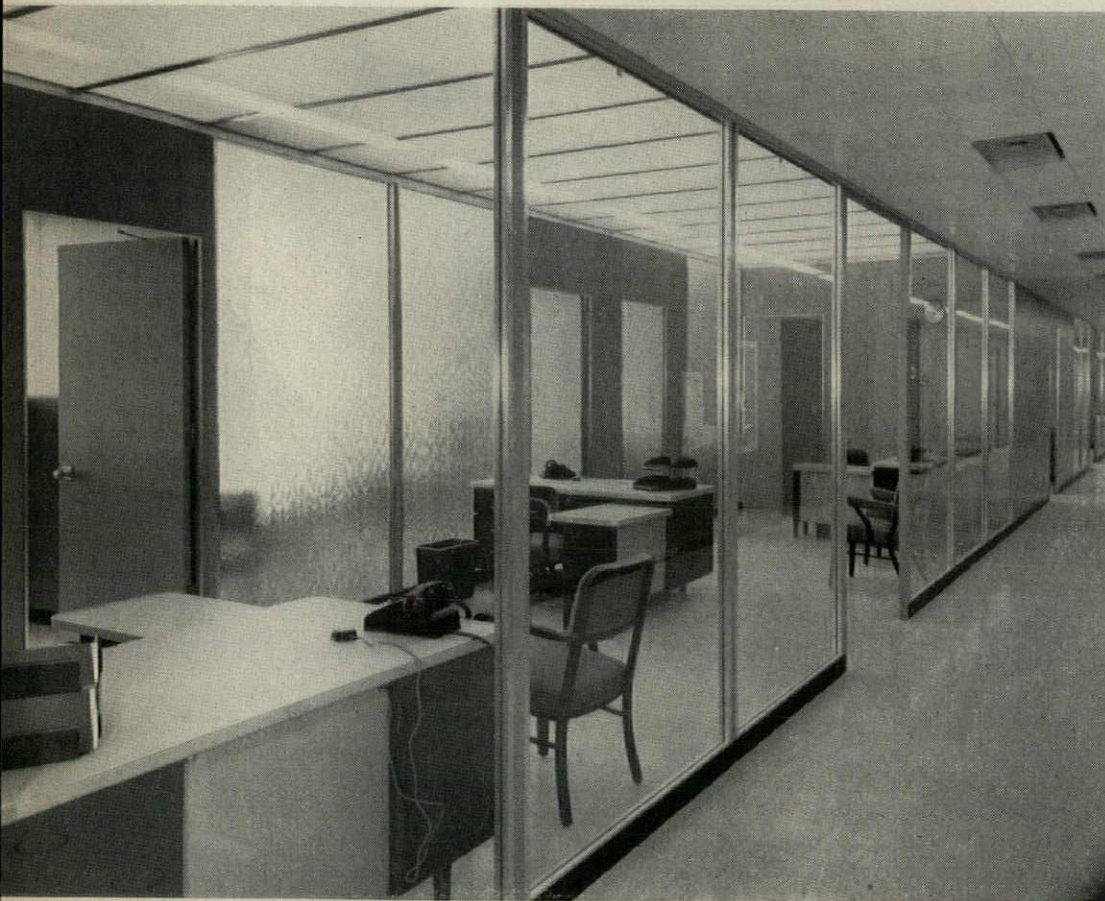
PRODUCTS

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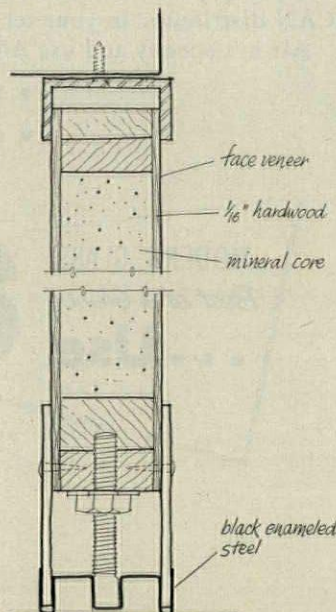
Client Ford Motor Co.'s request for substantial looking offices and Architect Skidmore, Owings & Merrill's penchant for factory fabricated components were both resolved in these comely partitions by US Plywood. Meticulously redetailed by SOM to fit the building's 4'-8" module and the firm's own brand of precise styling, the mineral-core walls are now a part of the *Weldwood* family and they have made as important an impression on the manufacturer as they have on the customer and visitors who have seen the installation: US Plywood found that on an order of reasonable size, minor design modifications could be made to suit the job without increasing the selling price of the standard line—about \$30 a lin. ft. In addition to the dimensional alterations, the changes called for by SOM which give the *Weldwood* partitions (AF, Jan. '56) their new sleekness included substitution of a black *Micarta* strip for the molded wood baseboard, an aluminum header instead of wood, and extruded aluminum sash to hold the glass. Because all wiring on the Ford job is in the floor, the width of the metal channels between panels (which ordinarily accommodate BX) was cut to a slim 1 3/4" strip. Basic *Weldwood* partition principles of construction and assembly were used, including the incombustible mineral core, 1/16" hardwood under ply, and slip-in metal connectors. Only change in internal structure: two 2'-4" core panels were doweled together to make up the 4'-8" x 8' and 9' heights and under ply and continuous Korina face veneers were applied over the joined panel. Weighing about 4 lb. per sq. ft., the panels can be removed and shifted when necessary. (The day after the Ford offices opened, two offices were changed on the second floor.)
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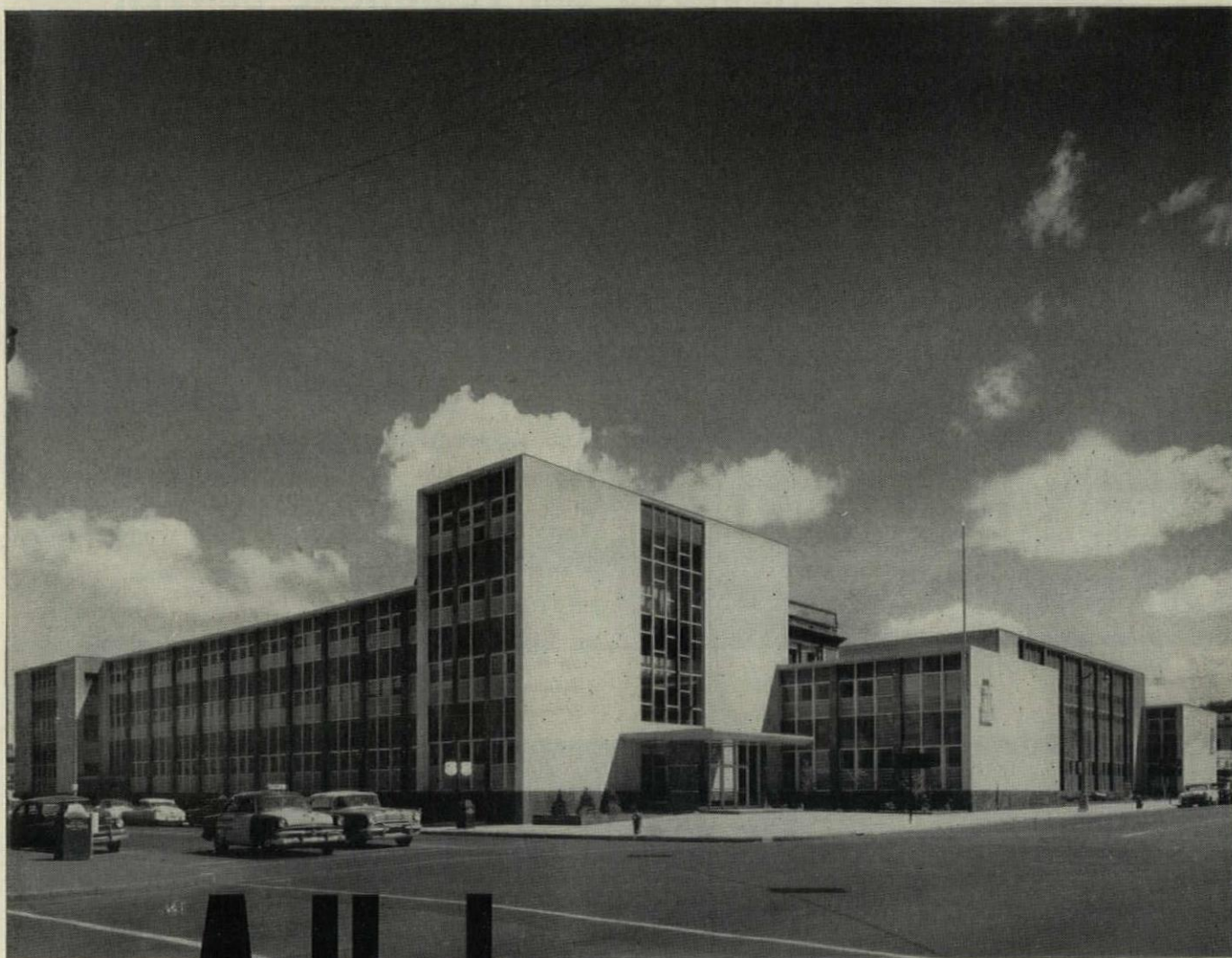
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continued on p. 190



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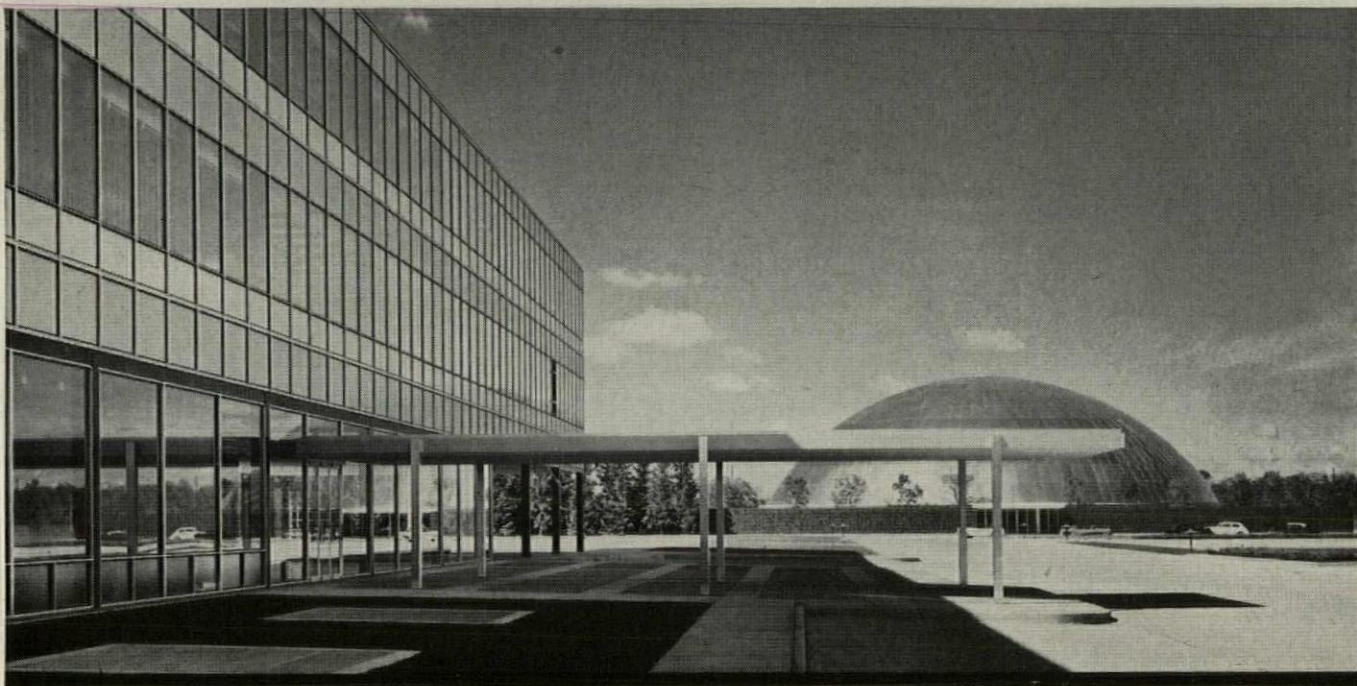
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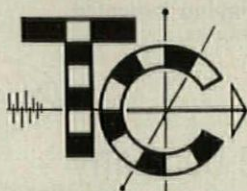
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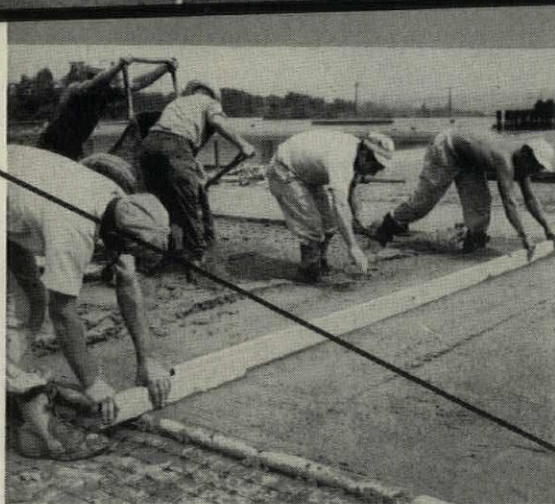
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Moss Side Elementary School



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Both schools constructed under the Municipal Authority of the School District of Monroeville, Allegheny Co., Pennsylvania.

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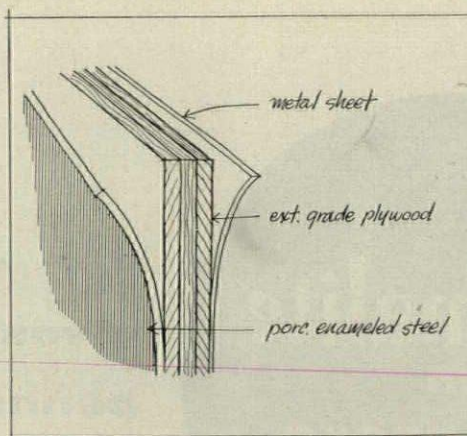
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to size with power saws on the job. The semi-gloss enamel skin is fadeproof and easily wiped clean. Cost for any of the eleven standard colors, including white and black, ranges from about \$1 to \$1.25 per sq. ft. A companion line of extruded aluminum moldings designed to take various calking materials run about 25¢ per lin. ft.

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(3) **INDUSTRIAL FLOOR** laid down in sheets over concrete or steel

Resilient, rugged *Nu Flor* is ready for traffic as soon as it is installed. The ¼"-thick asphalt and fiber reinforced felt composition comes in 2' x 3' black sheets which are laid side by side in a cement bed directly over new or worn masonry, wood or metal floors. The inexpensive surfacing can withstand heavy industrial loads including hand or power trucks. *Nu Flor* is springy underfoot, chip and crack resistant, and helps muffle wheel and heel noises. It can be cut and shaped with a linoleum knife to fit around machinery, pipes and wall projections. The sheets



come eight in a pack—enough to cover 48 sq. ft.—for \$18.25 FOB, or about 36¢ per sq. ft. Edge strips are available, but the sections can be used without them; the material feather edges itself under constant traffic.

Manufacturer: The Monroe Co., Inc.

How to minimize the risk of **FIRE S P R E A D** with **Swartwout FIRE VALVE®**



If you must have a fire — and we sincerely hope you never do — damage will be least if fire fighters can limit *sidewise travel*. Authorities claim a fire can be held to a smaller area if heat and flames are released upward, through the roof. Fire Valve was designed as an "escape" unit.

Excessive heat melts fusible links at the Fire Valve damper, causing two large dampers to drop open *instantly*. The open valve provides 46 square feet of free area for unobstructed vertical exhaust flow, protected from effects of wind currents by the side baffles. Smoke rises, instead of hiding the flame source. Fire fighting can be augmented from the roof. The Swartwout Fire Valve is a neat low unit which may be opened manually for extra ventilation in good weather. Learn more about this valuable aid for limiting fire spread — write for Bulletin FV-O.



The Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio

Swartwout

ROOF VENTILATORS AND VENTILATING LOUVERS

AUTRONIC PROCESS CONTROL EQUIPMENT



(4) **PORTABLE GUN** can spray walls with acoustic plaster or stucco

Any material limp enough to flow through a hopper can be handled by the bantam size *HG Plaster Master*. Especially suited for spraying acoustical plaster, sand finish and exterior stucco, the \$339 machine uses a 2 hp gasoline-powered compressor weighing 60 lb., a ¼" air hose, a 1/9 cu.

continued on p. 196



THE DOOR THAT MATCHES THE FLOOR!

BILCO FLUSH FLOOR DOORS BLEND WITH SURROUNDING FLOOR MATERIAL

For use in rooms, corridors or any place where surrounding floor area should be matched. Extruded aluminum moulding strips around leaf and frame hold floor covering of 1/8" or 3/16" thickness. Built-in lift springs give easy one-hand operation. Seven standard sizes in single and double leaf construction. Can be made in any practical size for special needs.

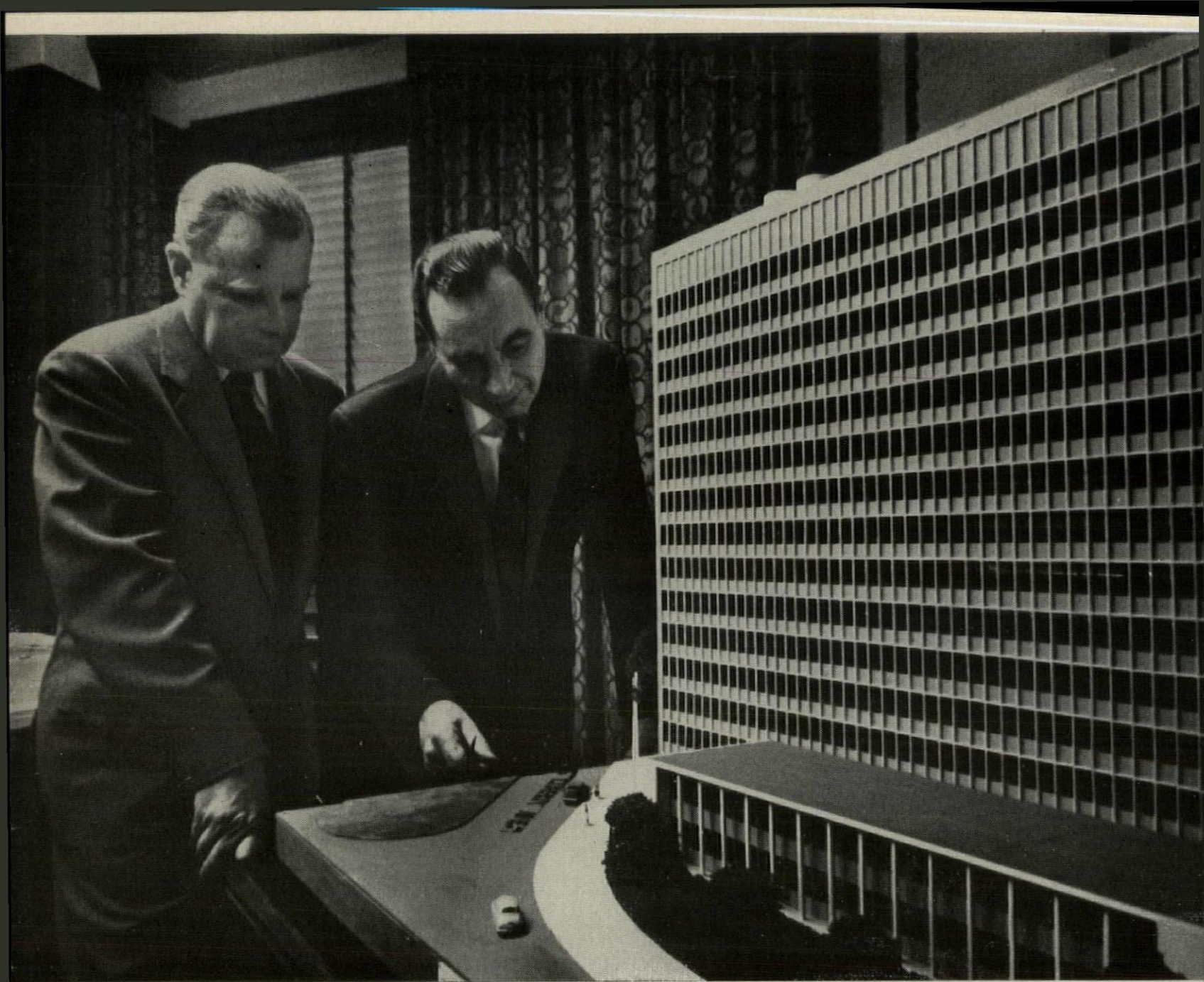
SEE OUR CATALOG IN SWEETS
OR WRITE FOR CATALOG A.I.A. FILE 12P

THE BILCO COMPANY
DEPT. 166A NEW HAVEN, CONN.

only the best is stamped



*oldest and largest manufacturers
of doors for special services*



"This building will never grow old ...electrically!"

