February 1955

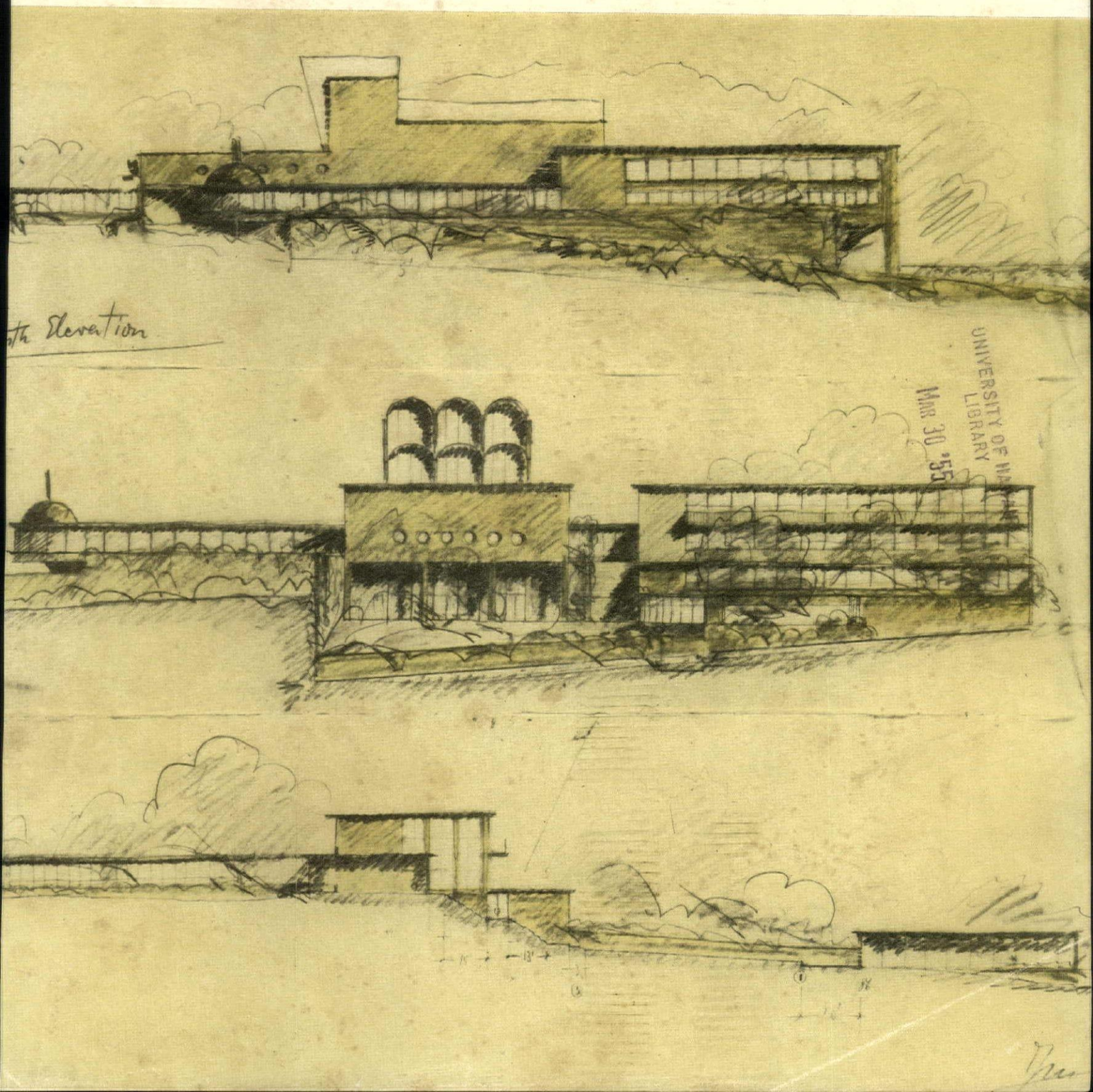
architectural FORUM

the magazine of building

Schools Solutions to similar problems—each with different emphasis: the view in Connecticut, the breeze in Texas and television in California (p. 134)

Small industrial plant Marcel Breuer makes the rural factory a handsome piece of promotion and an addition to the landscape (p. 144)

Eric Mendelsohn The last work of one of the twentieth century's great architects (below and p. 106)



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FEBRUARY 1955

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ideas from Blickman-Built food service installations

Architects: Holabird & Root & Burgee



MOBILE BANQUET TABLES PERMIT FLEXIBLE SERVICE
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eliminating waste motion
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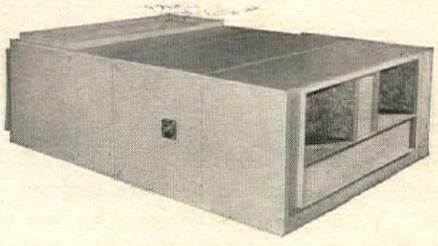
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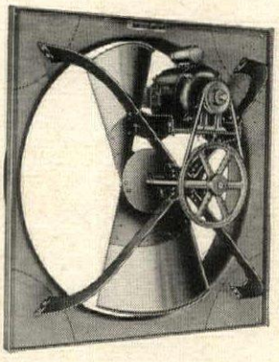
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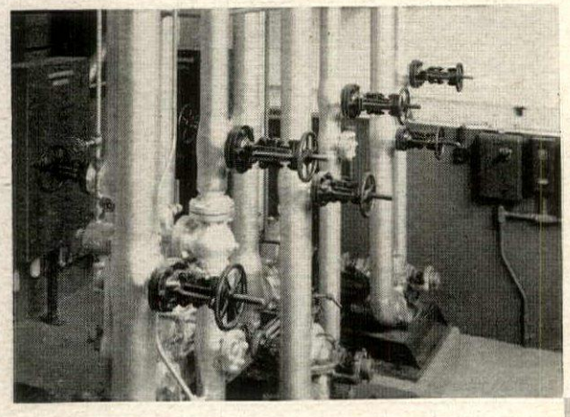
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President's economic program banks heavily on construction

Messages request funds for a Public Works Coordinator, hint more aid for local planning; school help plan due next



PROSPECTIVE WORKS COORDINATOR PYLE

President Eisenhower's three big annual messages to Congress last month—State-of-the-Union, Budget and Economic Report—all took special note of the importance of construction activity in buttressing national prosperity. His initial regular budget requests (see table), plus big new highway and school construction assistance programs he will submit to Congress later in the session, all pointed to substantially higher public works spending.

Presidential coordinator. In his first message the President said the nation's public works are "tremendous in scope . . . have a substantial influence on the growth of the country . . . in times of threatening economic contraction, they may become a valuable sustaining force." The Council of Economic Advisers, through its public works planning section, has made important advances in effecting coordination and cooperation with state and local governments, the President declared, and "in view of the success of these initial efforts, and to give more emphasis and continuity to this essential coordination, I shall request funds for the support of an office of Coordinator of Public Works in the executive office of the President."