Livingston Altenhof Philip B. Bown

Altenhof & Bown, Registered Architects

Architects Altenhof and Bown neatly summarized the big reason a National Electric Header Duct raceway system was installed in Pittsburgh's new ultra-modern State Office building... "to provide the most complete electrical flexibility."

The Header Duct raceway system permits easy access to the building's Fenestra cellular steel floor. The result: a combined electrical raceway system that provides for electrical, telephone and intercommunication outlets wherever and whenever they are needed.

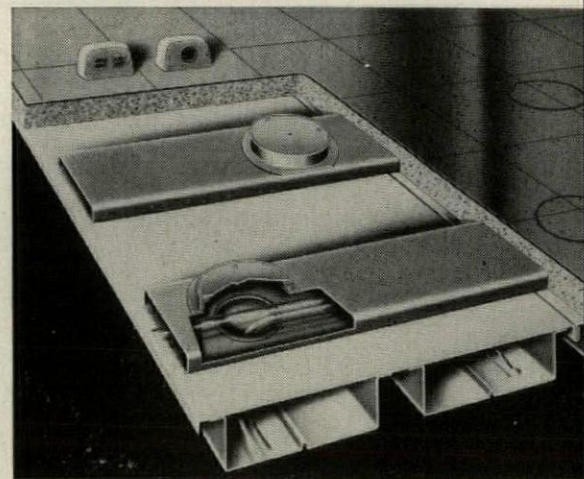
Bright, new aluminum service fittings, less than three inches high, will bring power or telephone service directly to desk locations. Future office

layout changes will be made easily at low cost due to the completeness of electrical availability. This building will never grow old... electrically.

Yes, clients get more for their money when plans for cellular steel floor construction include electrification by National Electric Header Duct. Why not write for complete information on Header Duct so you will be familiar with all its advantages.

Listed by Underwriters' Laboratories, Inc.

Owners: General State Authority
John N. Forker, Executive Director
Architects: Altenhof and Bown
Electrical Engineer: Carl J. Long
General Contractor: Navarro Corporation
Electrical Contractor: E. C. Ernst, Inc.



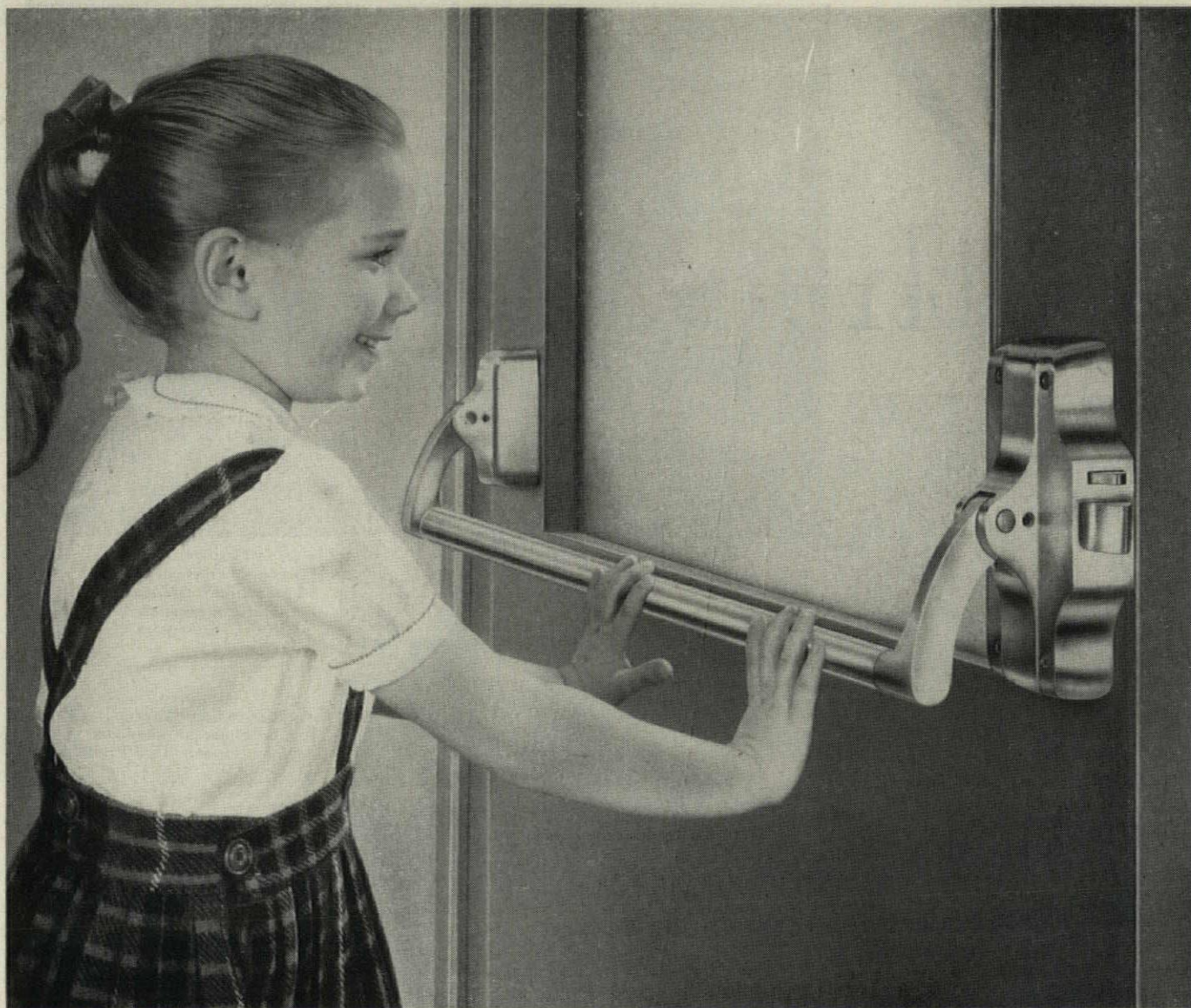
Header Duct with Fenestra Electrified floor

National Electric Products

PITTSBURGH, PA.

3 Plants • 10 Warehouses • 36 Sales Offices





She'll be safe with Sargent

...this exit device cannot jam!

After all is said and done...

the one big reason you specify exit devices is *safety*.

And when human lives are at stake, Sargent Exit Devices release doors at the slightest touch of a child's hand. Instantly and easily!

You know that just a $\frac{1}{4}$ " movement of the bar makes the latch free floating. You know that this same easy, roll-fold action works in reverse to *close* doors smoothly, too.

You've also probably heard that stainless steel is used for crossbar bearings, latch bolt pins and springs to give your clients *lasting* protection. Another reason why *you'll* have peace of mind.

Our up-to-the-minute catalogue will show you a wide variety of designs and complete accessories. Send for a copy today.

Sargent & Company,
New Haven 9,
Connecticut,
Dept. 8G.



Sargent Builders' Hardware

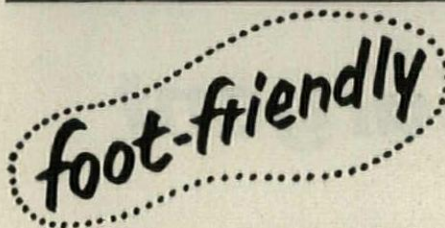
accent
on
youth



Student Lounge area,
Orange Coast College,
Costa Mesa, California.
Robert E. Alexander,
Architect, Los Angeles.

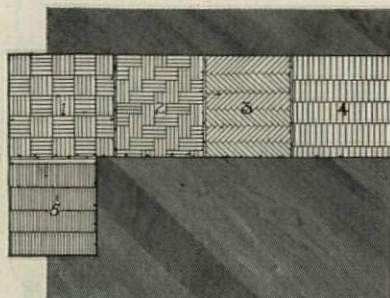


Dining area,
Orange Coast College
Both areas floored with block-
patterned Northern Hard Maple.



NORTHERN HARD MAPLE

In today's concept of the ideal educational environment, cheerful brightness, *for sound reasons*, is swiftly supplanting the somber austerity of yesteryear's scholarly surroundings. Happily, architect and schoolman find, ready-to-hand, in abundance, Nature's most nearly perfect flooring material to help advance this concept... Northern Hard Maple, **MFMA**-certified. Its rich, bright lustre leaps into life under routine maintenance. It fights scuffs, scars and dents for generations. It adds "muscle" to the structure. It's versatile—meets every school area use admirably, sports and social, classroom and administrative. It is far from costly—cheap, in fact, when endurance and low upkeep are considered. Trust **MFMA** Northern Hard Maple, America's *forever-modern* flooring. For technical data SEE SWEET'S (Arch. 13j-MA). Write for latest (1956) listing of **MFMA**-approved floor finishing products and methods.



MFMA-certified Northern Hard Maple is available in blocks and modern patterned designs as well as the more conventional strip form. Readily laid in mastic, over concrete or softwood sub-flooring.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 564, Pure Oil Building, 35 East Wacker Drive, Chicago 1, Illinois

FLOOR WITH NORTHERN HARD MAPLE, BEECH AND BIRCH



A new high in **high velocity for hospitals**

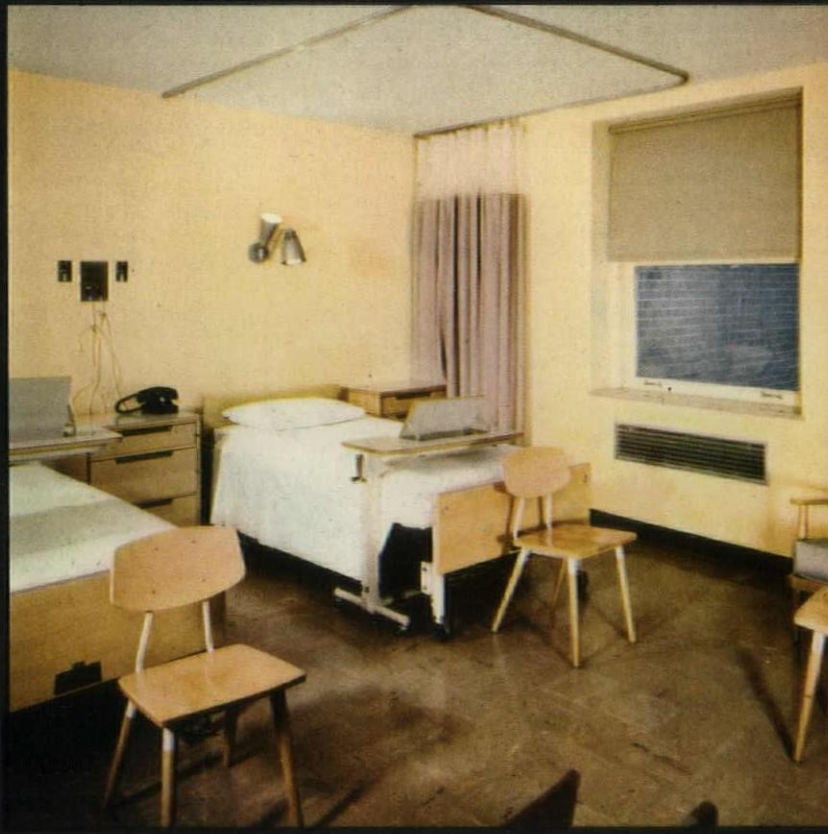
New wing of Abington
Memorial Hospital, Abington, Pa.

Architects & Engineers:
Jack Steele Company, Philadelphia, Pa.
Schmidt, Garden & Erikson, Chicago, Ill.

Air Conditioning Contractors:
Huffman-Wolfe Company,
Philadelphia, Pa.
Paul A. Norair, Washington, D. C.

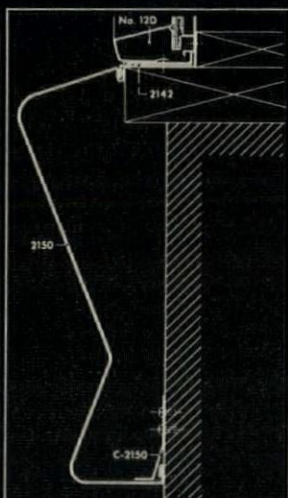
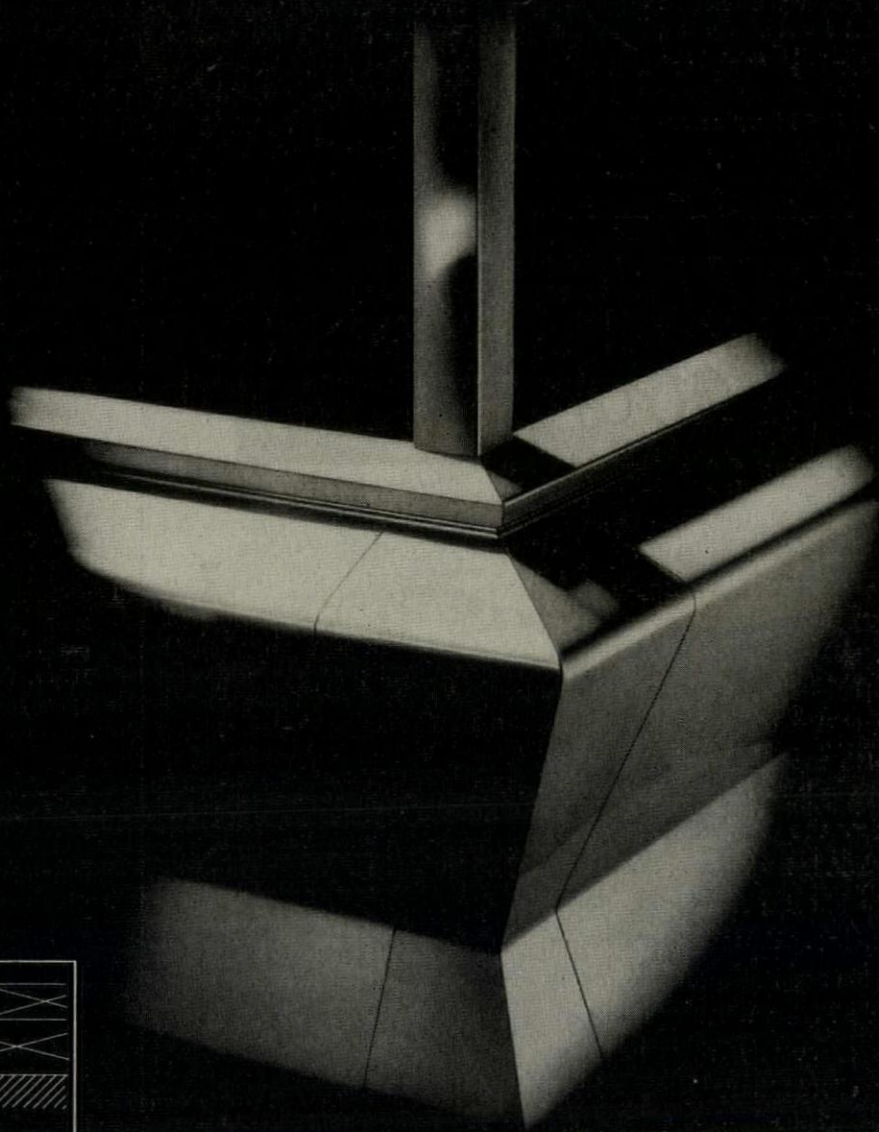
▲ To provide draftless air diffusion in the delivery room, All-Air High Velocity units are placed under the window. High velocity sound attenuation chambers with square diffusers are mounted in the ceiling. *Turn page for detail.*

▼ In the nursery for premature infants, sound attenuation chambers with square air diffusers are mounted in the ceiling. *Turn page for detail.*



▲ All-Air High Velocity under-the-window units are used in all private and semi-private patients' rooms. *Turn page for detail.*

Look at it from this angle



In fact, any angle. This moulding, like all Pittco Metal, has a pleasing way of blending with surroundings, of expressing light and shadow, serving as a sill, an awning fascia or as a decorative band. For complete details, see your Pittco® Store Front Metal Representative.



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

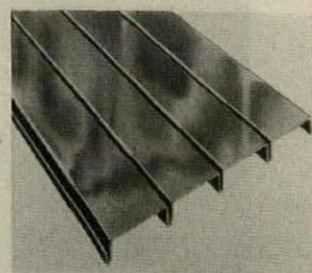
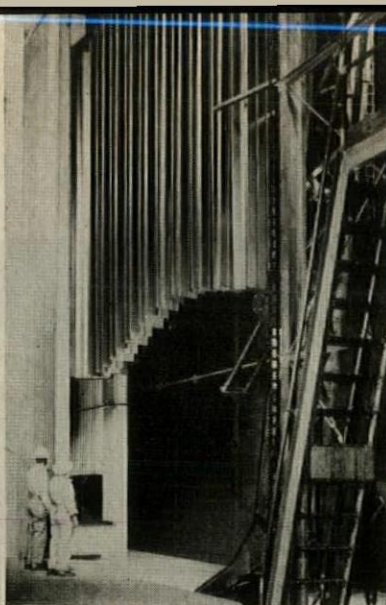
PITTSBURGH PLATE GLASS COMPANY
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

PRODUCTS *cont'd.*

For more data use coupon, p. 218

ft. hopper made of seamless aluminum and a hand gun. Two snap-on covers come with the gun for patching work and ceiling applications. No cover is used for wall applications. The hand gun which can be plugged into larger model *Plaster Masters* can be purchased separately. It costs \$133 with hose and covers.

Manufacturer: Santa Anita Manufacturing Corp.



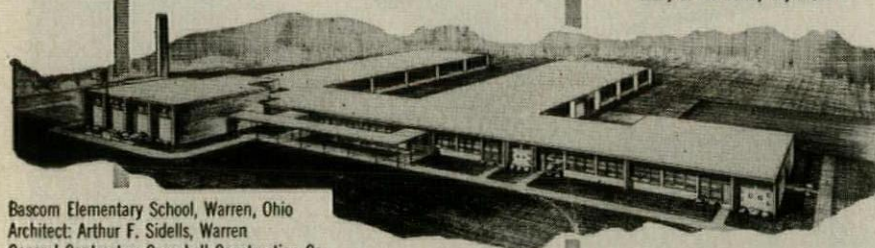
(5) ROOF DECKING has tough baked epoxy coat over bonderized base

To resist the scrapes and scuffs that mar roof deck finishes during shipping and handling, Inland Steel is applying a hard epoxy resin to its steel deck. Resilient as well as tough, the electrically baked finish is the final step of a ten-part process which keeps surface breaks to a minimum. Where any minor damage does take place, the deck's bonderized undercoat prevents corrosion from spreading or undermining the enamel. The new prime coat is available on *Milcor* type A deck (pictured top right) as well as *Milcor* closed rib type B and wide ribbed type C deck. Type C can carry normal roof loads over spans up to 20'. In-place costs for the bonderized and epoxy coated decking run about 28¢ per sq. ft. for the 22-ga. up to 36¢ for 18-ga.

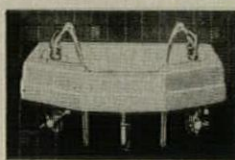
Manufacturer: Inland Steel Products Co.

Schools!

demand them!

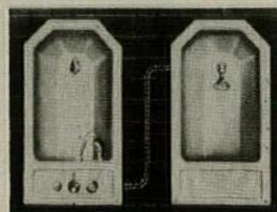


Bascom Elementary School, Warren, Ohio
Architect: Arthur F. Sidells, Warren
General Contractor: Campbell Construction Co.

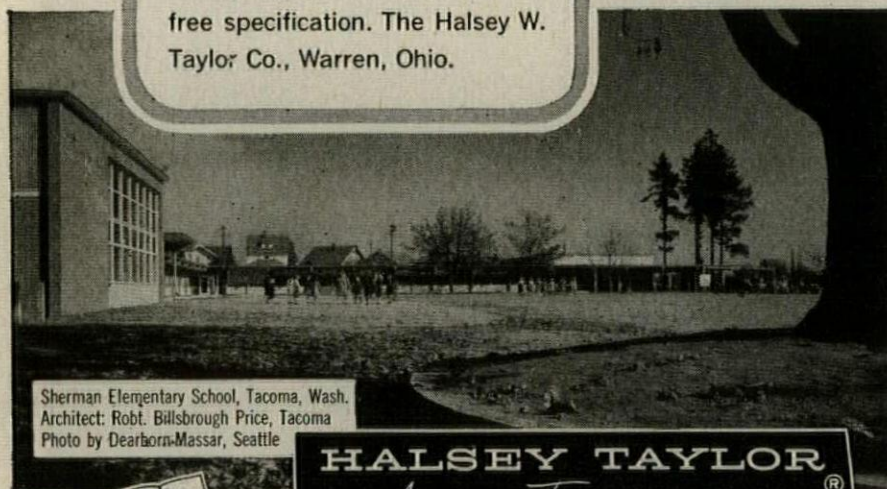


* Two-part battery type, one of many in the Halsey Taylor line

All over the country, school construction is flourishing, due to the acute shortage of educational facilities. Usually wherever schools are built, the byword is Halsey Taylor. Whether it's fountains or coolers, architects and their clients have learned that Halsey Taylor is a safe, trouble-free specification. The Halsey W. Taylor Co., Warren, Ohio.



* Recessed vitreous china combination, consisting of wall fountain and modern cuspidor type, popular with schools



Sherman Elementary School, Tacoma, Wash.
Architect: Robt. Billsbrough Price, Tacoma
Photo by Dearborn-Massar, Seattle



HALSEY TAYLOR®
America's Favorite
Fountains

A-63



(6) WASHER-DRIER takes on 40 lb. of laundry in one automatic cycle

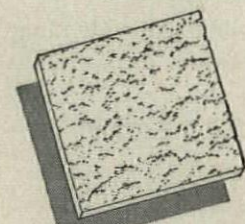
Developed for use in hotels, motels, clubs and institutions, the *Triomat* automatically washes, rinses and bone-dries 25 lb. of dry weight laundry in a single 1 hour cycle—quadruple the capacity of most home size washers. It will carry a 40-lb. load through to damp-dry for ironing. The 6'-3" tumble action machine needs an attendant only to load it up, turn it on and

continued on p. 202

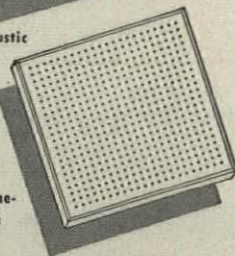


The Johns-Manville Permacoustic ceiling in the Penn Fruit Co. supermarket in Cynwood, Pa., is handsome, acoustically functional and inexpensive.

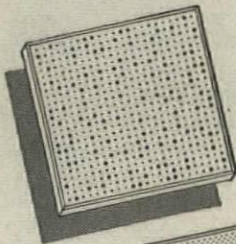
Sales soar when Johns-Manville Acoustical Materials Quiet busy stores



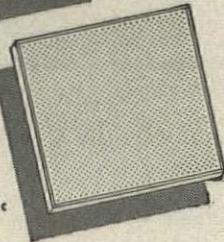
Permacoustic



Fibretone-Uniform Drilled



Fibretone-Variety Drilled



Sanacoustic

Business and industry depend on modern materials to achieve maximum efficiency. That's why practically all new building and modernization specifications include acoustical ceilings to reduce disturbing noise.

Johns-Manville offers a complete choice of highly efficient sound absorbing materials for every acoustical need.

- **J-M Permacoustic® Units**—combine maximum acoustical efficiency with architectural beauty. Has attractive fissured surface. Made of mineral wool, Permacoustic meets all building code fire-safety requirements.
- **J-M Fibretone® Units**—provide high acoustical efficiency at modest cost. Hundreds of small holes, drilled in a Uniform or Variety pattern, act as "noise

traps." Fibretone has a white paint finish. Available with flame-resistant finish.

- **J-M Sanacoustic® Units**—perforated metal panels backed with a fireproof, highly sound-absorbent element. Noncombustible and sanitary. The white baked-enamel finish is easy to keep clean, and may be repainted.
- **J-M Transite® Acoustical Panels**—perforated asbestos-cement facings backed with a mineral wool sound absorbing element. Suitable in areas with high humidity (dishwashing rooms, kitchens, swimming pools, etc.).

Send for your free copy of the new brochure entitled "Sound Control." Write Johns-Manville, Box 158, Department AF, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.



See "MEET THE PRESS" on NBC-TV, sponsored alternate Sundays by Johns-Manville

Johns-Manville

45 years of leadership in the manufacture of acoustical materials

Cut costs

—with multi-use Milcor Celluflor instead of wet-mass construction

owner

Pennsylvania Tower Bldg. Corp.
Philadelphia

architect

Vincent G. Kling
Philadelphia

general contractor

McCloskey & Company
Philadelphia

structural engineer

Thomas J. McCormick
Philadelphia

erector

F. E. Smith, Inc.
Philadelphia

electrical contractor

Harry F. Ortlip Co.
Philadelphia

Because it serves both as a structural element and as a means for electrification, Milcor Celluflor was specified for use in the Transportation Center now under construction on the "Chinese Wall" site of the old Broad Street Station in Philadelphia's new Penn Center Development.

Although the building was originally designed for bar-joint and reinforced-concrete construction, plans were changed when cost comparisons showed that a "blend" of Milcor Celluflor and Floor Sections would do two important jobs in one installation — and for less money. The Celluflor "blend" design was specified for 15 of the building's 18 floors.

Other costs dropped, too. The Celluflor and Floor Sections were erected on beams set 1½ inches below the girder elevations, reducing the height of the building 2½ feet — a substantial saving in building materials.

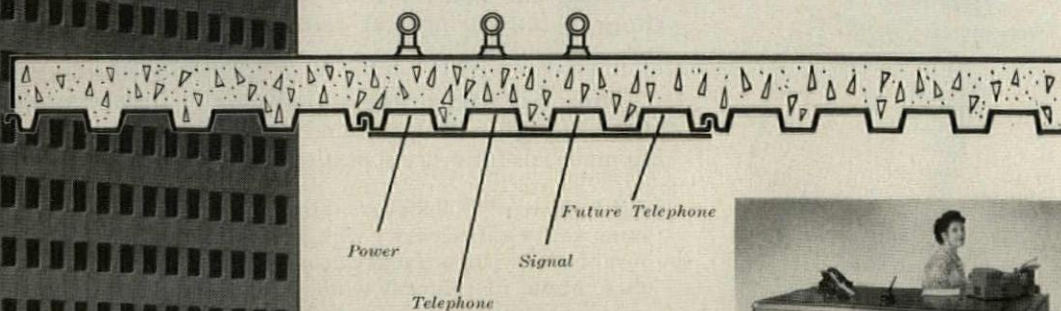
These factors also influenced the change:

- a. **Speed of erection.** Milcor Celluflor goes up fast, provides working and storage areas for all trades, accelerates the entire job.
- b. **More electrification.** The grouping of four cells on 6-ft. centers is a Celluflor exclusive not available in any standard underfloor duct system used with reinforced concrete. This means greater electrical capacity, wider latitude for changes in office layouts.
- c. **Low maintenance costs.** Simplicity and economy of changes in electrical outlets is attractive to owners and tenants alike.

This Celluflor "blend" idea can be applied to a wide range of conditions. Call on us. Write for Catalog 270.

MILCOR® Celluflor

Cross-section of Celluflor installation in
Transportation Center, Penn Center, Philadelphia, Pennsylvania



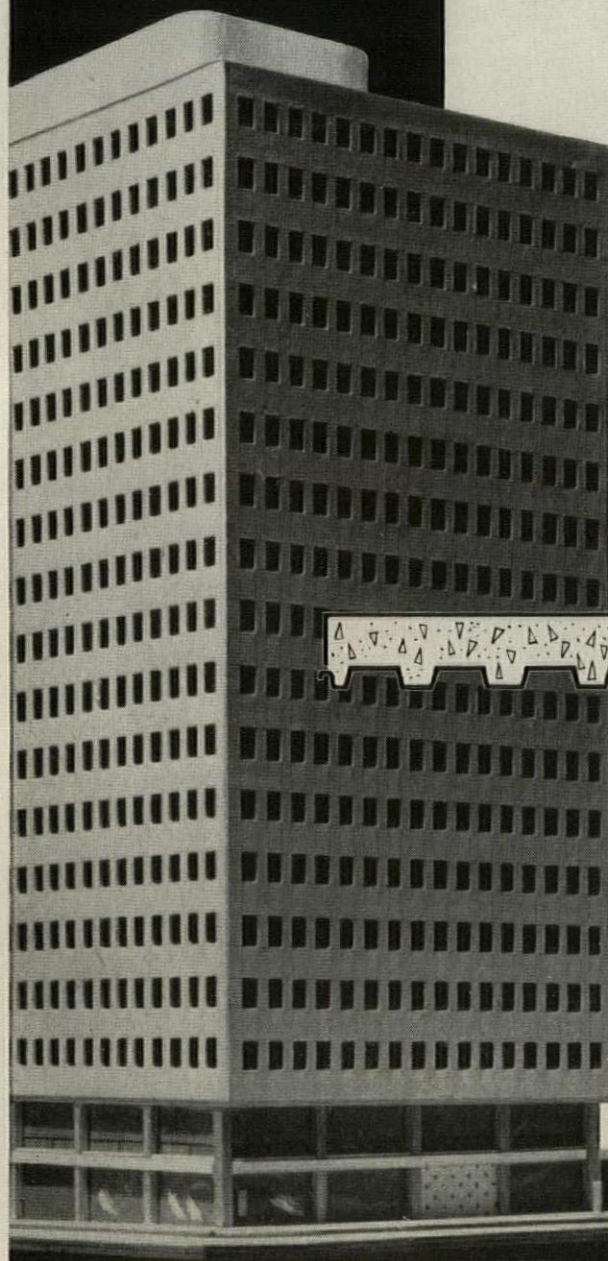
Milcor Celluflor provides variable capacities to handle any type of electrical need. Cells can be spaced on 6-inch centers to permit the installation of service outlets at virtually any point on the floor.



INLAND STEEL PRODUCTS COMPANY

DEPT. G, 4031 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

BALTIMORE • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND
DALLAS • DENVER • DETROIT • KANSAS CITY • LOS ANGELES
MILWAUKEE • MINNEAPOLIS • NEW YORK • ST. LOUIS. M-180



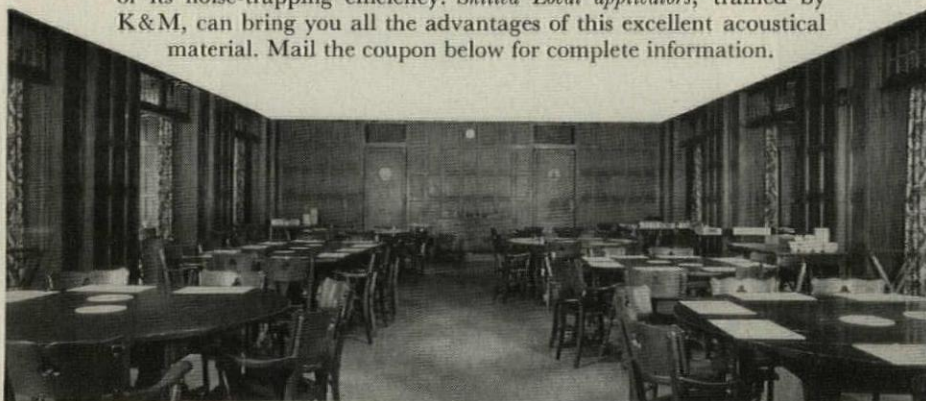


Sprayed "Limpet" Asbestos on the ceiling of the main dining room of the Engineers' Club in Dayton, Ohio, provides a quiet atmosphere for dining. This job, applied over ten years ago, also affords thermal insulation, fire protection, and prevents condensation. *Architects:* Schenck & Williams, Dayton, Ohio. *Applicator:* Myron Cornish Company, Incorporated, Dayton, Ohio.

Keeps the ceiling design, gets rid of noise... Sprayed "Limpet"® Asbestos

SOUND CONDITIONING A CEILING that has many curves and recesses presents a problem for most acoustical materials. However, Sprayed "Limpet" Asbestos, while doing an excellent job in controlling sound, retains every design feature of a ceiling. The evenly textured, seamless blanket of asbestos fibers adheres to any clean ceiling surface, regardless of its shape or composition. It does a superior job in deadening sound waves and in preventing the passage of heat.

Sprayed on, "Limpet" Asbestos needs no nailing, clipping, cutting. Special furring strips or other mechanical fastening devices are not required. There's no need to mask or disturb plaster mouldings. The natural color of the finished job blends with most colorschemes—yet "Limpet" can be spray-painted if desired, with no impairment of its noise-trapping efficiency. *Skilled Local applicators*, trained by K&M, can bring you all the advantages of this excellent acoustical material. Mail the coupon below for complete information.



KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA



KEASBEY & MATTISON COMPANY

Ambler, Pennsylvania

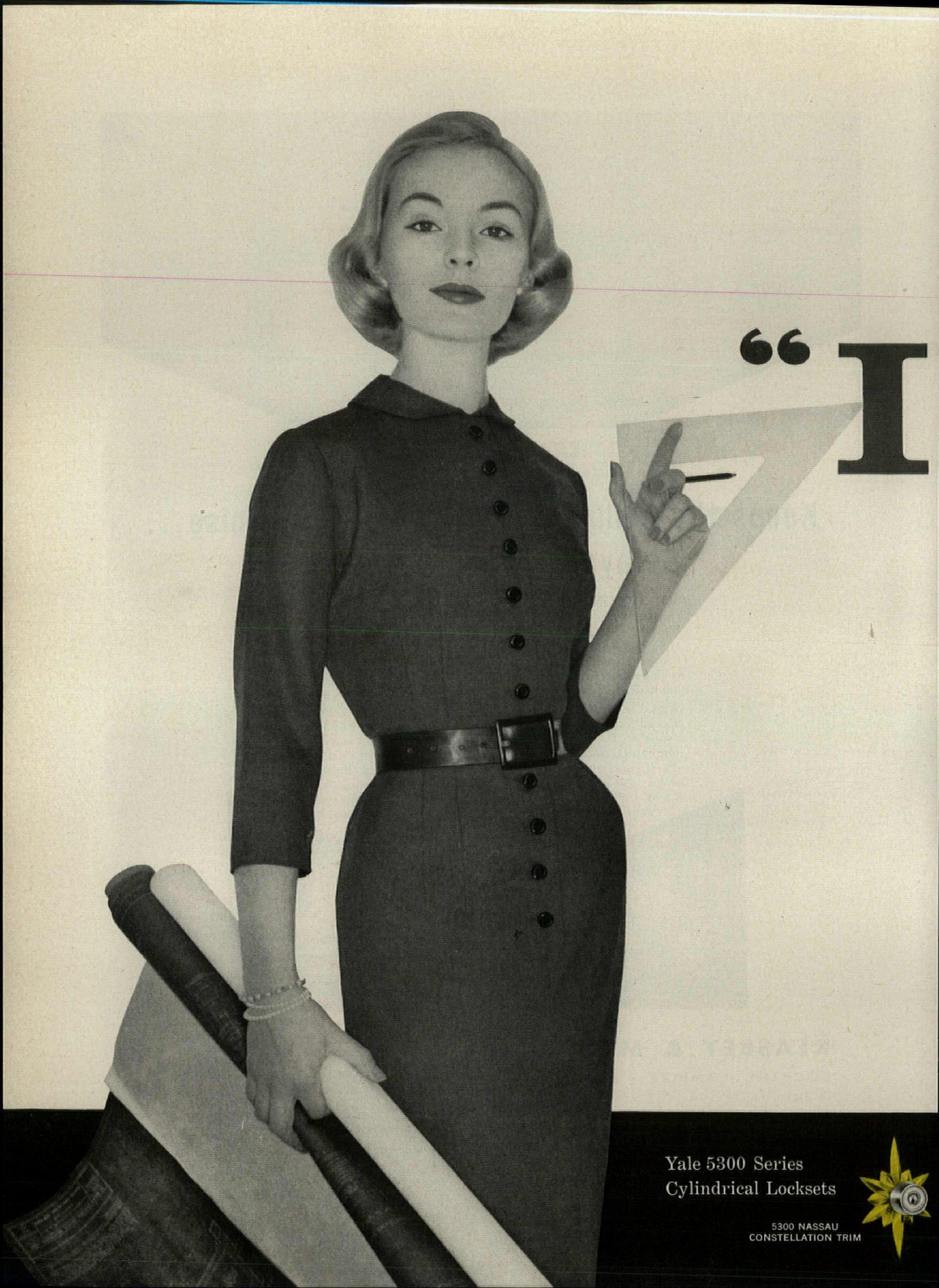
- ☐ Send literature about Sprayed "Limpet" Asbestos.
☐ Have applicator see me.