In his Economic Report two weeks later the President repeated this recommendation, and described briefly how it was prompted by the studies last year by the "small unit" doing such work in the Economic Council:

"Among other activities, this unit cooperated with the Bureau of the Budget in making an inventory of the status of federal public works plans, project by project. It also initiated a survey of state and local plans for public works. . . . The first study disclosed that federal plans for sound projects are available in reasonable abundance for an accelerated public works program, if economic conditions should make this necessary. The second study disclosed that public works programming by states and localities is extensive, but that there is only a very small backlog of plans at drawing and design stages."

Greater local aid. With few exceptions, local governments have a hard enough time keeping up with their current construction needs, and do not prepare working plans for projects beyond their immediate requirements. What the administration appeared to have in mind was a sizable step-up in the present program for advance planning aid to localities. Now lodged in HHFA, this aid takes the form of interest-free loans for architectural and engineering work that will encourage communities to get a few jumps ahead in their public works planning.

Last year a $50 million appropriation was requested for these loans. But an authorization for only $10 million was granted, and an actual appropriation of only $1.5 million. The new budget requests the immediate appropriation of the remaining $8.5 million still authorized, and the Economic Report recommends an increased authorization.

Last year more than 250 local agencies asked HHFA how its advance-planning aid program worked. But the available funds were not adequate to support much activity, and only 42 formal applications materialized.

Pyle in pilot post. Early last month former Governor Howard Pyle of Arizona (defeated for re-election in November by Democrat Ernest McFarland) was reported at work in the White House familiarizing himself with the public works program in anticipation of being named as the first federal Coordinator of Public Works. While no such title could become official until necessary legislation was enacted, at month's end the President appointed Pyle (see cut) as a White House administrative assistant at a salary of $15,000 annually. The White House announcement said he would deal particularly with federal programs that affect the states, including highway and other grant-in-aid programs, as well as serving as a presidential liaison representative with federal departments and agencies.

One of the extra assignments reported as the responsibility of the prospective Public Works Coordinator; settling any construction disputes between federal agencies. Administration sources made it clear, however, that the coordinator would not be a top federal construction boss.

Regular budget little changed. Regular budget estimates for federal public works for the coming (1956) fiscal year totaled $4,182 million, just a shade higher than the current fiscal year's estimates, $4,177 million, and $212 million under actual outlays last year. In transmitting the new budget, the President noted that next year's higher military estimates "more than offset a decrease in expenditures for atomic energy facilities."

But accurate comparisons between budgets are often difficult, because of different procedures from year to year. For example, a

continued on p. 13

Civil Public Works funds requested

	(Millions of dollars—fiscal years) 1954-actual	1955-est.	1956-est.
Corps of Engineers	$399.8	$361.6	$397.0
Tennessee Valley Authority	299.3	281.7	79.9
Bureau of Reclamation	163.3	132.4	152.3
Saint Lawrence Seaway Development Corp.	....	6.0	21.6
Bureau of Public Roads	559.3	630.5	699.1
HHFA Low-rent public housing loans	525.6	454.2	482.6
HHFA Low-rent public housing loan repayments	a936.0	a539.4	a479.2
HHFA Defense housing and other (net)	30.8	8.9	3.4
Department of Health, Education and Welfare	179.7	201.5	162.8
Veterans Administration	54.3	40.0	56.3
Department of State	11.8	5.9	7.3
General Services Administration	9.7	21.8	24.6
* Total civil public works	1,591	1,914	1,889

National Security Public Works funds requested

Air Force	$1,711.7	$1,429.5	$1,782.3
Army	379.9	321.0	381.0
Navy	373.1	238.3	265.0
Atomic Energy Commission	1,085.3	832.3	431.0
Proposed legislation, AEC	....	....	80.0
* Total national security public works	2,803	2,263	2,293
*** GRAND TOTAL**	**4,394**	**4,177**	**4,182**

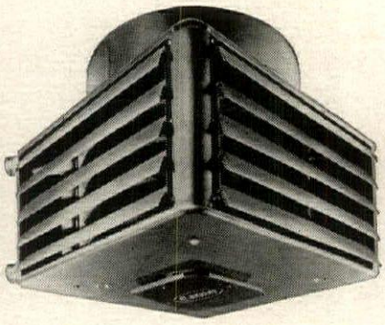
a Deduct.