Name

Company

Address

City Zone State

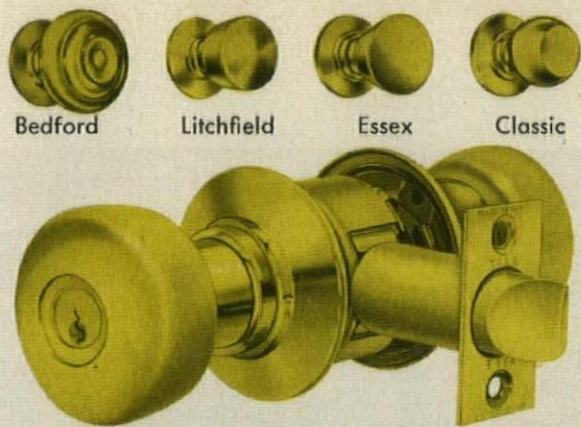


“I”

Yale 5300 Series
Cylindrical Locksets

5300 NASSAU
CONSTELLATION TRIM





Yale 5400 Series Cylindrical Lock

Pick Locks

for their good looks"

"I'm an architect's decorator —

I'm style conscious. I get paid for my good taste in picking the right fabric, right tile design, right furniture. Locks, though, have been pretty dull for a long time. So when YALE* introduced the beautiful New 5300 Series Locksets...with their marvelous new trim designs, I quickly made many selections for our clients. I just naturally felt a new glow of inspiration. And now, with the new 5400 Series just announced, why, we decorators love everything—style plus rugged construction for really long service. What's more, I *know* that in YALE Locksets there is the most advanced engineering, most precise construction and real ruggedness. All of which assure me that YALE beauty will last for years."

YALE HARDWARE STYLING DEPT.

If you have any special design problem, already existing or still on the drawing board, we will be happy to help you work it out. Write Yale Hardware Styling Dept., White Plains, N. Y.

YALE & TOWNE

The Yale & Towne Mfg. Co.,
Lock and Hardware Div., White Plains, N. Y.

*YALE REG. U. S. PAT. OFF.

5300 TROY
MADISON TRIM

5300 LITCHFIELD
WILLIAMSBURG TRIM

5300 NASSAU
NEWPORT TRIM

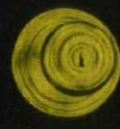
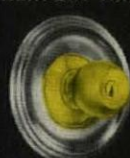
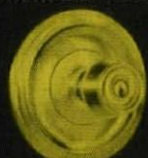
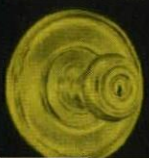
5300 LITCHFIELD
SAVOY TRIM

5300 LITCHFIELD
WILLIAMSBURG TRIM

5300 CLASSIC
NEWPORT TRIM

5300 TROY
NORFOLK TRIM

5300 CLASSIC
DALLAS TRIM





Architect: Welton Becket, F.A.I.A. & Associates
 General Contractor: Del E. Webb Construction Co.
 Air Conditioning Contractor: F. B. Gardner Co.
 Mechanical Contractor: Scott Co.

NEW CONCEPT OF HOTEL CONSTRUCTION known as total design integrates every element, from structural steel to the air conditioning system—Worthington air conditioning, of course.

New Beverly Hilton air conditioned by Worthington

Each room in the magnificent new Beverly Hilton has its own *individually controlled* air conditioner, consisting of a fan and coil unit. These fan and coil units supply year-round heating and cooling.

The entire 1000-ton system was selected after rigid tests under supervision of architect Welton Becket's

staff. A pair of Worthington 400-ton centrifugal compressors and two 100-ton Worthington Packaged Water Chillers provide refrigeration for the complete air conditioning system. Worthington Corporation, Air Conditioning and Refrigeration Division, Section HP, Harrison, New Jersey.

A-6-74

WORTHINGTON



CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME

New Prudential Buildings Feature **QUIET**

with Acousti-Celotex Tile on Acousti-Line* Suspension System

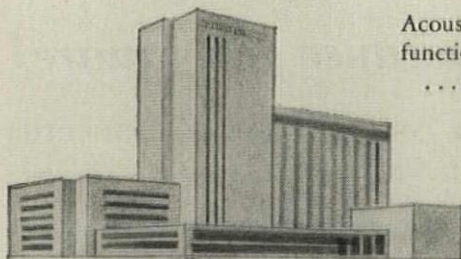


*REG U. S. PAT. OFF.

Office in Jacksonville Prudential Building, showing typical Acousti-Celotex Sound Conditioning installation.



Prudential's South Central Home Office,
Jacksonville, Florida
Architects: Kemp, Bunch & Jackson.



Prudential's North Central Home Office,
Minneapolis, Minnesota
Architects: Magney, Tusler & Setter.

Acousti-Celotex Sound Conditioning installations in the Prudential Buildings are models of engineered effectiveness. More than 1,000,000 square feet of incombustible Acousti-Celotex Perforated Mineral Tile, Celotone Tile, and Acousteel metal pan were applied.

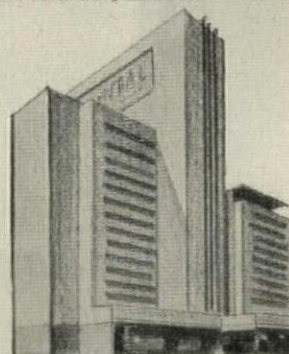
The Acousti-Line Suspension System, on which Acousti-Celotex Tile was installed, offers two additional functional benefits: Complete flexibility of ceiling units . . . tile, lights, air diffusers, etc. . . . permits interchanging for unlimited variety of office layouts and arrangements.

And easy access is provided to above-ceiling areas for servicing of lights, wires, ducts, plumbing, other utilities.

This combination of beauty, functionalism, and acoustical efficiency represents modern sound

conditioning and ceiling design at their best

. . . well in keeping with the most advanced architectural achievements.



Prudential's Southwestern Home Office, Houston, Texas
Architect: Kenneth Franzheim.

ACOUSTI-CELOTEX

REGISTERED

U. S. PAT. OFF.

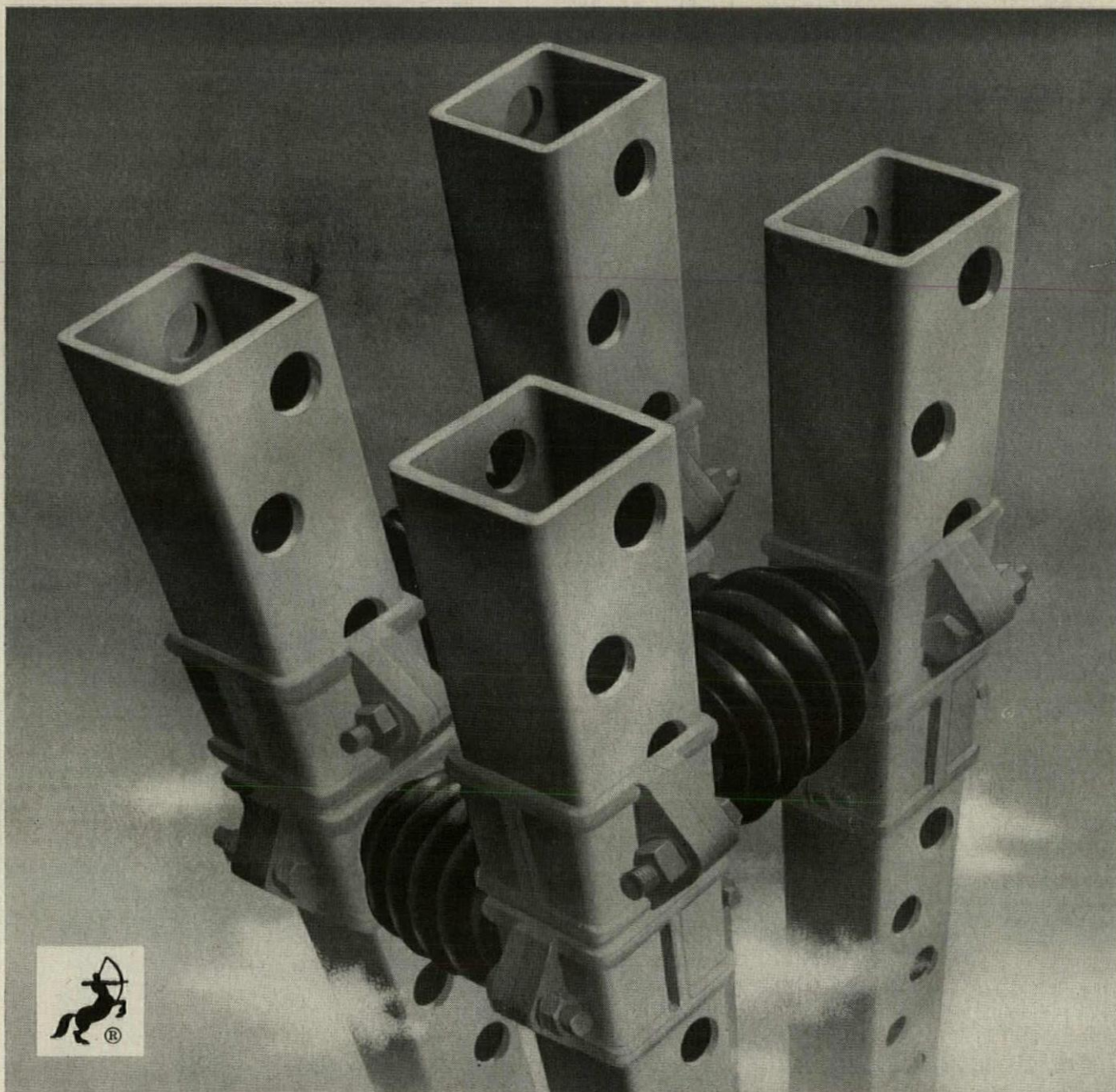
Sound Conditioning




TRADE MARK

Products for Every Sound Conditioning Problem—The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Illinois • In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.

FOR FULL DETAILS on the complete line of Acousti-Celotex products, please write to the Celotex Corporation, Dept. A-76, 120 S. LaSalle Street, Chicago 3, Illinois, or consult Sweet's Catalog Service.



Best for carrying power **'WAY UP...** *because it's square!*

Chase 

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

CHASE® VENTILATED SQUARE COPPER TUBE BUS CONDUCTOR

Power-carrying backbones of tall buildings must do their job in limited space. Just the place for compact, higher-capacity Chase ventilated square bus! You see, this bus is *beam-rigid*. Can withstand mechanical stresses imposed by great heights better than any other bus shape. Strong, electrically efficient joints are no problem either.

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RESPONSIBILITY

IN THE CURTAIN WALL JOB

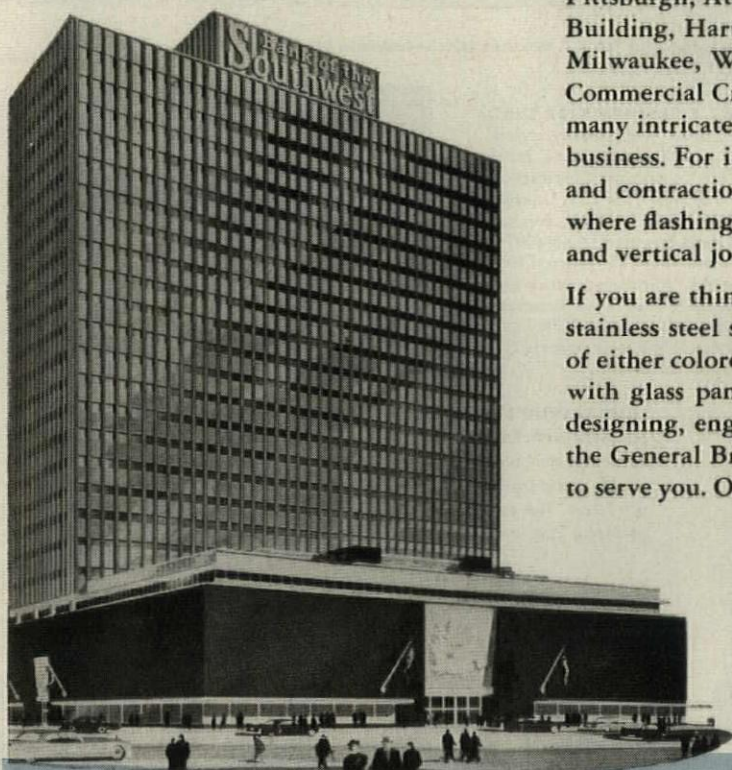


There's no divided responsibility when your specification says:
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General Bronze not only offers you the benefit of their many years of practical experience in designing and producing curtain wall systems but also is ready to take full responsibility for their erection.

As a pioneer in the field of curtain wall we have learned from 10 years experience with more than 24 major jobs—including the United Nations Buildings, and Lever House, New York City, the Alcoa Buildings at Pittsburgh, Atlanta and Cincinnati, the Connecticut General Life Insurance Building, Hartford, Conn., the Equitable Life Assurance Building, Milwaukee, Wisc., the R.C.A. Cherry Hill Offices, Camden, N. J., the Commercial Credit Building, Baltimore, Md., and others—how to solve the many intricate and detailed problems that are a part of this highly specialized business. For instance, we have learned how to take care of expansion and contraction while assuring weather tightness at all times—when and where flashings are necessary—how to design for trouble-free horizontal and vertical joints,—the control of moisture migration, etc.

If you are thinking of curtain walls in terms of aluminum, bronze or stainless steel skins, grids with aluminum windows and insulating panels of either colored aluminite or porcelain enamel, or stainless steel grids with glass panels, we offer you the benefits of our vast experience in designing, engineering, fabricating and erection of curtain walls. Call in the General Bronze representative today. He is ready and anxious to serve you. Our catalogs are filed in Sweet's, Section 17a/Ge.



Another CURTAIN WALL by GENERAL BRONZE

The Bank of the Southwest, Houston, Texas
Architect: Kenneth Franzheim
Contractor: W. S. Bellows Construction Co.

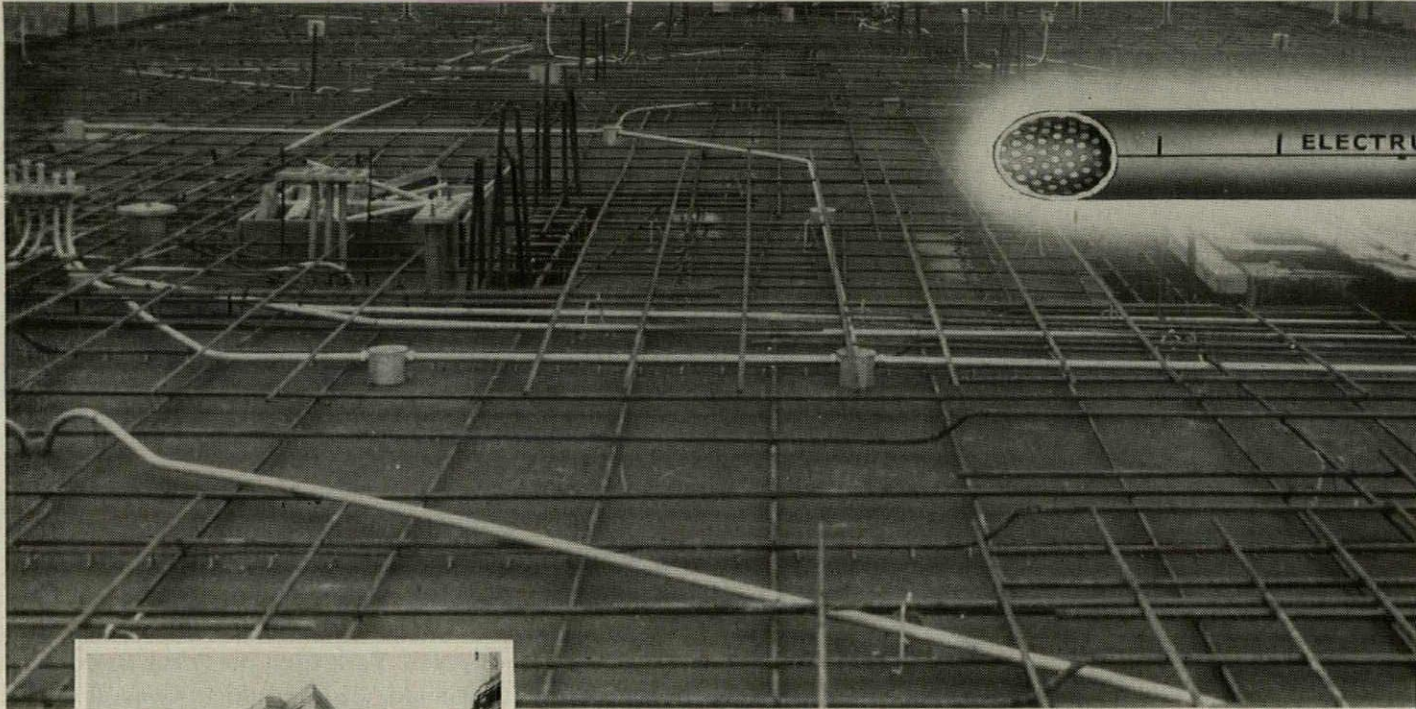


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250,000 feet of Republic "Inch-Marked" E.M.T. provide electrical flexibility



530 Park Avenue Apartment, New York, N. Y. Contractors: Campagna Construction Corp., New York, N. Y.
Architect: George F. Pelham, Jr., New York, N. Y.

APARTMENT BUILDINGS KEEP THAT MODERN LOOK with smartly styled Truscon Series 138 Double-Hung Steel Windows. The Campagna Construction Corporation of New York City, builders of the distinctive 530 Park Avenue Apartment (left), has used Truscon Windows for more than 15 years. Campagna likes the "fair prices, durability, smooth operation, ease of maintenance, weather protection, paintability and Truscon service." See your Sweets File or mail coupon for details.



LONG-LASTING BEAUTY AND FIRE PROTECTION in ceiling construction are a certainty with Truscon's Herringbone Lath and plaster. This durable double mesh lath and plaster provide a tested insulating membrane that effectively shields structural members from fire. And the surface is both durable and attractive. The complete Truscon line includes more than 40 different items of Metal Lath and Accessories. They're available everywhere.

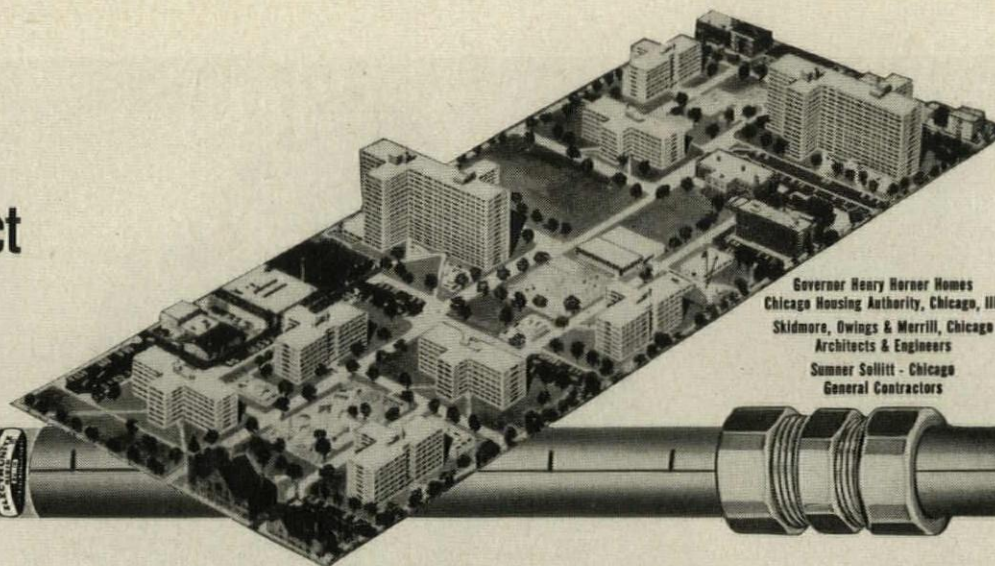
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Architects & Engineers
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General Contractors

The current drive for "Housepower"* carries the promise of more and more electrical conveniences for home and apartment. In turn, this dictates the need for electrical systems flexible enough to provide for increased loads.

Designers and builders of Chicago's magnificent Henry Horner Housing Project took this need into consideration when they specified conduits of ample size and installed Republic "Inch-Marked"® E.M.T. Nearly 50 miles of this modern, electrical raceway was used in the eight beautiful apartment buildings (above)—providing unsurpassed protection and flexibility. Though present wiring will handle all foreseen loads, the addition of extra circuits—should they be needed—will be quite easy.

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*Adequate wiring



Lodgewood Apartments, Milwaukee, Wisconsin
Fabricator: Louis Hoffman Co., Milwaukee, Wisconsin
Architects: Scott, Kloppenburg & Scott

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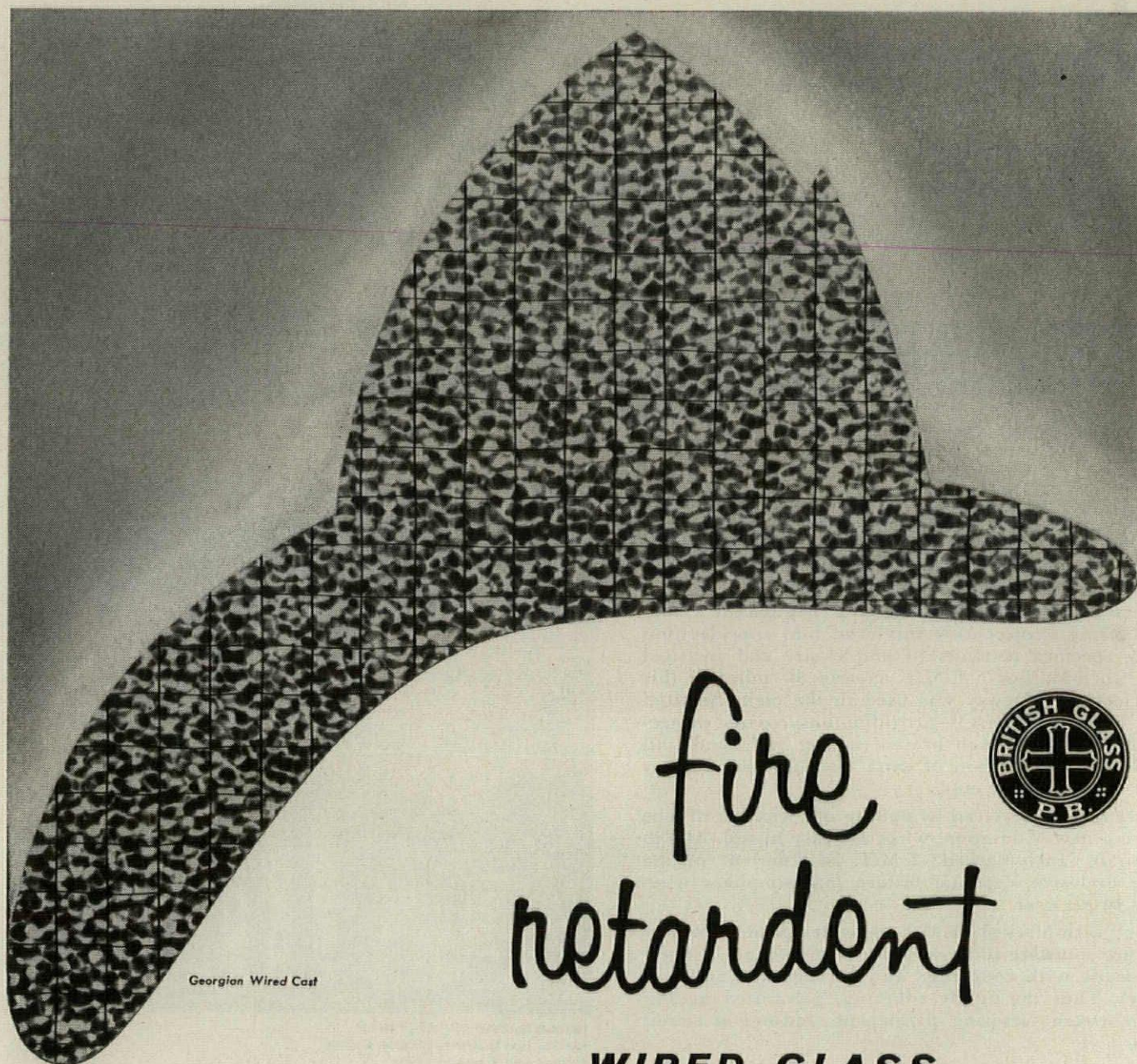
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- ☐ Truscon® Metal Lath
- ☐ Truscon Series 138 Double-Hung Steel Windows
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Georgian Wired Cast

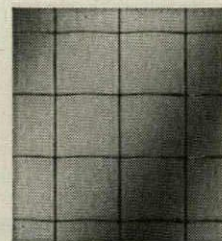
fire
retardent



WIRED GLASS

Wired glass is the only material that lets in light but is strong enough to resist the progress of FIRE. Insurance companies take this factor into consideration when assessing a building. Pilkington's have fire retardent glass in four attractive styles . . . Polished Georgian Wired . . . Georgian Wired Cast . . . Polished Wired . . . Polished Wired Cast. These glasses also act as a safety barrier and give extra protection against burglary.

Please write for specifications. We also have explanatory pamphlets telling the story of fire retardent glass. These were specially designed for builders and architects to use in client discussions. Copies sent on request.



Polished Georgian Wired

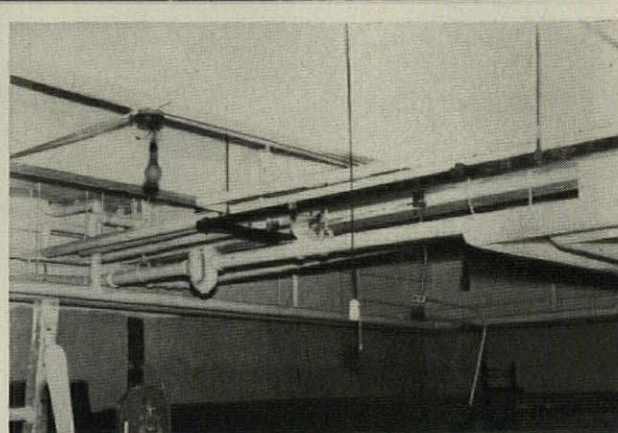
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Represented by PILKINGTON BROS. (CANADA) LIMITED

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Illuminated acoustical ceiling at the Agricultural Insurance Company, Watertown, N. Y., manufactured by **Luminous Ceilings Inc.**, Chicago 47, Ill. Installation designed by **Sargent, Webster, Crenshaw & Folley, A.I.A.**, Watertown, N. Y.



“Outstanding solution to a very difficult problem”

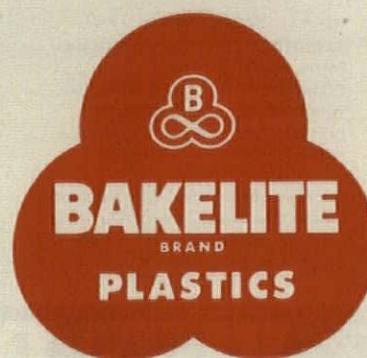
Problem: Create attractive office area in unattractive storage space. Hide unsightly ceiling, plumbing, air conditioning ducts, sprinkler heads. Provide sound-deadening, illuminated ceiling.

Solution: A ceiling using sheets of corrugated **BAKELITE** Brand Rigid Vinyl Plastic. Fluorescent light fixtures suspended from the floor above, provided mounting for the translucent vinyl sheets. Small panels of sound-absorbing material were mounted in a vertical plane, combining with the corrugations to disperse the sound waves.

The fabricated sheets are listed by Underwriter Laboratories as suitable for installation below and as a decorative cover for sprinkler heads since

the sheets will soften and fall away before the sprinklers operate. This gives a saving in plumbing and an improvement in appearance. The architect commented: “This ceiling provided an outstanding solution to a very difficult problem.”

A ceiling like this will keep its beauty for years. **BAKELITE** Brand Rigid Vinyl Sheets won't warp, crack or discolor with aging. They resist moisture, oil, combustion, and are dimensionally stable. They remove readily for easy cleaning. For modern illuminated ceilings that offer all these advantages—specify **BAKELITE** Brand Rigid Vinyl Sheets. You can get complete data by writing today to Department RG-2.



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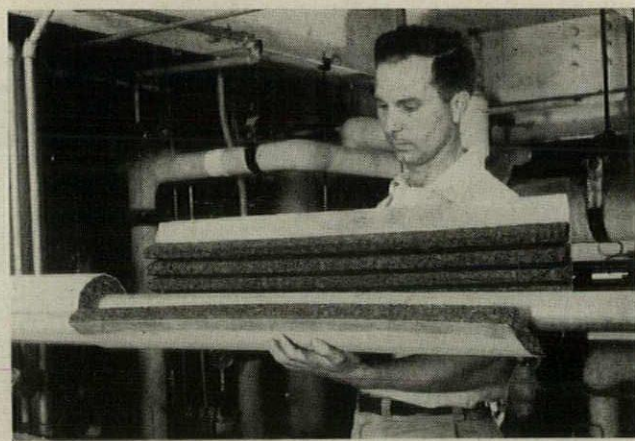
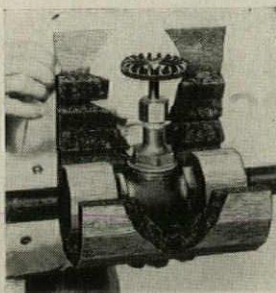
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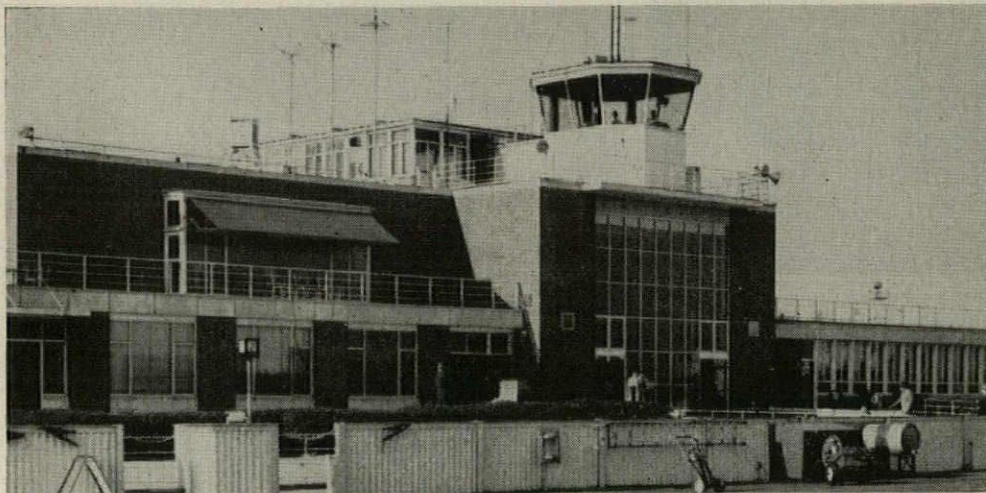
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empty it. It has a 140,000 Btu gas burner for rapid drying. Measuring 45" across and 36" deep, the compact, self-contained washer-drier can reduce laundry sizes in commercial buildings considerably. Field tested for five years, the *Triomat* was engineered by John Chamberlain, inventor of the Bendix automatic washer. Its retail price is \$2,375.

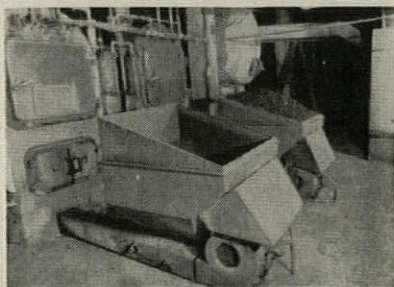
Manufacturer: Duplex Corp.



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Will-Burt Stokers, installed 1940.

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SAYS ROBERT K. JOERGER,
AIRPORT MANAGER

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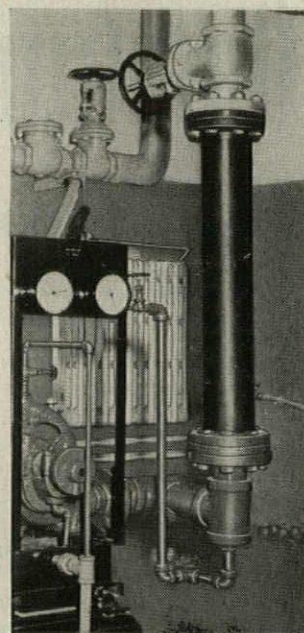
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Manufacturer: Armstrong Cork Co.



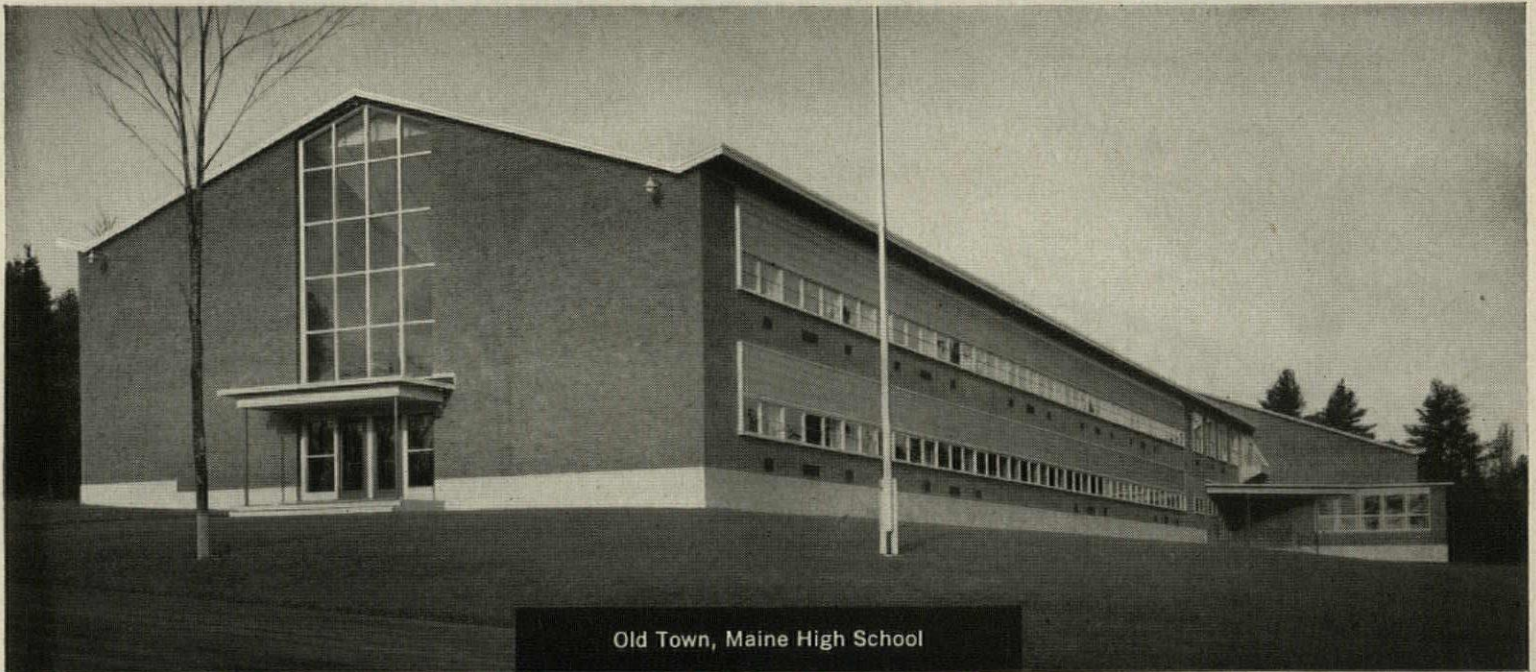
(8) RUBBER PIPE cushions noise and vibration in metal water lines

Knocking and other annoyingly audible manifestations of water systems at work often are transmitted undiminished through an entire building via the rigid metal water pipe. To offset these noises at the source, T. R. Finn & Co. suggests its

continued on p. 208

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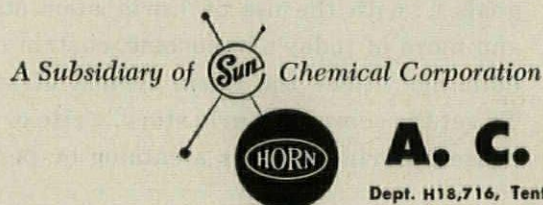
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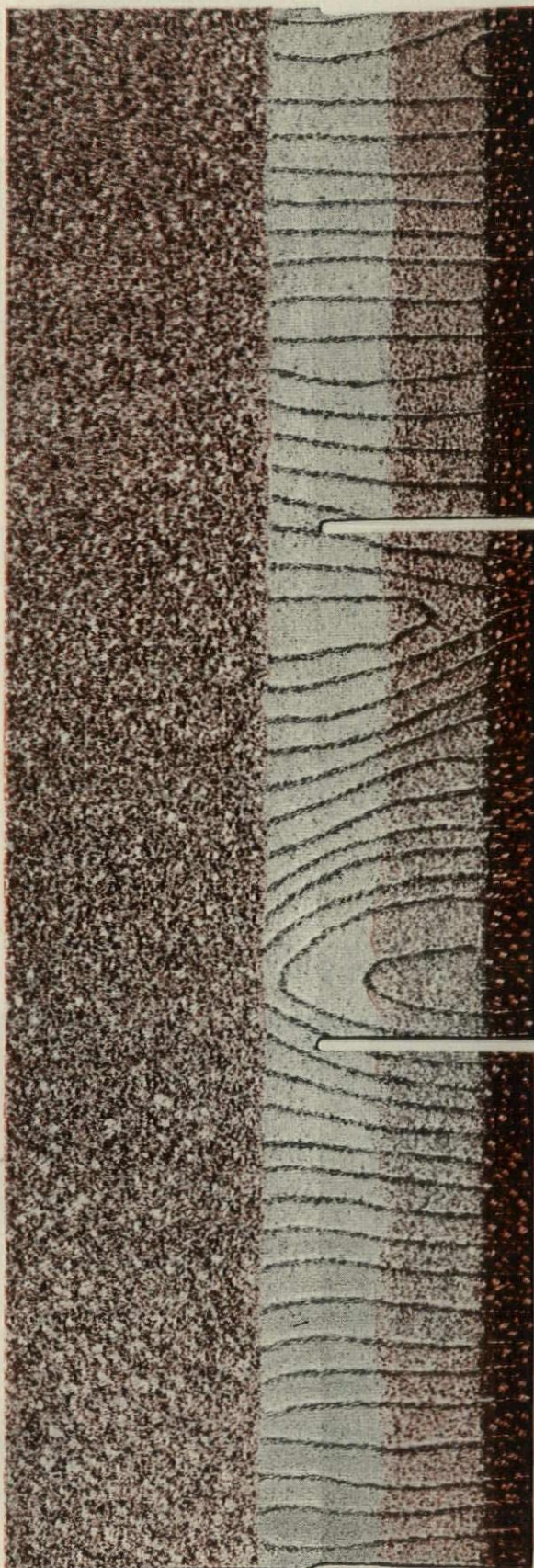