** Minor components omitted, so totals exceed sums of parts.*

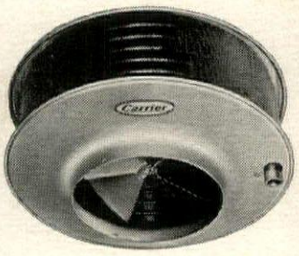
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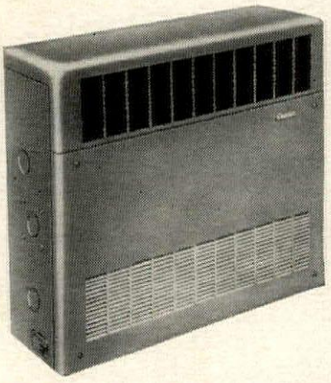
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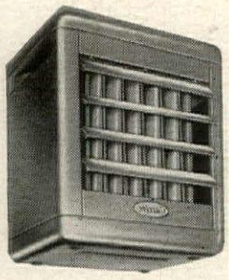
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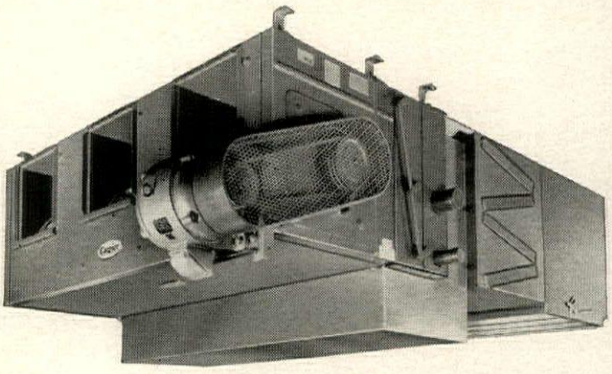
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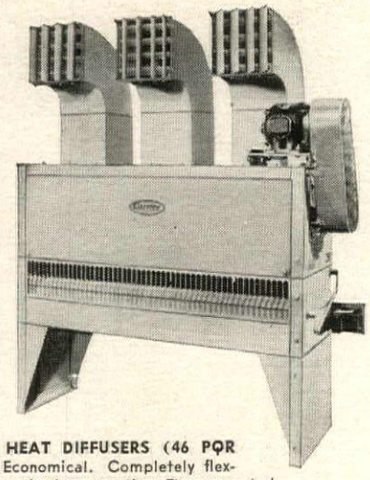
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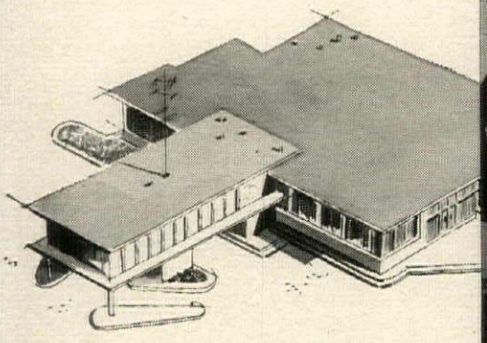
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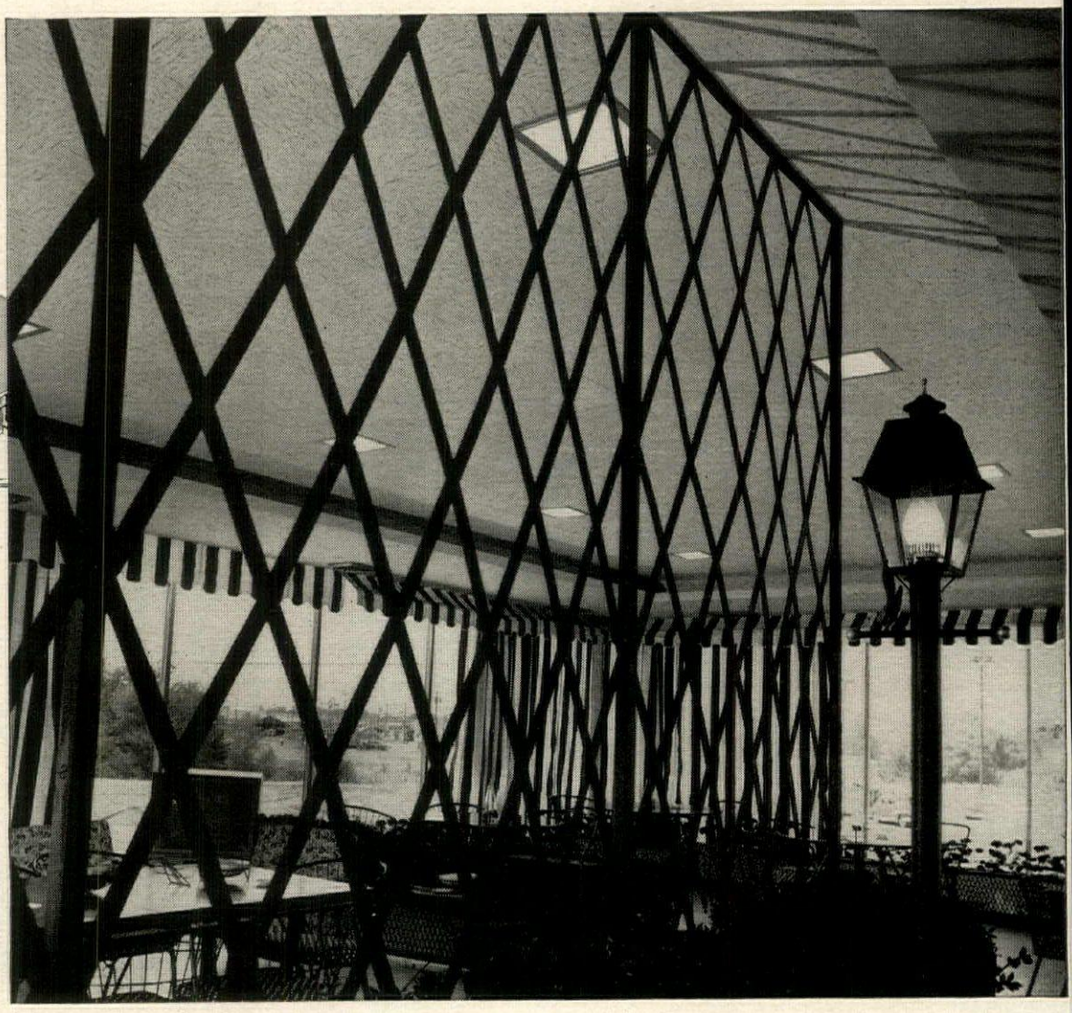
INDUSTRIAL
NATIONAL BANK
Dallas, Texas



Architect:
Alexander & Russell

General Contractor:
McFadden & Miller

Acoustical Contractor:
United Tile Company



The attractive ceiling of noise-deadening Travertone* contributes comfortable quiet to the gay atmosphere of the Boulevard Room. Casual as well as quiet, the room's Paris sidewalk café motif helps keep community meetings pleasantly informal.

* Trade-Mark

Bank's bold design relies on sound conditioning

A brand-new concept in bank design enables Dallas' Industrial National Bank to perform a double function in the community. To give this unique building more than just traditional and drive-in banking facilities, architects Alexander & Russell have included special areas to serve as civic meeting centers.

To prevent the noise potential of these community meetings from interfering with normal banking activities, the building has been fully sound conditioned with Armstrong acoustical materials.

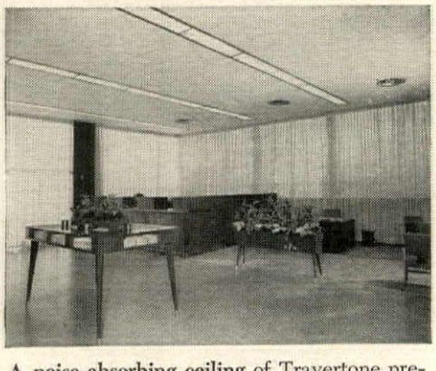
In the bank's Boulevard Room, where many civic meetings take place, a ceiling of Armstrong Travertone blends relaxing quiet with the informal surroundings. Travertone's high noise-muffling efficiency, smart looking fissured surface, and fire-safe mineral wool composition prompted the use of this material for the bank's main business areas, too.

The employees' lounge – which is also available for meetings—the vault area, and the drive-in tellers' cages are all sound conditioned with Armstrong Cushiontone. This perforated wood fiber tile is surprisingly low in cost, an ideal material for sound conditioning large areas economically. And Cushiontone's attractive white paint finish requires only the simplest upkeep to stay new looking for years.

Get full details on the entire Armstrong Line of acoustical materials from your Armstrong acoustical contractor. For the free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 4202 Rooney Street, Lancaster, Penna.



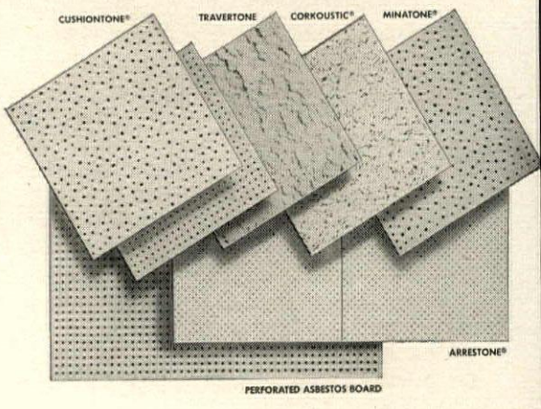
The exclusive Full Random pattern of perforations and the extra narrow bevels on each tile give this Cushiontone ceiling an up-to-date, monolithic appearance. Cushiontone's sound-muffling efficiency soaks up disturbing clatter and chatter in this employees' lounge.



A noise-absorbing ceiling of Travertone prevents reflecting sounds from hard-surfaced walls and floors in the main banking area from creating a serious noise problem. The resulting quiet atmosphere lends dignity to the bank's modern design.

Armstrong

ACOUSTICAL MATERIALS



major proportion of the new federal building program this year by the General Services Administration is to be financed under the lease-purchase plan just getting started. Obviously this device will generate construction activity entirely out of proportion to the funds provided for initial lease payments.