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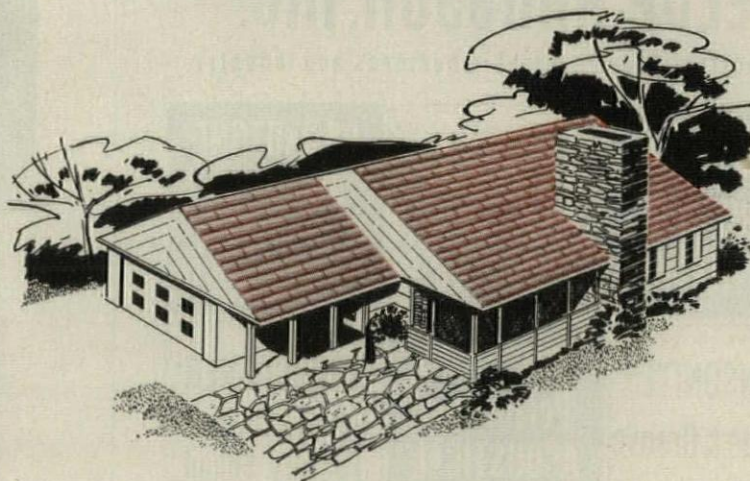
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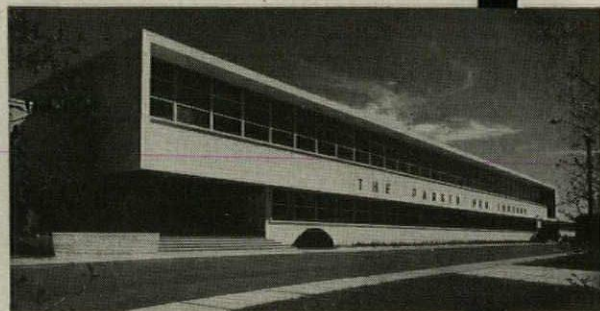
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Architect: John J. Flad & Son
Contractor: T. S. Willis & Co.

and this



Chicago Musical Instrument Co., Chicago, Ill.
Architect: Friedman, Alschuler & Sincere
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Architect: Holabird, Root & Burgee
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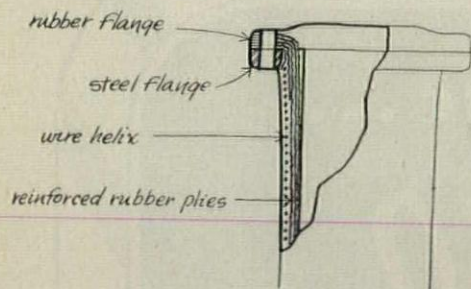
Washington Steel Corporation

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PRODUCTS *cont'd.*

For more data use coupon, p. 218



rubber hose treatment. Far from a bludgeoning weapon, the *Soundzorber* is a pipe fitting of wire reinforced rubber plies which is installed between a water pump, chiller or boiler and the standard pipe lines. (To avoid objectionable noises from the battery of chilled water pumps in New York City's Chrysler Building, *Soundzorbers* are used in the suction and discharge lines.) Having an acoustical im-

pedance 550 times lower than steel pipe, the flexible rubber pipe sections can dampen up to 90% of all expansion and contraction noises and vibrations. Small units are equipped with male iron pipe thread fittings; large sizes have integral steel flanges encased in molded rubber to prevent any galvanic action. Standard operating temperature is up to 180° for cold water, brine and hot water lines, but special heat resisting units are available for steam temperatures up to 210° F. A 3' *Soundzorber* of 3" ID pipe with male fittings and a pressure rating of 150 lb. per sq. in. costs about \$56; other units range up to \$800.

Manufacturer: T. R. Finn & Co., Inc., Industrial Div.



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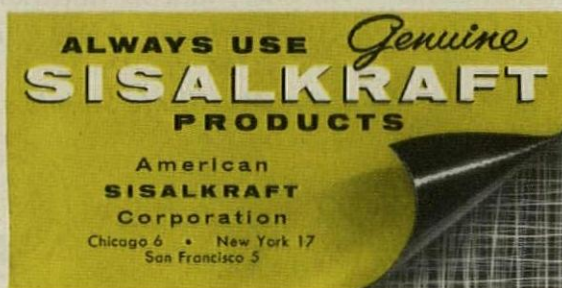
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(9) **WATER CLOSET with optional built-in spray doubles as bidet**

If any plumbing fixture breaks the US block against bidets, it very likely will be American-Standard's *Neo Health*. Current medical opinion and increased travel to other countries where the cleansing fixtures are in common use have both helped broaden the market here in custom-built homes and hospitals. (Some hotels such as the Fontainebleau in Miami include bidets in bathrooms of the luxury suites). But space conscious designers and building owners work so hard whittling down the size of most commercial and institutional bathrooms that there is no space for extra fixtures. The *Neo Health*, however, is not a supplementary piece of plumbing. Made of vitreous china with a contoured saddle seat, it can serve as the standard toilet. By depressing a handle at the rear of the



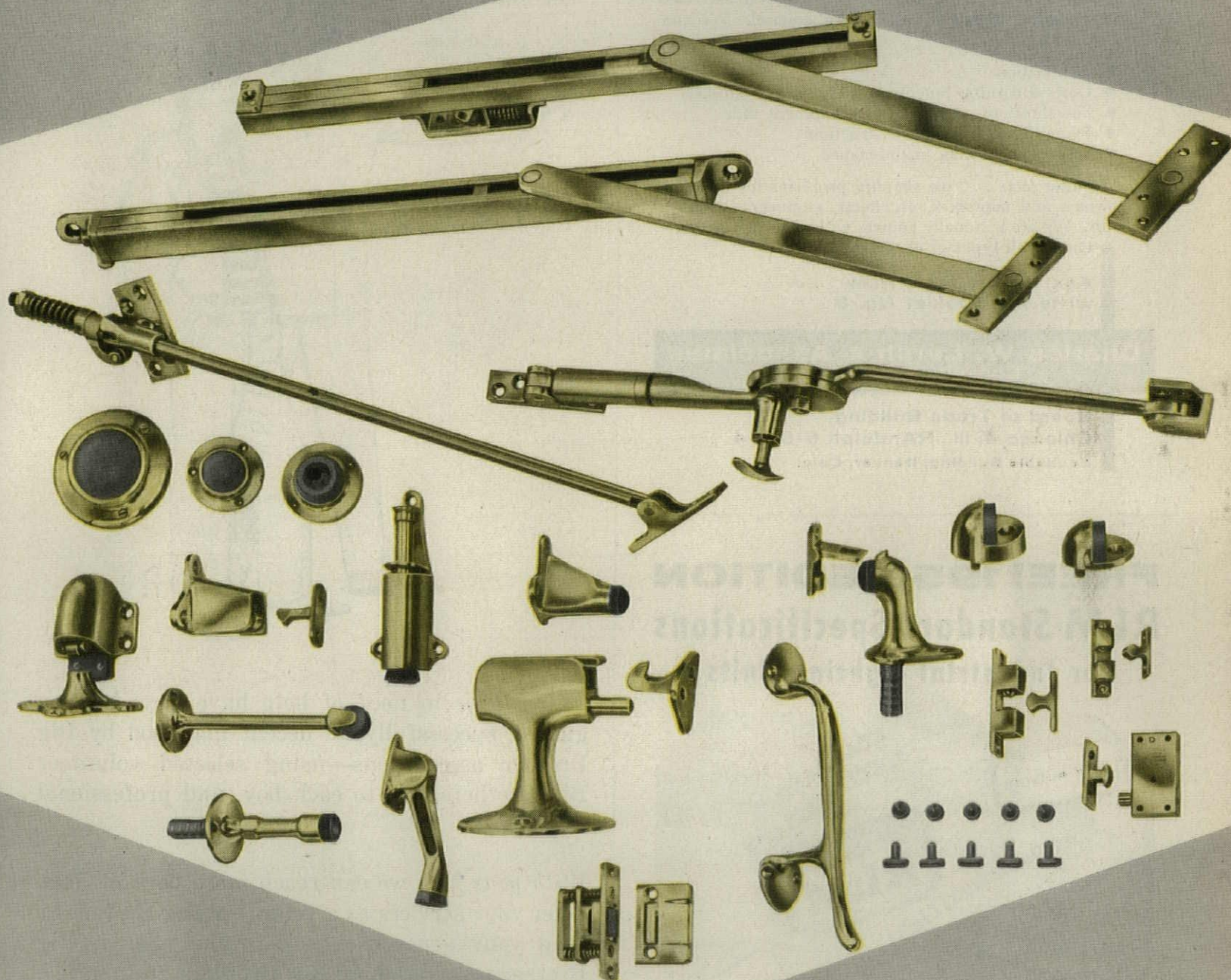
bowl, the user releases a water spray from a compartmented tank. Prices, somewhat higher than regular water closets, are far below two separate fixtures. In white the *Neo Health* is \$129.10; in green, ivory, gray, red or coral: \$167.15.

Manufacturer: American-Standard Plumbing & Heating Div., American Radiator & Standard Sanitary Corp.

continued on p. 212



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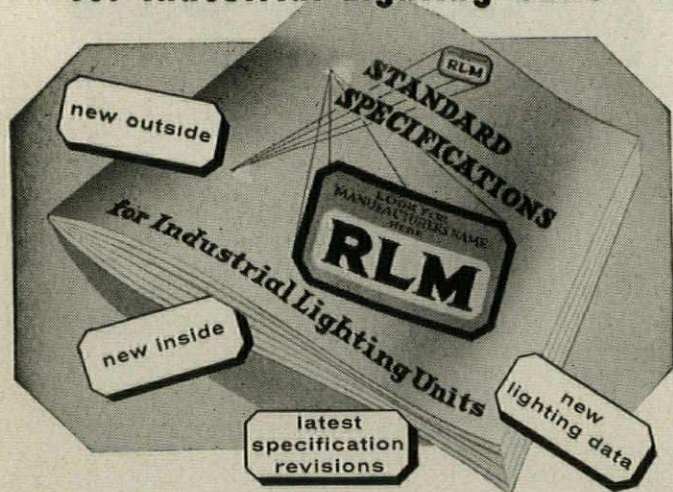
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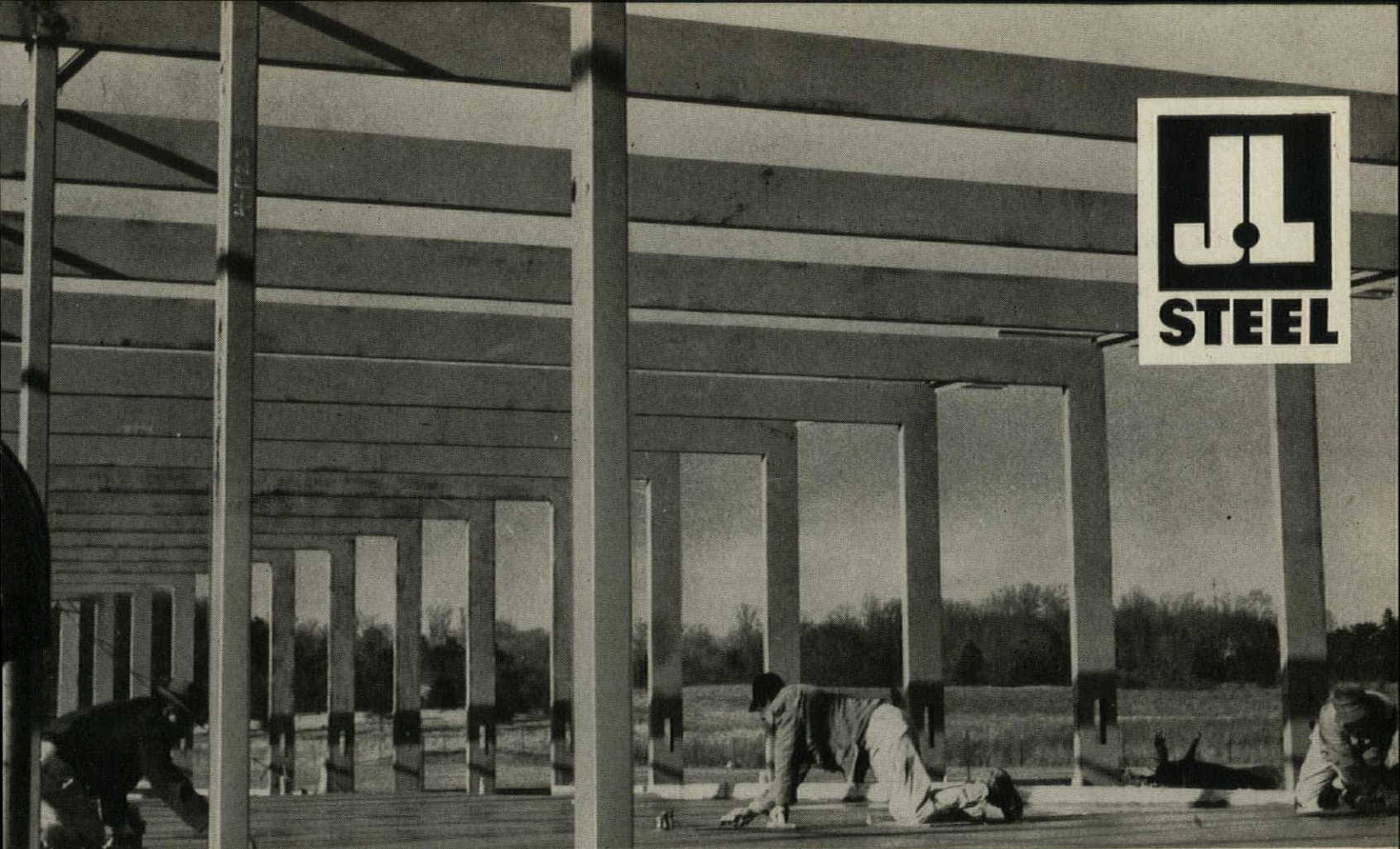
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RIGID STEEL BENTS FORM BASIC FRAME OF WHEATLEY SCHOOL, EAST WILLISTON, LONG ISLAND

Boxed and Exposed J&L JUNIOR CHANNELS give classrooms clean, fresh appearance

Architect W. Frank Bower, Jr., of La Pierre, Litchfield & Partners, New York, has employed 130 tons of Junior Channels in the new two million dollar Wheatley School (East Williston, Long Island Junior-Senior High School). The 12", 10.6# Junior Channels are boxed to make rigid bents forming the basic frame of the classroom buildings.

The bents were fabricated in two sections by De Voe Iron Works, Inc. of Long Island City, then trucked to the job. Erection went fast. Mr. Stephen J. De Voe, Jr. reported that it required only five hours to erect the 56 bents in one 232' x 71'-4" building.

Mr. Bower summed up the advantages of

using J&L Junior Channels in the school's unique design by saying:

"The exposed structural steel bents or rigid frames are the basic frame of the building. This was done to take advantage of insulating cement and wood fiber structural plank which has excellent acoustical properties. In addition we avoid the use of hung ceilings. As a result we estimate savings of \$40,000 to \$50,000 on this \$2,000,000 building.

"This type of construction eliminates the confined air space between roof and hung ceiling which, unless mechanically ventilated, stores hot air to reflect heat on the classrooms in the warmer months. The rigid

frames give a cleaner, fresher look than alternate materials. We prefer them as being more interesting than the usual flat hung ceiling. They also give us a chance to introduce more color into the classrooms."

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Artist's rendering of the Wheatley School

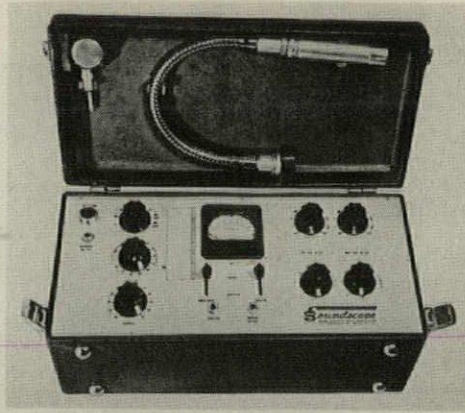


PRODUCTS cont'd.

For more data use coupon, p. 218

(10) NOISE ANALYZER draws maps of sound contours to spot trouble

Because the ear is more sensitive to some sound frequencies than others, *Soundscope* was developed to help technicians find and isolate offending frequencies. The instrument combines in a single portable unit four functions necessary to measure and analyze noise accurately. It measures over-all sound levels, operates as an analyzer,



measures sound in each of eight octave bands to determine noise peaks, and checks sounds in narrower frequency bands.

Beside being useful in noise abatement programs, the instrument can help engineers to draw noise contour maps of industrial areas. The sound level readings and analyses of frequencies and intensities at different distances from noise sources can be used to plan a detailed map of an area indicating trouble areas. The engineers can then either eliminate noise at the source by redesigning machinery and equipment or isolate noise source by insulation or devise some personal protection for exposed individuals.

Weighing 20 lb. the instrument is shielded from mechanical and electrical mishaps. All controls are on one panel and a single meter gives all the readings. Range is from 24 db, about that of a very quiet home (without TV, Hi-Fi, and small cowboys), to 150 db, considerably higher in sound pressure than an air-raid siren. Price: \$985.

Manufacturer: Mine Safety Appliances, Pittsburgh, Pa.

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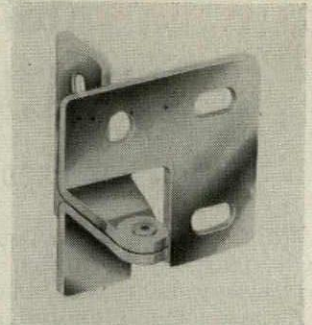
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(11) FLUSH PIN HINGE eliminates face frames on cabinet doors

By using Washington flush pin hinges for door mounting, a large expanse of cabinet front can be cut from a single piece of plywood so that the grain runs in a continuous pattern over apron and doors. Eliminating the face frame usually required on wood cabinet doors, the neat little pin units feature a positive adjustment and are interchangeable for right and left sides. They are made of heavy gauge steel for partition thicknesses of $\frac{1}{2}$ ", $\frac{3}{8}$ " and $\frac{3}{4}$ " in chrome, brass, bronze, copper, prime coat and cadmium finishes. Prices run about 45¢ to 65¢ a pair.

Manufacturer: Washington Steel Products, Inc.

PRODUCT NOTES

(12) Cold galvanizing.

Applied like paint with brush or spray gun, *Drygalv* galvanizing compound is reported to protect iron and steel surfaces

continued on p. 218

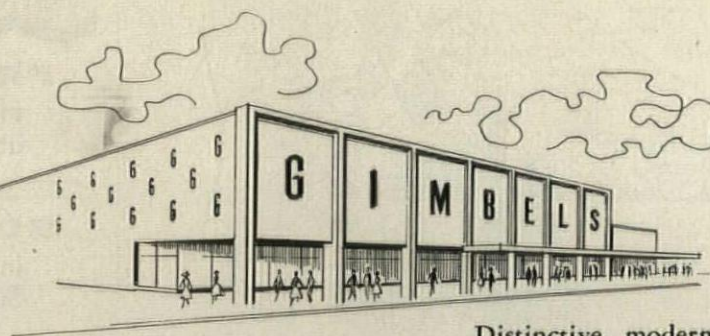
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Architects: GRASSOLD-JOHNSON ASSOCIATES
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Call in a Grinnell Fire Protection Engineer when you design your next project. He can advise you on the best system to suit your requirements. There is a Grinnell System for every type of fire hazard. Write for literature. Grinnell Company, Inc., 292 West Exchange Street, Providence, Rhode Island.