School aid uncertainties. Also missing in the budget is any allowance for federal school construction aid. Some observers said this indicated the President's special school message on Feb. 15 to recommend "positive, affirmative action now" will stop short of urging direct federal payments, instead will support some special financing device such as federal guarantees on local school bonds or purchase-lease construction.

Congress could adopt a direct assistance program on its own, however, and there is strong sentiment crystallizing on Capitol Hill behind bills that would make up to $500 million a year available to the states for school construction under some form of grant program. The biggest argument is over distribution methods. Some lawmakers favor a formula to give less affluent states a bigger proportion of the funds. This naturally is opposed by others from wealthier sections.

(For editorial on US school aid—p. 164.)

Private power firms given lures to build atom plants

After the Atomic Energy Act of 1954 opened the way for construction of private atom-electric plants by permitting private firms to own atomic reactors, the Atomic Energy Commission sat back and waited for proposals from many of the utility companies it knew wanted to get into the field. The rush of proposals did not come.

Reasons for the power companies' reticence were mostly economic: atomic power was still quite expensive compared to steam and falling water for powering electrical plants; atomic reactor research was still in its infancy, and few electrical companies felt they could spend money for expensive research to develop reactors which might soon become obsolete as technology advanced. Moreover, they were not going to go into the atom-electric business until AEC told them how much it would pay for their plutonium by-product, used in making atomic bombs, and how much AEC would charge them for nuclear fuels to run their plants.

Last month AEC dangled a cluster of lures before private industry positive to stimulate a start on private power reactors: it set prices for nuclear fuels and promised private producers a seven-year guaranteed plutonium by-product price (both subject to big changes as the Bureau of Labor Statistics' wholesale price index fluctuates). The commission also will lend private companies the fissionables to run plants, charging only for the small fraction of material used up in making electricity. AEC will also do some types of research for power companies in its own laboratories, and in some cases will pay private firms for the technical and economic information they develop.

Then AEC set April 1 as a deadline date for proposals and again sat back to wait.

Six big lenders plan increased loans for commercial and industrial building

As construction drove into another immense year, the forecast for mortgage financing was "continued fair" with a chance of light, scattered showers. Supporting this view were: 1) answers FORUM received last month in a survey of mortgage officials of the nation's ten largest life insurance companies, and 2) the broad implications of the extraordinary FHA-VA mortgage "warehousing" deal announced by Prudential Insurance Co., the country's largest realty investor (passed the $5 billion mark in December).

More funds than in 1954. Six of the "big ten" lenders told FORUM they intend or hope to make a greater volume of nonresidential mortgage loans this year than in 1954 if their funds permit. Of two that expect about the same volume, one said it "may" boost its nonresidential lending if the "opportunity" arises. One company was noncommittal. Only one, one of the smallest on the list, definitely expected a decline, because its total available investment funds may be lower.

None of the "big ten" expected to divert commercial or industrial mortgage funds to increase home-ownership lending. Mortgage Vice President Murray Waters of Aetna Life thought his company would increase its lending in both fields, but it "would rather have the large loans—the yield is better."

Not one of the top loan officials surveyed foresaw his company changing its interest rates or loan-to-value ratios on commercial or industrial mortgages. As a rule they saw the market remaining "rather steady," although several suggested the possibility it may stiffen slightly later in the year.

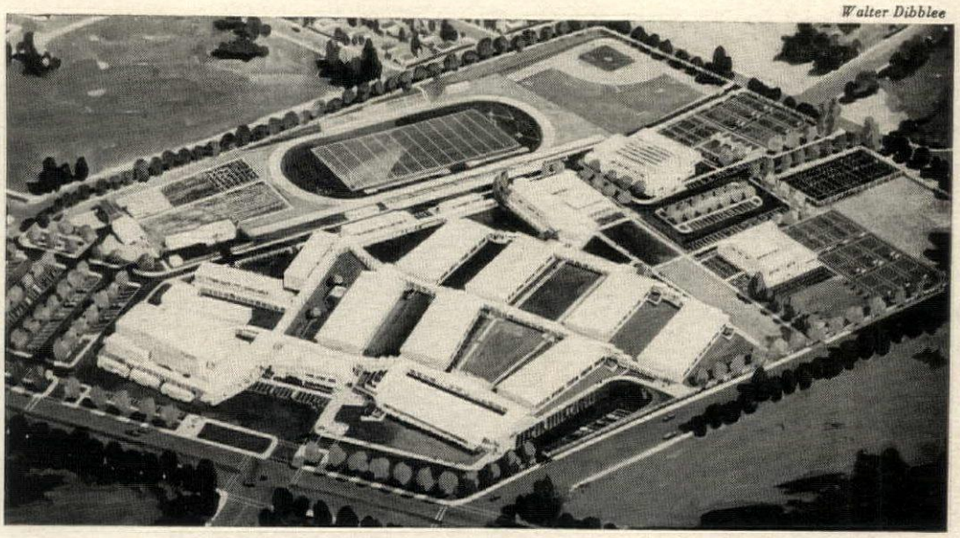
By and large, their commercial and industrial property standards are not likely to be changed—except for some increased selectivity at Mutual Life of New York and Massachusetts Mutual. Said New York Mutual Vice President J. P. Traynor: "We're going to be more cautious on apartment-house loans in those communities where many single-family houses are being built." Said Massachusetts Mutual Vice President Bert Mount: "We are getting stricter all the time. We are most interested in one-story buildings with adequate loading docks and switch track facilities. . . . We will be very sure the borrower's tenants will be able to pay their rent no matter what economic conditions may be."

Coals to Newcastle. It would be amazing for the huge, opulent Prudential (each year getting closer to displacing Metropolitan as the nation's largest insurance company) to become a "borrower." But that is what will happen in effect under the remarkable "warehouse" deal for up to $350 million of VA and FHA mortgages (except project loans) Prudential has worked out with Irving Trust of New York and about 160 other cooperating commercial banks and trust companies. Prudential will make and close all loans in its own name, but then sell them to the other institutions under firm commitments to repurchase all by June 30, '56. Prudential, however, will clear a profit on each mortgage while warehoused!