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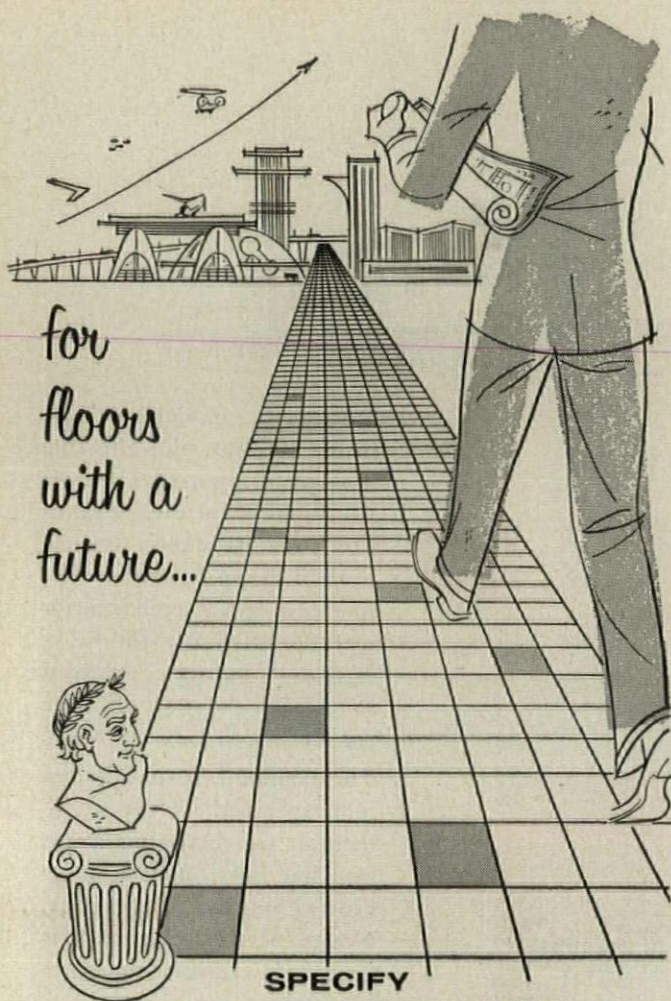
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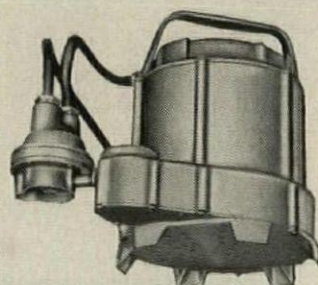
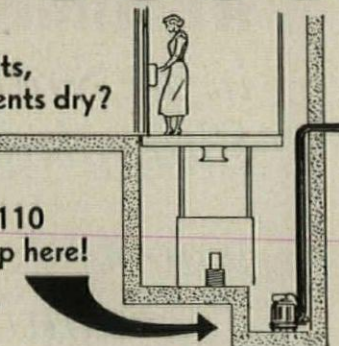
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For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

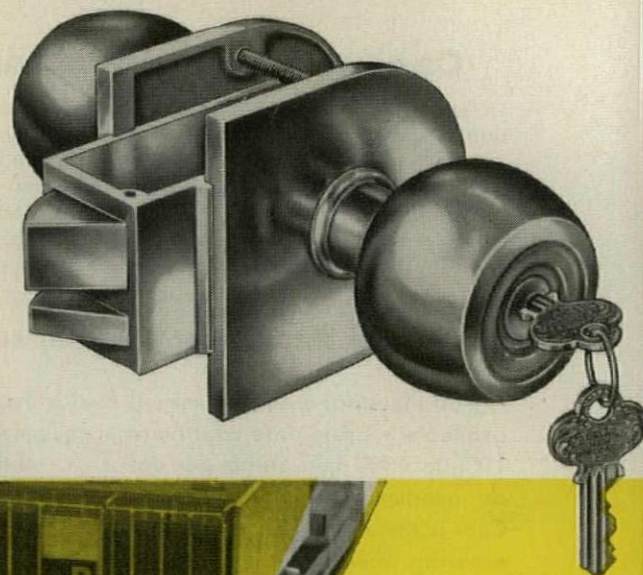
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(13) Luminescent enamels.

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(14) Color coded cable.

Thermoplastic insulation on individual conductors in General Electric's recently improved BX eliminates the braid, provides integral color coding and makes stripping quicker and easier.

(15) Molten gold aluminum.

Kaiser Aluminum & Chemical Corp.'s new process of imparting sunfast gold color to aluminum starts in the pot. Alloys added during the molten stage make it possible for fabricators to anodize the light weight metal without dyes or other coloring agents and accurately control the shade of gold from pale straw to deep bronze tones. Penetrating the surface slightly deeper than other anodized finishes, the Kaiser gold colors are somewhat more resistant to abrasion.

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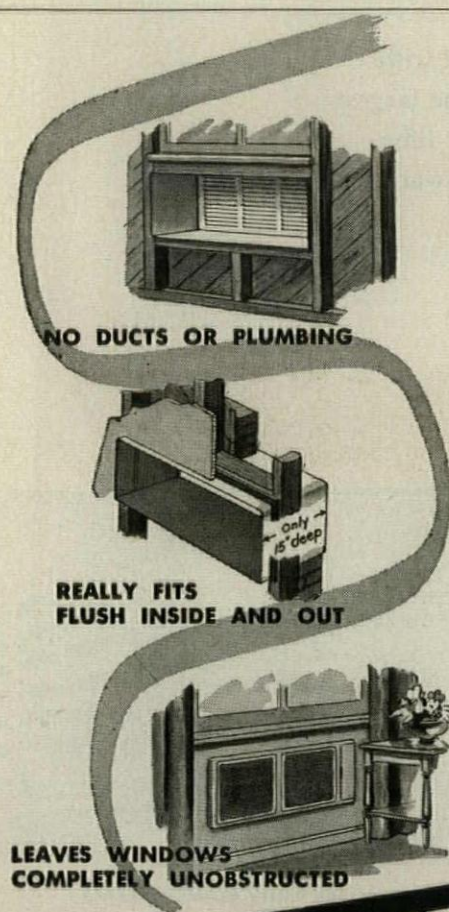
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Technical Publications, p. 224



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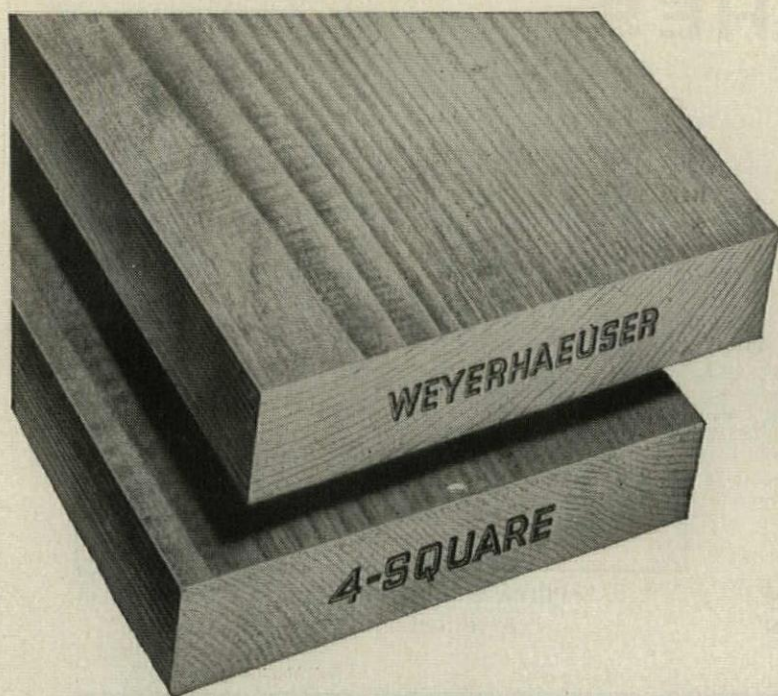
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St. Andrew's Lutheran Church, Parkridge, Ill.
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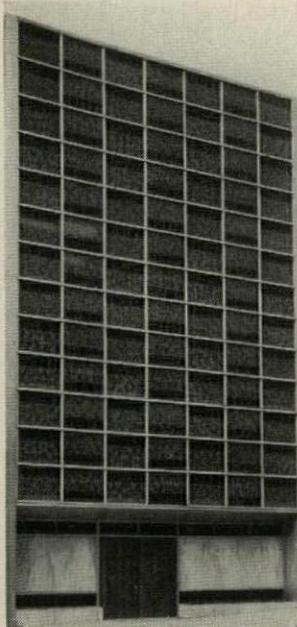


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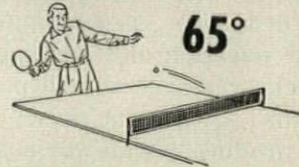
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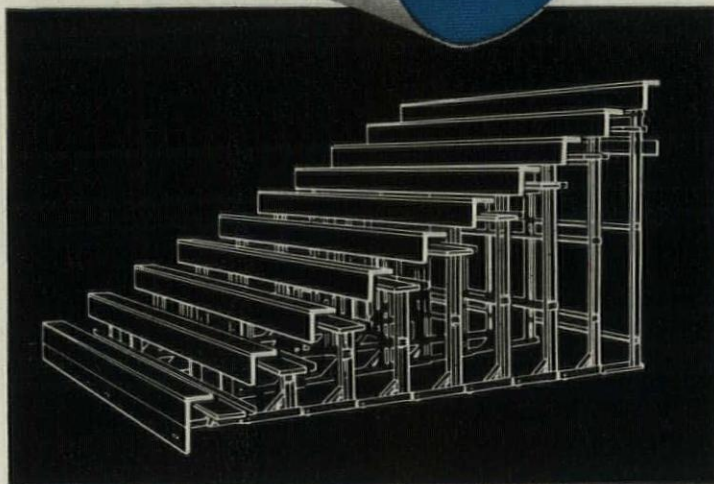
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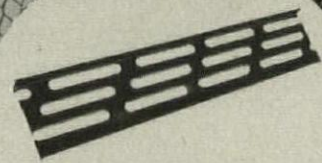
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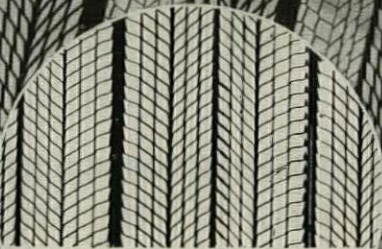


UNITED STATES GYPSUM

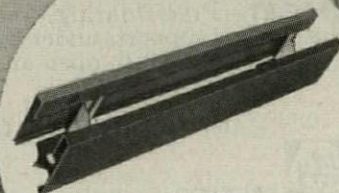
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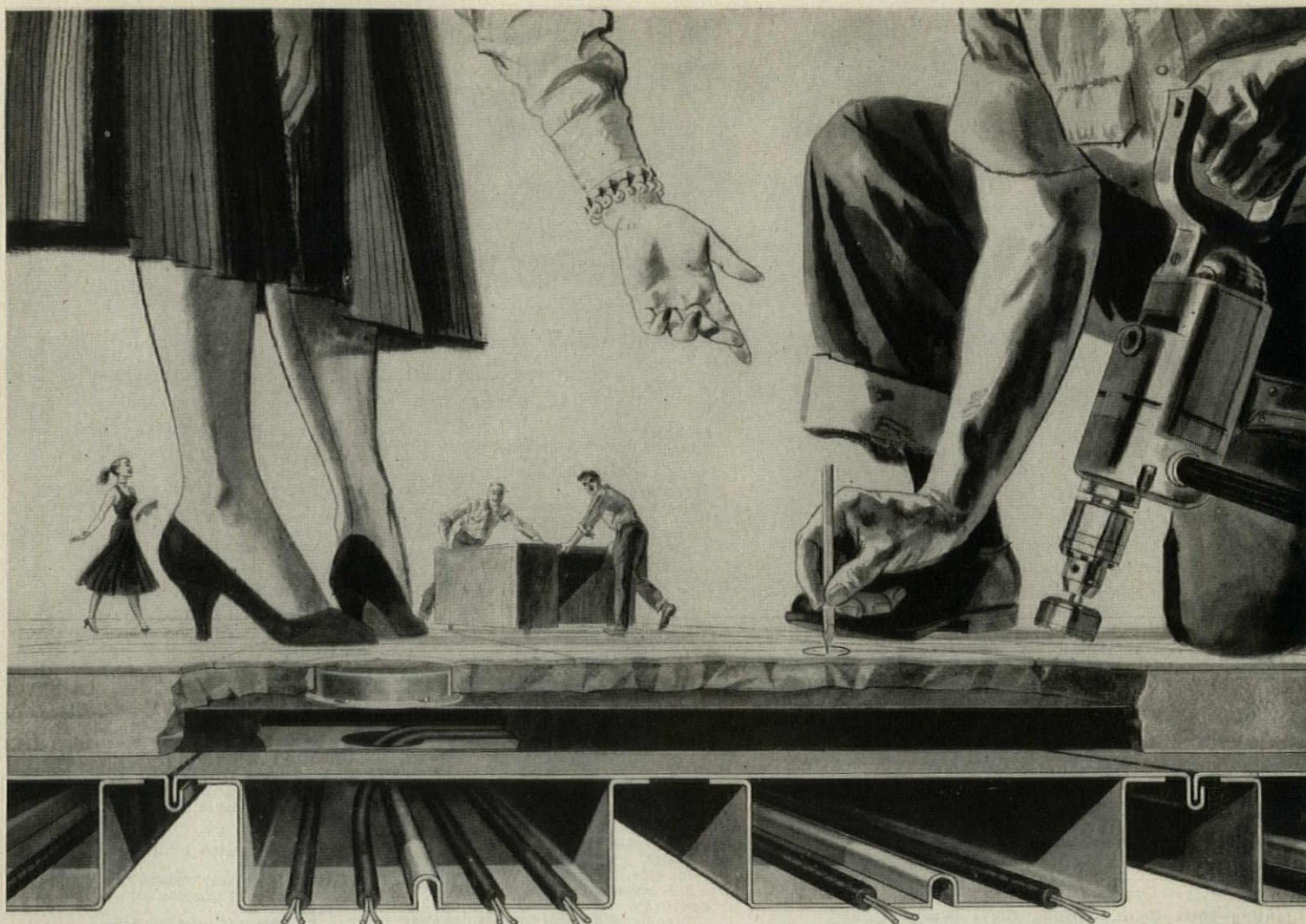
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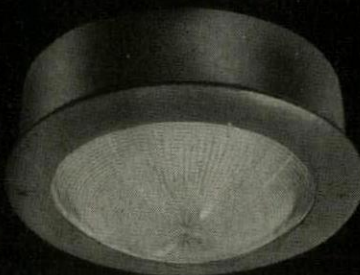
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Advertisers Index:

Adams & Westlake Co.	187
Agency—Henri, Hurst & McDonald, Inc.	
Allegheny Ludlum Steel Corp.	180
Agency—W. S. Walker Advertising, Inc.	
Alumiline Corp., The	220
Agency—International Advertisers	
Aluminum Company of America	86, 87
Agency—Fuller & Smith & Ross, Inc.	
American Air Filter Co.	
(Herman Nelson Unit Ventilator Div.)	43, 44, 45
Agency—Doc Anderson Advertising Agency	
American Biltrite Rubber Co.	
(Amtico Flooring Div.)	40
Agency—Al Paul Lefton Co., Inc.	
American Brass Co.	23
Agency—Kenyon & Eckhardt, Inc.	
American Hardware Corp.	
(P & F Corbin)	216, 217
Agency—Horton-Noyes Co.	
American Laundry Machinery Co.	212
Agency—Farson, Huff & Northlich	
American Machine & Foundry Company	4
Agency—Fletcher D. Richards, Inc.	
American Seating Company	22
Agency—Brooke, Smith, French & Dorrance, Inc.	
American Sisalkraft Corp.	208
Agency—Sutherland-Abbott	
American Window Glass Company	185
Agency—W. S. Walker Advertising, Inc.	
Anemostat Corp. of America	194A, B
Agency—Michel-Cather, Inc.	
Armstrong Cork Company	84C, 88, 89
Agency—Batten, Barton, Durstine & Osborn, Inc.	
Bakelite Company	
(Div. Union Carbide & Carbon Corp.)	201
Agency—J. M. Mathes, Inc.	
Bayley Co., William	30
Agency—Wheeler-Kight & Gainey, Inc.	
Big Brothers of America	210
Agency—Direct	
Bileo Company, The	191
Agency—Ormsbee Associates	
Blue Ridge Glass Corporation	27, 84C
Agency—Fuller & Smith & Ross, Inc.	
Bradley Washfountain Co.	214
Agency—Kirkgasser-Drew Advertising	
Bridgeport Brass Company	228
Agency—Hazard Advertising Company	
Bush Mfg. Co.	66
Agency—William Schaller Co., Inc.	
Butler Manufacturing Co.	41
Agency—Aubrey, Finlay, Marley & Hodgson	
Byers Company, A. M.	77
Agency—Ketchum, MacLeod & Grove, Inc.	
Cabot Inc., Samuel	50
Agency—Shattuck, Clifford & McMillan, Inc.	
Carpet Institute, Inc.	67
Agency—Morey, Humm & Warwick, Inc.	
Carrier Corp.	22
Agency—N. W. Ayer & Son, Inc.	
Carter-Waters Corp., The	60
Agency—Potts-Woodbury, Inc.	
Ceco Steel Products Corp.	52B, C
Agency—Charles O. Puffer Company	
Celotex Corp., The	196G
Agency—MacFarland, Aveyard & Co.	
Certain-Teed Products Corp.	205
Agency—Gray & Rogers	
Chase Brass & Copper Co.	196H
Agency—Cunningham & Walsh, Inc.	
Committee on Steel Pipe Research	93
Agency—Smith, Taylor & Jenkins, Inc.	
Concrete Reinforcing Steel Institute	181
Agency—The Fensholt Advertising Agency	
Congoleum-Nairn, Inc.	52
Agency—Dancer-Fitzgerald-Sample, Inc.	
Corbin, P & F	
(American Hardware Corp.)	216, 217
Agency—Horton-Noyes Co.	
Coyne & Delany Co.	24
Agency—Lee-Stockman, Inc.	
Cupples Products Corporation	84
Agency—Ridgway Advertising Co.	
Cyclotherm Division	
(National-U.S. Radiator Corp.)	72
Agency—Chapman-Nowak & Associates, Inc.	
Davidson Enamel Products, Inc.	68, 69
Agency—The Lee Donnelley Co.	
Drayer-Hanson	26
Agency—The Edwards Agency, Inc.	
Dunham Co., C. A.	96, 97
Agency—The Buchen Company	
Dur-O-Wal	26
Agency—Ambro Advertising Agency	

Eljer Division	
(The Murray Corporation of America)	Cover III
Agency—Ross Roy, Inc.	
Englander Co.	5
Agency—Harvey Epstein Advertising, Inc.	
Executive Service Corp.	206
Agency—Deutsch & Shea, Inc.	
Fenestra Incorporated	223
Agency—Fuller & Smith & Ross, Inc.	
Ferro Corporation	170
Agency—Fuller & Smith & Ross, Inc.	
Formica Co., The	33
Agency—Perry-Brown, Inc.	
General Bronze Corp.	197
Agency—Wildrick & Miller, Inc.	
General Electric Co.	84F
Agency—Ruthrauff & Ryan, Inc.	
General Tire & Rubber Co.	73
Agency—D'Arcy Advertising Co.	
Gibson Manufacturing Co.	11
Agency—Lowe & Stevens	
Glynn-Johnson Corp.	209
Agency—Edwin E. Geiger	
Goder Incinerators, Joseph	206
Agency—Harry F. Port Advertising	
Goodrich Industrial Products Co., B. F.	10
Agency—The Griswold-Eshleman Co.	
Goodyear Tire & Rubber Co., The	3
Agency—Kudner Agency, Inc.	
Grant Pulley & Hardware Corp.	28
Agency—Jamian Advertising & Publicity, Inc.	
Great Lakes Carbon Corp.	
(Perlite Division)	189
Agency—Darwin H. Clark Co.	
Grinnell Company, Inc.	213
Agency—Horton-Noyes Co.	
Guth Company, The Edwin F.	2
Agency—H. George Bloch Advertising Co.	
Hansson, Inc., Elof	206
Agency—Ben Lewis	
Haws Drinking Faucet Co.	178
Agency—Pacific Advertising Staff	
Holcomb & Hoke Mfg. Co., Inc.	171
Agency—Keeling & Co., Inc.	
Horn Company, Inc., A. C.	204
Agency—G. M. Basford Co.	
Inland Steel Products Co.	196B
Agency—Hoffman & York, Inc.	
International Steel Co.	172
Agency—Keller-Crescent Co.	
Iron Fireman Mfg. Co.	
(SelecTemp Division)	220
Agency—Joseph R. Gerber Co.	
Johns-Manville Corp.	179, 196A
Agency—J. Walter Thompson Co.	
Johnson Service Co.	Cover IV
Agency—K. E. Shepard, Inc.	
Jones & Laughlin Steel Corp.	211
Agency—Ketchum, MacLeod & Grove, Inc.	
Keasbey and Mattison Company	196C
Agency—Geare-Marston	
Kenco Pump Division	214
Agency—Thomson Advertising, Inc.	
Kentile, Inc.	169
Agency—Ruthrauff & Ryan, Inc.	
Keystone Steel & Wire Co.	78, 79
Agency—Fuller & Smith & Ross, Inc.	
Kinnear Mfg. Co.	92
Agency—Wheeler-Kight & Gainey, Inc.	
Lerch & Associates, Charles W.	210
Agency—The Arbogast Company	
Lewin-Mathes Co.	18
Agency—Winis-Brandon Company	
Lewyt Air Conditioner Corporation	218
Agency—Hicks & Greist, Inc.	
Libbey-Owens-Ford Glass Co.	74, 75, 76, 77
Agency—Fuller & Smith & Ross, Inc.	