In 1953 many "warehouse" deals were made to assist builder-borrowers until they could find permanent purchasers for their mortgages. But the Prudential deal—regarded as the biggest and most widespread—is exactly the opposite operation: this is warehousing so the *lender* can make its loans faster than its regular rate of income inflow would allow. In essence, basically conservative Prudential was proclaiming its solid faith in FHA and VA loans in particular, in the rest of the real estate and building

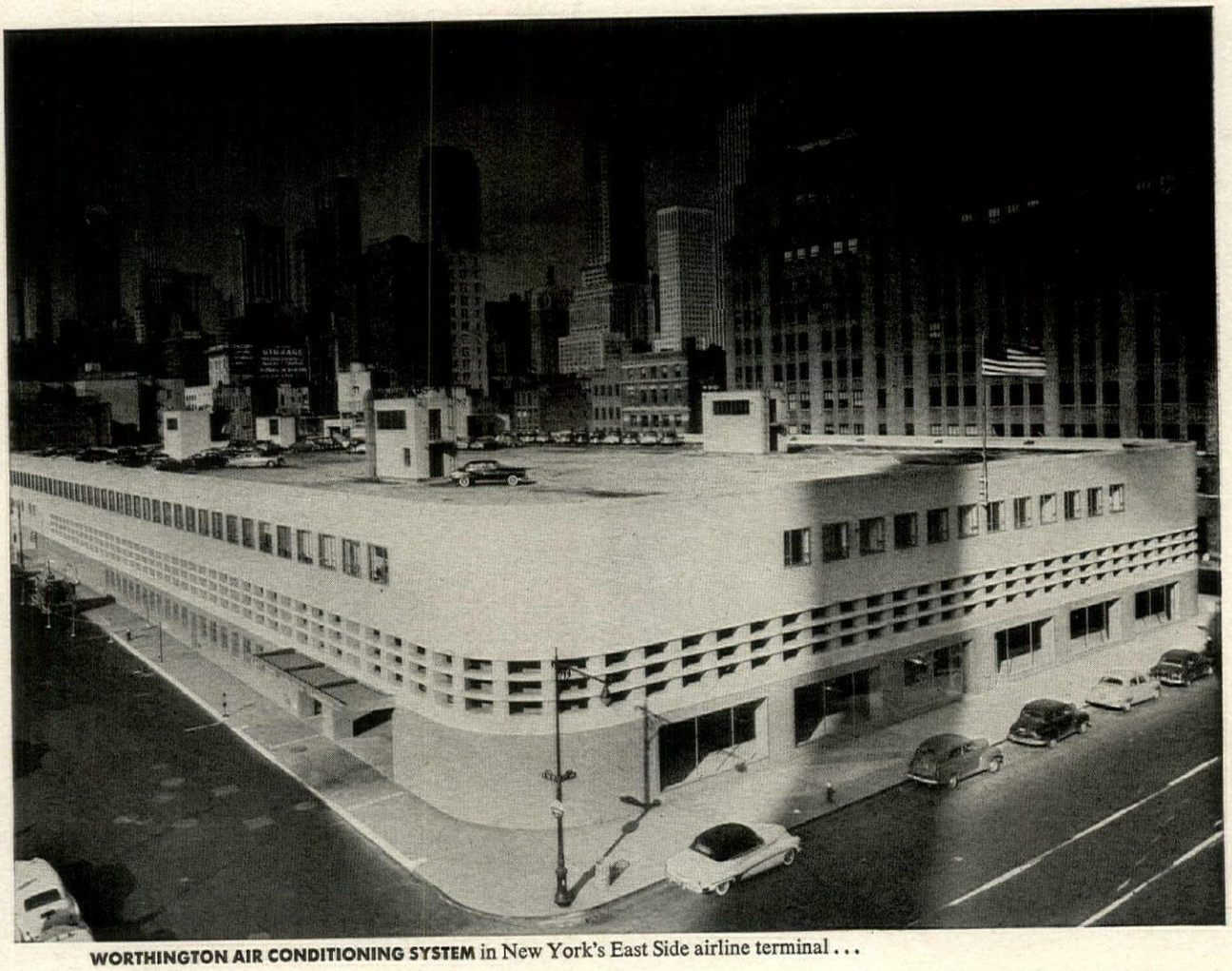
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Walter Dibblee



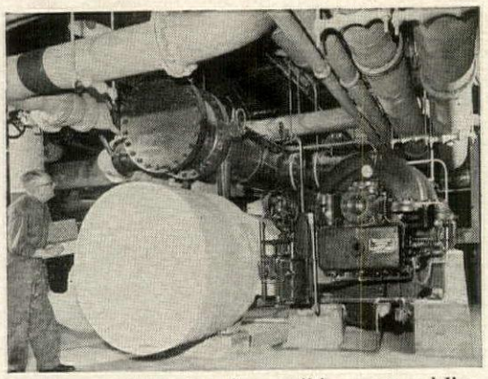
Construction begun on 27-building Los Angeles high school

Construction was under way last month on a 27-building high school plant in Los Angeles, representing the largest contract, $4.2 million, in the history of that city's school system. Designed by Los Angeles Architect A. C. Zimmerman, the Westchester High School is being built by J. C. Boespflug Construction Co., Seattle contractor, on a 37.6-acre site. Auditorium, library, cafeteria, shops and gymnasium are of reinforced concrete; others wood-framed. Most are linked by covered walks.



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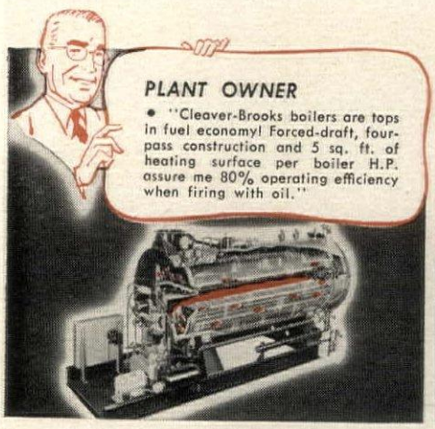
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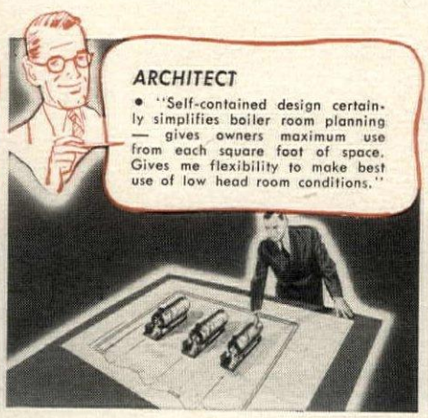
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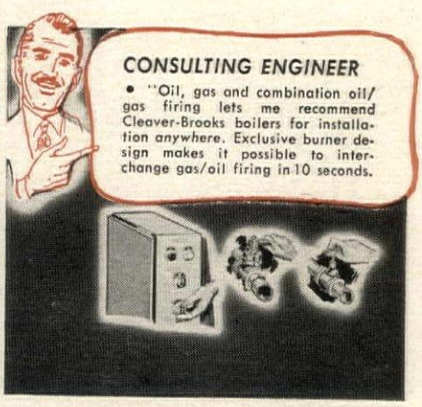
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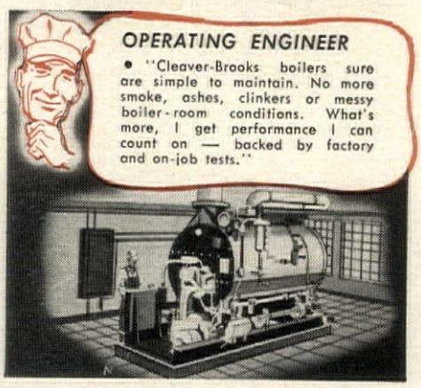
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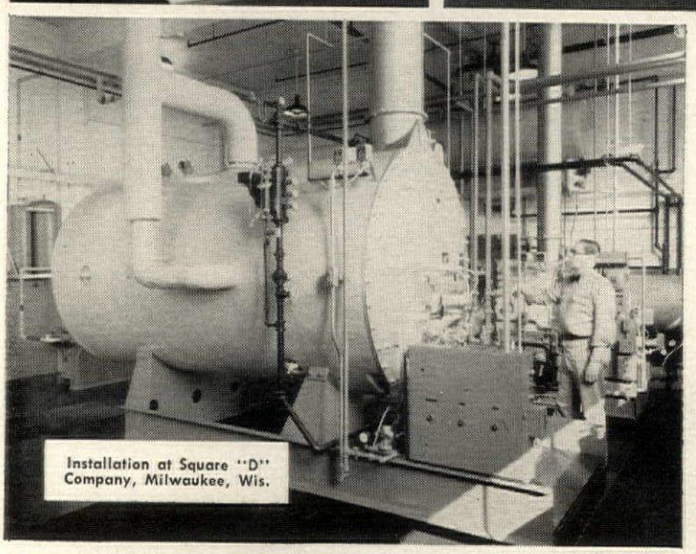
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market and the entire economy in general, and it was borrowing money (which might average well over $1.3 million every Monday-to-Friday business day, or almost $1 million every day including Sundays) so it could get a bigger share of this year's investments than its normal big income allowed.

Importance for others. On the basis of a Prudential official's statement that its net volume of FHA and VA lending this year will not change much from 1954, the significance of this warehouse deal for nonresidential construction interests is this: to the extent it uses this "warehouse" line of credit, Prudential will have that much more cash at its disposal this year for any other types of mortgage loans or other investments. And to whatever extra extent Prudential increases its gross investments through this system, it will reduce the number of investments available to other lenders, and thus also tend to make the entire long-term money market that much easier.

Of course, if FHA or VA interest rates are lowered later this year, Prudential would be ahead on every mortgage it had warehoused. But for the present experts saw only remote prospects for lower FHA or VA face rates. More likely: stiffer prices.

One other big investor was understood to be eyeing the FHA project mortgage market again: New York City's municipal pension fund. In 1953 this fund bought six big FHA mortgages because of their attractive yield. Now it is looking at such investment sources again, for Comptroller Lawrence E. Gerosa, Bronx building contractor, has reinstituted the practice of selling the city's bonds publicly, instead of having the city pension and sinking funds buy them all directly.

Cole asks second $500 million for urban renewal grants, easier public housing law

Congress last month was asked to grease and adjust the federal housing machinery to: 1) get the mammoth urban renewal program moving faster and smoother, 2) rescue the crippled public housing program from total strangulation, and 3) poke further into the disinterred records of the FHA Sec. 608 multifamily housing program.

In accord with presidential recommendations, HHFAdministrator Albert M. Cole told the House and Senate banking and currency committees he would soon submit formal requests for legislative changes to:

- Boost total capital grant authorizations from $500 million to $1 billion under the new, expanded urban renewal program (formerly "urban redevelopment"). Almost all of the $500 million for this purpose provided by the Housing Act of 1949 will have been committed by the end of the current fiscal year, June 30.
- Increase FHA's total mortgage insurance authorization by $5 billion to meet estimated needs from next month through June '56.
- Clarify the $5 million limit for any one multifamily project insured by FHA. Cole took note of criticism during the FHA probes last summer of large projects that were covered by a series of mortgages, instead of a single lien. There are cases where a series of contiguous projects would be necessary to carry out a large slum clearance and redevelopment program, he said, and on expensive urban renewal land in the center of large cities "the present $5 million limitation is inadequate if applied to neighboring structures, and may even be inadequate in some cases if applied to a single multistory fireproof building."
- Modification of limitations in the 1954 Housing Act that "have proved too restrictive to permit carrying out the new public housing" this law authorized—a total of only 35,000 units. Cole said the limitations were sound in purpose, but their "technical legal effect . . . . as applied to existing circumstances" too inhibiting to get these 35,000 units built. He already had issued special "liberal" interpretations of the law to help get at least some of these units built (AF, Jan. '55).

What did Ike mean? Cole also repeated the recommendation in President Eisenhower's state-of-the-union message advocating approval for another 35,000 public housing units in each of the next two fiscal years. What puzzled some observers, however, was whether the President's text was meant to indicate his belief all new federal public housing should be terminated after then.

In language both pro and antipublic housers construed as supporting their positions, Eisenhower said: "As part of our program to provide decent, safe and sanitary housing for low-income families, we must carry forward the housing program authorized during the 83rd Congress. We must also authorize a firm program of 35,000 additional public housing units in each of the next two fiscal years. This program will meet the most pressing obligations of the federal government into the 1958 fiscal year. By that time the private building industry, aided by the Housing Act of 1954, will have had the opportunity to assume its full role in providing adequate housing for low-income families."

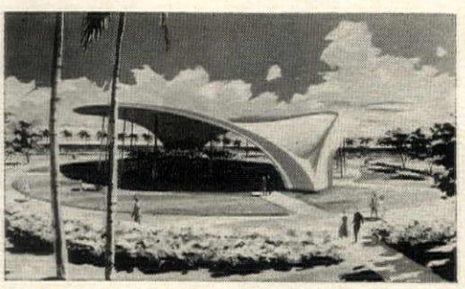
Public housers professed to be pleased that the President called for a "firm" program. They felt he was asking Congress obliquely to soften or scrap the 1954 restrictions such as limiting new projects to displacees from slum clearance and other public improvements, a feeling greatly strengthened by Cole's request, two weeks later, for easier ground rules. They also contended that in hinting a two-year extension was enough, the President was putting private industry on notice that if it could not take over after that, it would have to expect more public housing than ever.

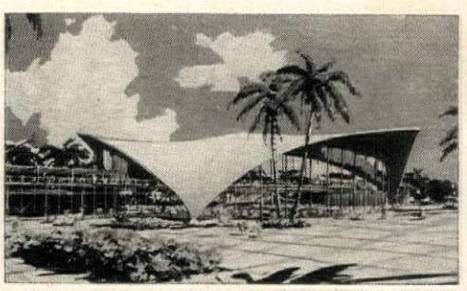
But homebuilding industry pundits challenged such interpretation of the President's remarks. All the President said, they argued, was that after the new aids to private housing take hold there would be no need for any more public housing whatsoever.