Lightoller, Inc.52D
Agency—Alfred Auerbach Associates
Litecontrol101
Agency—Sutherland-Abbott
Ludman Corporation194C, D, E, F
Agency—Biscayne Advertising Agency, Inc.
Luminated Ceiling Division
(Thermotank, Inc.)188
Agency—Wolfe-Jickling-Conkey, Inc.
Luria Engineering Co.203
Agency—Emil Mogul Company, Inc.

Macomber, Inc.100
Agency—Direct
Mahon Company, The R. C.56, 57
Agency—Anderson Incorporated
Maple Flooring Manufacturers Assn.194
Agency—The Cramer-Krasselt Co.
Mastic Tile Corporation of America
(Wright Mfg. Co. Division)Cover II
Agency—S. R. Leon Company, Inc.
McLouth Steel Corporation52E
Agency—Denman & Baker, Inc.
McPhilben Mfg. Co., Inc.226
Agency—Royal & deGuzman, Inc.
McQuay, Inc.6
Agency—Foulke Agency, Inc.
Medart Products, Inc., Fred221
Agency—Charles W. Bolan Advertising Agency
Mengel Co., The15
Agency—Doe-Anderson Advertising Agency
Minneapolis-Honeywell Regulator Co.58, 59
Agency—Foote, Cone & Belding
Mississippi Glass Co.61
Agency—Ralph Smith Advertising Agency
Modine Mfg. Co.173
Agency—Klau-Van Pietersom-Dunlap Assoc.
Monsanto Chemical Co.183
Agency—Needham, Louis & Brorby, Inc.
Mosale Tile Company, The84A
Agency—Farson, Huff & Northlich

National Coal Association215
Agency—Vansant, Dugdale & Co.
National Electric Products Corp.192
Agency—Ketchum, MacLeod & Grove, Inc.
National Gypsum Co.84H
Agency—Batten, Barton, Durstine & Osborn, Inc.
National Terrazzo & Mosaic Association82
Agency—Henry J. Kaufman & Associates
National Tube Division
(United States Steel Corporation)184
Agency—Batten, Barton, Durstine & Osborn, Inc.
Nelson Unit Ventilator Div., Herman
(American Air Filter Co.)43, 44, 45
Agency—Doe-Anderson Advertising Agency
New England Lime Co.46
Agency—Cooney & Connor
Nicholson & Co., W. H.99
Agency—The Atkin-Kynett Co.

Otis Elevator Company34
Agency—G. M. Basford Company
Owens-Corning Fiberglas Corp.
(Gen. Prod. Div.—Roofing)64, 65
Agency—McCann-Erickson, Inc.

Perlite Division
(Great Lakes Carbon Corp.)189
Agency—Darwin H. Clark Co.
Phelps-Dodge Copper Products Corp.83
Agency—Compton Advertising, Inc.
Pilkington Glass Limited200
Agency—Cockfield, Brown & Company Limited
Pittsburgh Corning Corporation70, 71
Agency—Ketchum, MacLeod & Grove, Inc.
Pittsburgh Plate Glass Co.90, 91, 174, 175, 195
Agency—Batten, Barton, Durstine & Osborn, Inc.
Powers Regulator Co.31
Agency—Symonds, Mackenzie & Co.

Republic Steel Corp.198, 199
Agency—Meldrum & Feresmith, Inc.
Revere Copper & Brass, Inc.62, 63
Agency—St. Georges & Keyes, Inc.
Reynolds Metals Co.177
Agency—Buchanan & Company, Inc.
Rixson Company, Oscar C.36, 37
Agency—Edwin E. Geiger
RLM Standards Institute, Inc.210
Agency—Van Auken, Ragland & Stevens
Roddis Plywood Corp.7
Agency—Klau-Van Pietersom-Dunlap, Inc.
Rowe Mfg. Co.163
Agency—Rogers & Smith

Sargent & Co.193
Agency—Marschalk & Pratt Co., Inc.,
Division of McCann-Erickson, Inc.
SelectTemp Division
(Iron Fireman Mfg. Co.)220
Agency—Joseph R. Gerber Co.
Simpson Logging Company224, 225
Agency—Manning Factors, Inc.
Sloan Valve Co.8
Agency—Reincker, Meyer & Finn, Inc.
Steelease Inc.102
Agency—Wesley Aves & Associates
Stran-Steel Corporation167
Agency—Campbell-Bowd Co.
Stylon Corp.50, 51
Agency—The Bresnick Co., Inc.
Summitville Tiles, Inc.214
Agency—Belden & Frenz, Inc.
Superior Combustion Industries53
Agency—Charles H. Davis
Swartwout Company, The190
Agency—Carr Liggett Advertising, Inc.

Taylor Co., The Halsey W.196
Agency—The Advertising Agency of William
Cohen
Tectum Division of the Peoples
Research & Manufacturing Co.38, 39
Agency—The Griswold-Eshleman Co.
Thermotank, Inc.
(Luminated Ceiling Division)188
Agency—Wolfe-Jickling-Conkey, Inc.
Tile Council of America85
Agency—Fuller & Smith & Ross, Inc.
Titus Mfg. Corp.80, 81
Agency—Weston-Barnett, Inc.
Trinity White Div.
(General Portland Cement Co.)20
Agency—Harris & Bond, Inc.
Tyler Refrigeration Corporation182
Agency—Jones & Taylor & Associates

Union Carbide & Carbon Corp.
(Bakelite Co.)201
Agency—J. M. Mathes, Inc.
Unit Structures, Inc.220
Agency—R. C. Breth, Inc.
United States Air Conditioning Corp.52A
Agency—Jaffe, Naughton, Rich Advertising
United States Gypsum Co.222
Agency—Fulton, Morrissey Company
United States Steel Corp.84D, E
Agency—Batten, Barton, Durstine & Osborn, Inc.
United States Steel Corporation
(National Tube Division)184
Agency—Batten, Barton, Durstine & Osborn, Inc.

Valley Metal Products Company165
Agency—Stevens, Inc.
Van Range Co., The John176
Agency—Associated Advertising Agency Inc.
Vogel-Peterson Co.227
Agency—Ross Llewellyn, Inc.
Vulcan Radiator Co.14
Agency—Patricelli & Davis

Walworth Company, The52F
Agency—G. M. Basford Co.
Wasco Products Co.95
Agency—Henry A. Loudon Advertising, Inc.
Washington Steel Corp.207
Agency—Cabbot & Coffman, Inc.
Waylite Co.84B
Agency—Harris & Bond, Inc.
Westinghouse Electric Corp.94, 95, 164
Agency—Fuller & Smith & Ross, Inc.
Westinghouse Electric Corp.54, 55
Agency—McCann-Erickson, Inc.
Weyerhaeuser Sales Co.219
Agency—The Alfred Colle Company
Will-Burt Co., The202
Agency—The Lee Donnelley Co.
Woodall Industries, Inc.19
Agency—Schnell & Associates
Worthington Corporation196F
Agency—Needham, Louis & Brorby, Inc.
Wright Mfg. Co.
(Div. of Mastic Tile Corporation of America)
Agency—S. R. Leon Company, Inc.

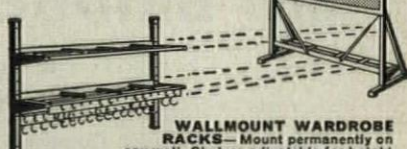
York Corporation
(Industrial div.)48, 49
Agency—G. M. Basford Co.
Yale & Towne Mfg. Co.196D, E
Agency—Ruthrauff & Ryan, Inc.



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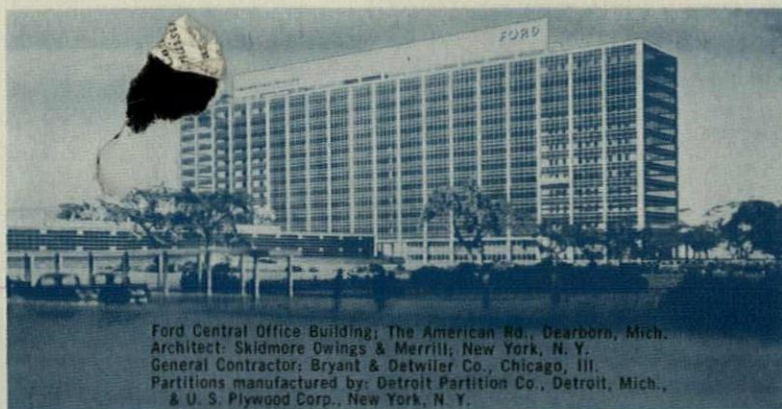


WALLMOUNT OVERSHOE RACKS—Mount on wall at floor level... extend 11 1/2" out from wall. Interlock to make rack of any length.
No. B-3 Wallmount Overshoe Rack 3'2" long
No. B-4 Wallmount Overshoe Rack 4'2" long
Checker This 5 ft. double faced rack holds 50 coats and hats. Goes wherever needed—on large casters.
Checkerette Ideal rack for choir robes or sacristy. Knocks down and stores like a folding chair.

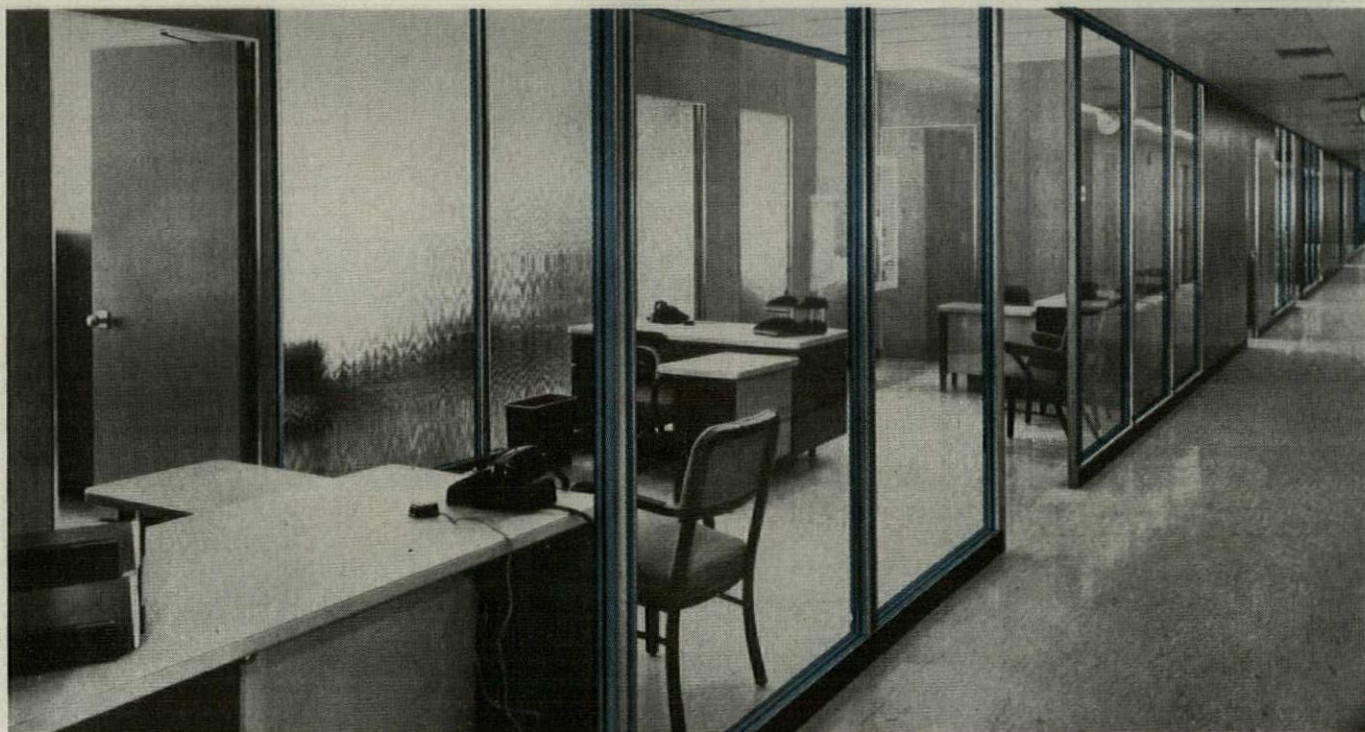


Write for Bulletin SL-48
VOGEL-PETERSON CO.
1127 West 37th Street • Chicago 9, Illinois

FORD'S OUT FRONT...



Ford Central Office Building, The American Rd., Dearborn, Mich.
Architect: Skidmore Owings & Merrill, New York, N. Y.
General Contractor: Bryant & Detwiler Co., Chicago, Ill.
Partitions manufactured by: Detroit Partition Co., Detroit, Mich.,
& U. S. Plywood Corp., New York, N. Y.



with **BRIDGEPORT ALUMINUM EXTRUSIONS!**...

in lightweight partitions for Ford's New Central Office Building

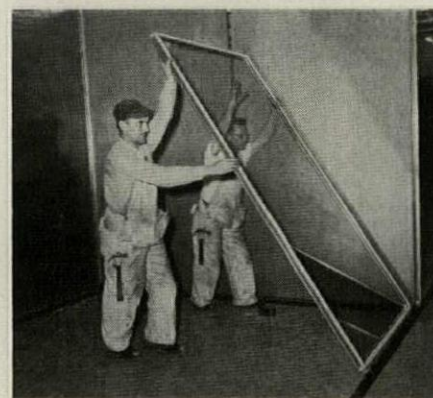
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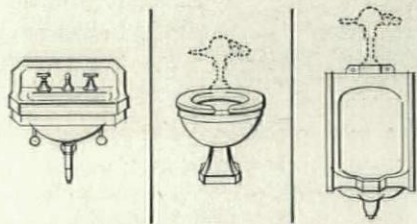
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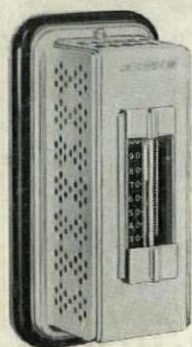
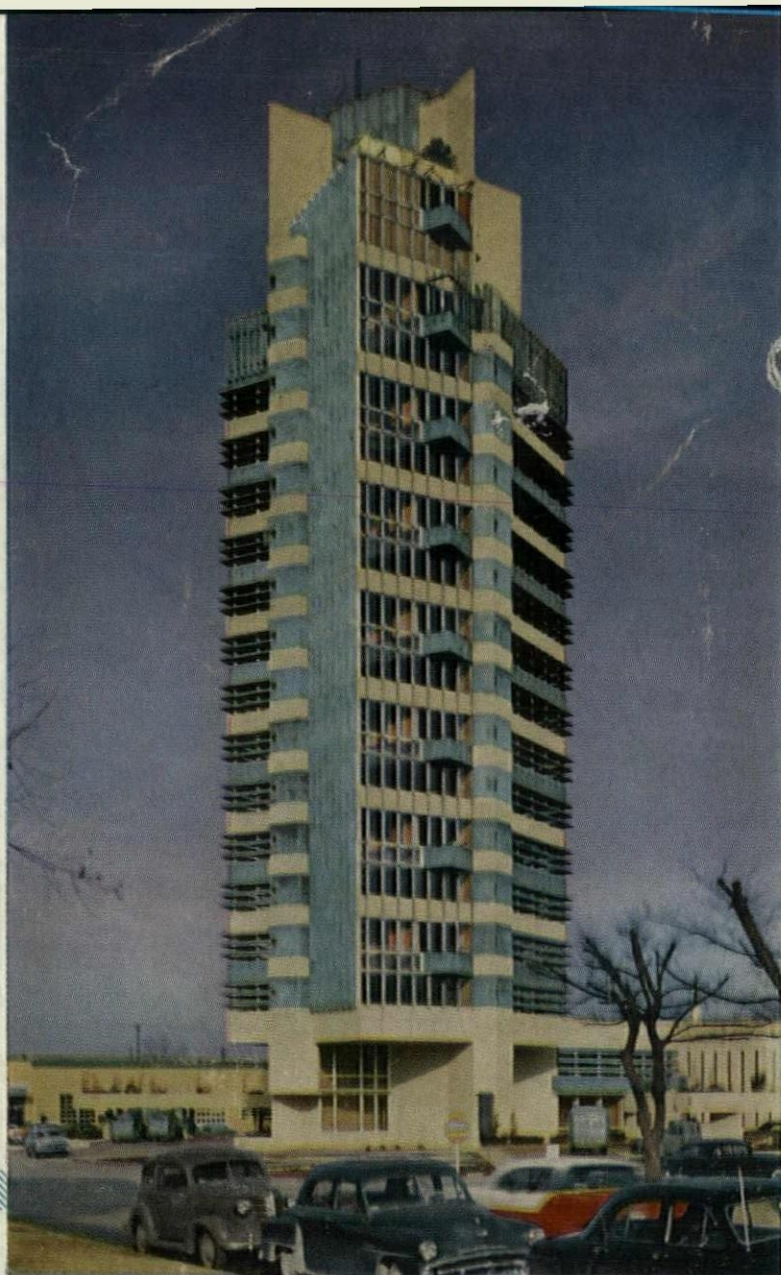
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