More 608 digging. To cover the expense of booming FHA business, a $5.3 million deficiency appropriation was being sped through Congress, but along with it $125,000 that would keep fresh the memory of past mistakes. This sum was requested "to review certain multifamily housing . . . prevent dissipation of assets . . . recover any illegal windfall profits." It was understood it would be used in part to scrutinize for scullduggery every one of the 7,000-odd Sec. 608 projects

continued on p. 21







Six-mile beach will be peppered with airy pleasure structures

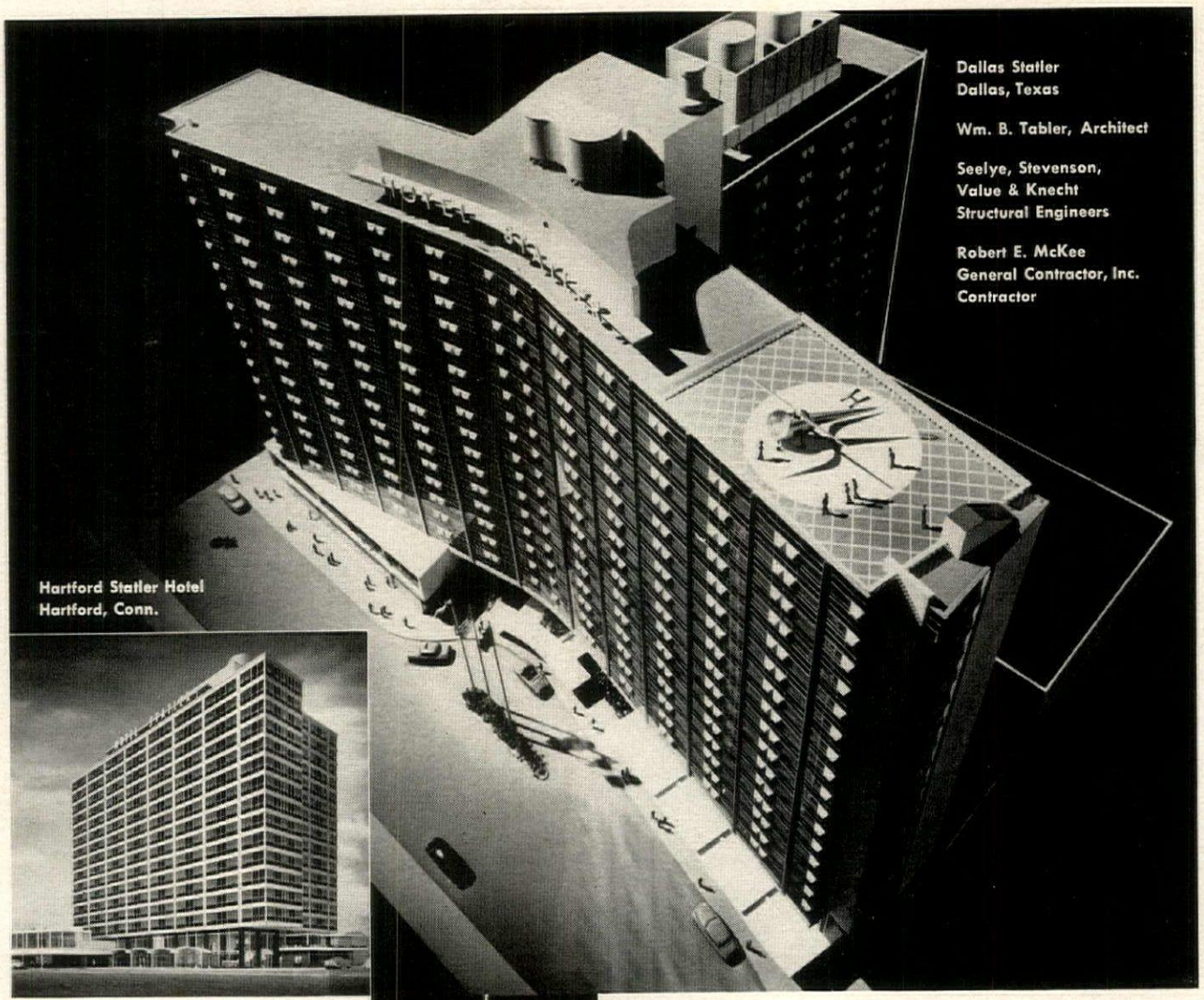
Every November for the next few years Long Beach, Calif. voters can expect to find on their ballots piecemeal referenda which should eventually give the city a $35 million, 6-mi. modern beach development. Included in $15 million of construction sponsors hope to have completed by 1960; a 5-mi. esplanade, two major plazas, a brace of still-water swimming pools, a bandstand, ballroom, restaurant, supper club, two shopping centers, cafes, fishing piers and numerous bathhouses and athletic facilities. Pleasant preliminary plans prepared for the city at a cost of $30,000 by F. Elwood Allen, Bennington, Vt., park planner, and New York Architects Antonin Raymond and L. L. Rado, are (left to right) ballroom, bandshell and supper club. Long Beach gets about $3.7 million a year from oil companies drilling and pumping in tidelands which the city owns; beach program advocates are optimistic about obtaining city council and citizenry approval for using some of this money to finance the development.

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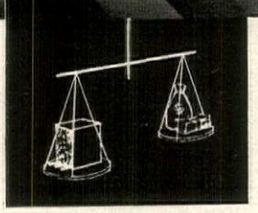
Dallas Statler
Dallas, Texas

Wm. B. Tabler, Architect

Seelye, Stevenson, Value & Knecht
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Hartford Statler Hotel
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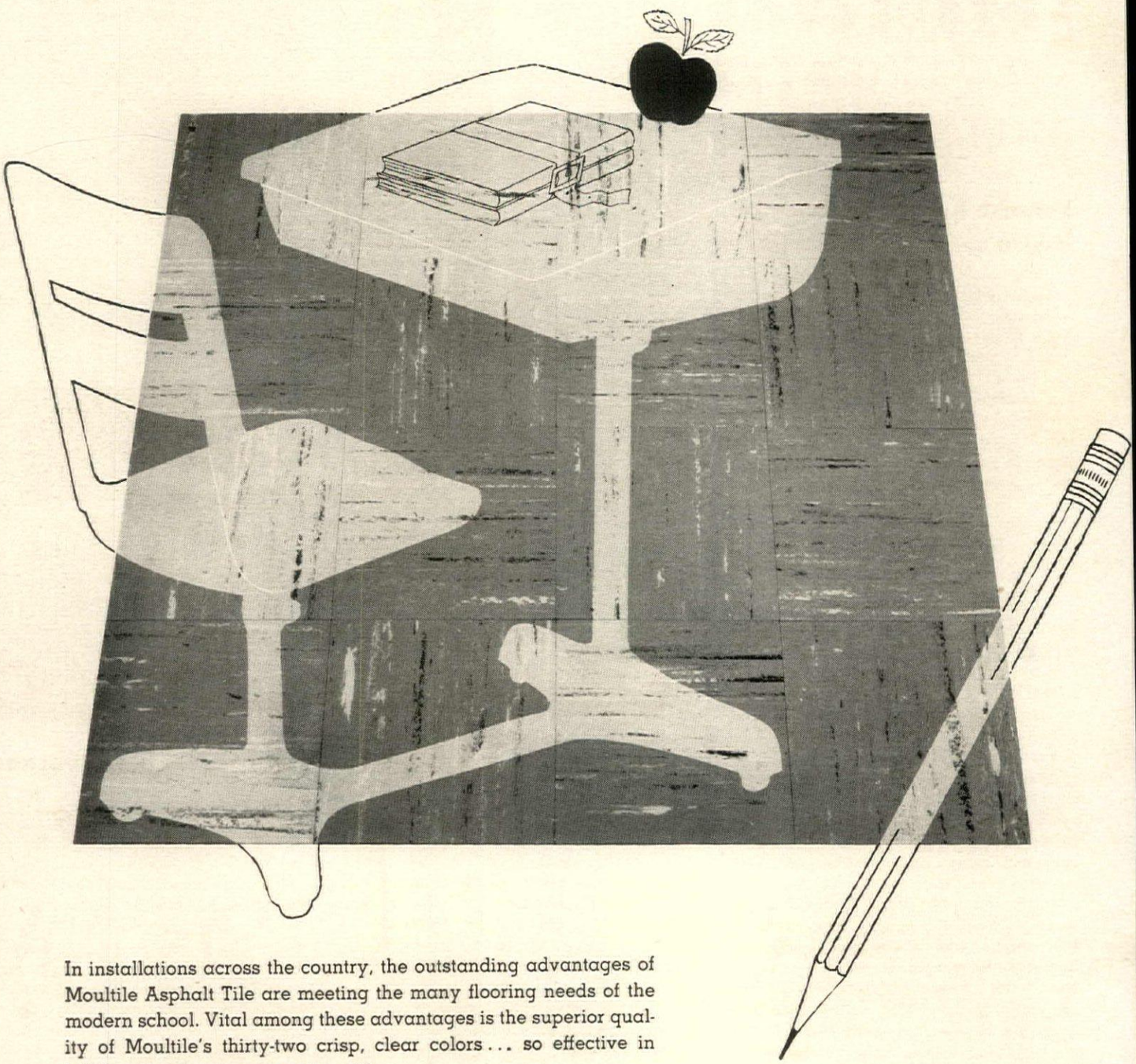
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not already put under the microscope.

Word also leaked out, for instance, that FHA was getting ready to blacklist all 4,000 Sec. 608 builders who did not answer its celebrated June questionnaire on profits—windfall or otherwise. This threat arose, ironically enough, while FHA simultaneously was attempting to have the Justice Dept. drop about 25 names from its existing roster of 308 stigmatized builders and lenders. But temporarily the Justice Dept. balked, apparently wanted to make doubly sure first that its OK for de-listing would not give anyone what amounted to a "seal of approval" on which he might be able to capitalize.

It was a simple operation to blacklist any doubtful character, FHA discovered, but an infinitely harder process to get even an innocent builder back in the clear again. Temporarily it held up its blanket blacklisting plan.

Spanish bases overaudited, House committee charges

Military construction veterans were wondering last month if they could ever satisfy Congress. Two years ago Air Force and Army Engineers were lambasted for not watching pennies as they built five North African air bases on a "crash" basis. This year the Navy was under fire from virtually the opposite direction. The Bureau of Yards and Docks was being so careful about construction expenditures for the new (non-crash) Spanish bases that a subcommittee of the House Armed Services Committee called for an investigation of "bureaucratic intermeddling" and "red tape" which the subcommittee implied was delaying the program.

The subcommittee's specific charge: the Navy was interposing a cost-accounting unit between the officer in charge of construction for BuDocks and the prime contractors.

Rep. William E. Hess (R,Ohio), chairman of the subcommittee, which returned from a junket to Spain last December, waxed indignant in his report. He said the new procedures were delaying signing of contracts between BuDocks and the contractors, engineers and architects, who have been working feeless under letters of intent. The way Hess saw things, he predicted that bookkeepers would take over construction.

But Hess was not seeing things quite the way they were, according to Navy construction officers and civilians on the job in Spain. "Quite a shock. Inaccurate!" was one Navy man's comment. There was general agreement in Spain that Hess was off base in giving the impression that the Navy's new auditing system—imposed above the BuDock's project officer's level on contractors' vouchers that have already been paid, not between the project officer and the contractor, as Hess charged — was slowing down construction. True, there had been delay in signing prime contracts, but the joint venture contractors (Brown-Raymond-Walsh) and the architects and engineers have not dragged their feet, Navy brass insisted. Cause of delay was a dispute between BuDocks and the Navy controller's office, which wanted to put into effect a new independent auditing system to postaudit BuDocks and contractors' expenditures. The controller's office won; a token team of cost inspectors is operating innocuously in Spain, and prime contracts have been signed.

Said J. J. Collins, spokesman for the contractors' combine: "When you're signing a two to three hundred million dollar contract, it takes time to iron out normal problems. I can say there were no abnormal delays. . . . There was never a physical delay."

John Stofko, project manager for the architects and engineers, who have joint-ventured into Spain as AESB (Architects-Engineers Spanish Bases), said the new auditing system "does not help us, but does not harm us."

Current status of the Spanish bases program: Spanish subcontractors are at work grading and leveling two bases. Plans for another big base and for a 570-mi. pipe line to carry aviation gasoline and lubricants from Cadiz to Zaragoza have been finished. First phase of construction (1954-56) will cost about $40.5 million for air bases, $10 million for naval installations. Weather conditions have caused minor delays on the two bases under construction. Navy officials and civilians agree that relations with the Spaniards have been excellent.

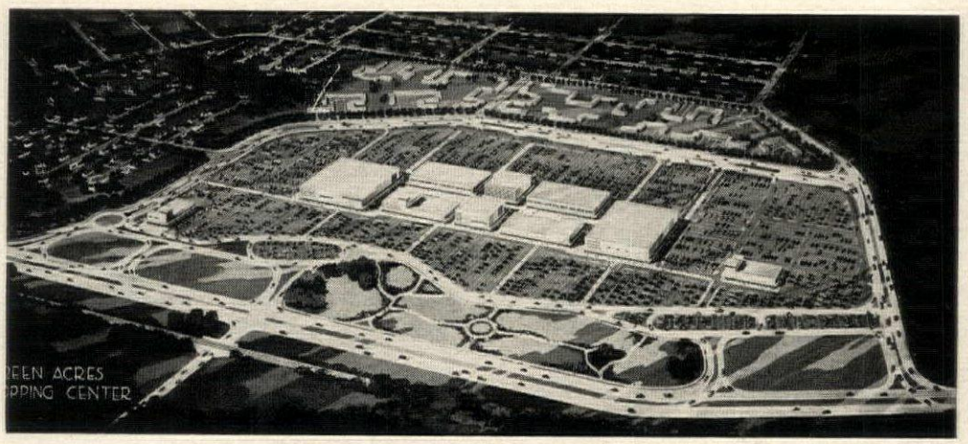
NYC leading as engineers consider new headquarters

For a decade the major engineering societies of the nation have known they must find a new home; the old stone building on 39th St. in New York, built in 1904 with a $1.4 million gift from Andrew Carnegie, simply is not big enough to handle the daily business—let alone the mammoth conventions—of the four big groups headquartered there.

Other cities—Chicago, Philadelphia, St. Louis, Pittsburgh, Washington—and their partisans within the engineering societies, have offered inducements varying from words of welcome to a Pittsburgh Development Corp. offer of $1.5 million in cash to be provided by such firms as US Steel and Westinghouse.

United Engineering Trustees, Inc., representing the four major tenants of the building (American Society of Civil Engineers, American Institute of Electrical Engineers, American Society of Mechanical Engineers, and American Institute of Mining and Metallurgical Engineers) and a fifth big group (American Institute of Chemical Engineers)

continued on p. 25



New shopping centers show two development approaches

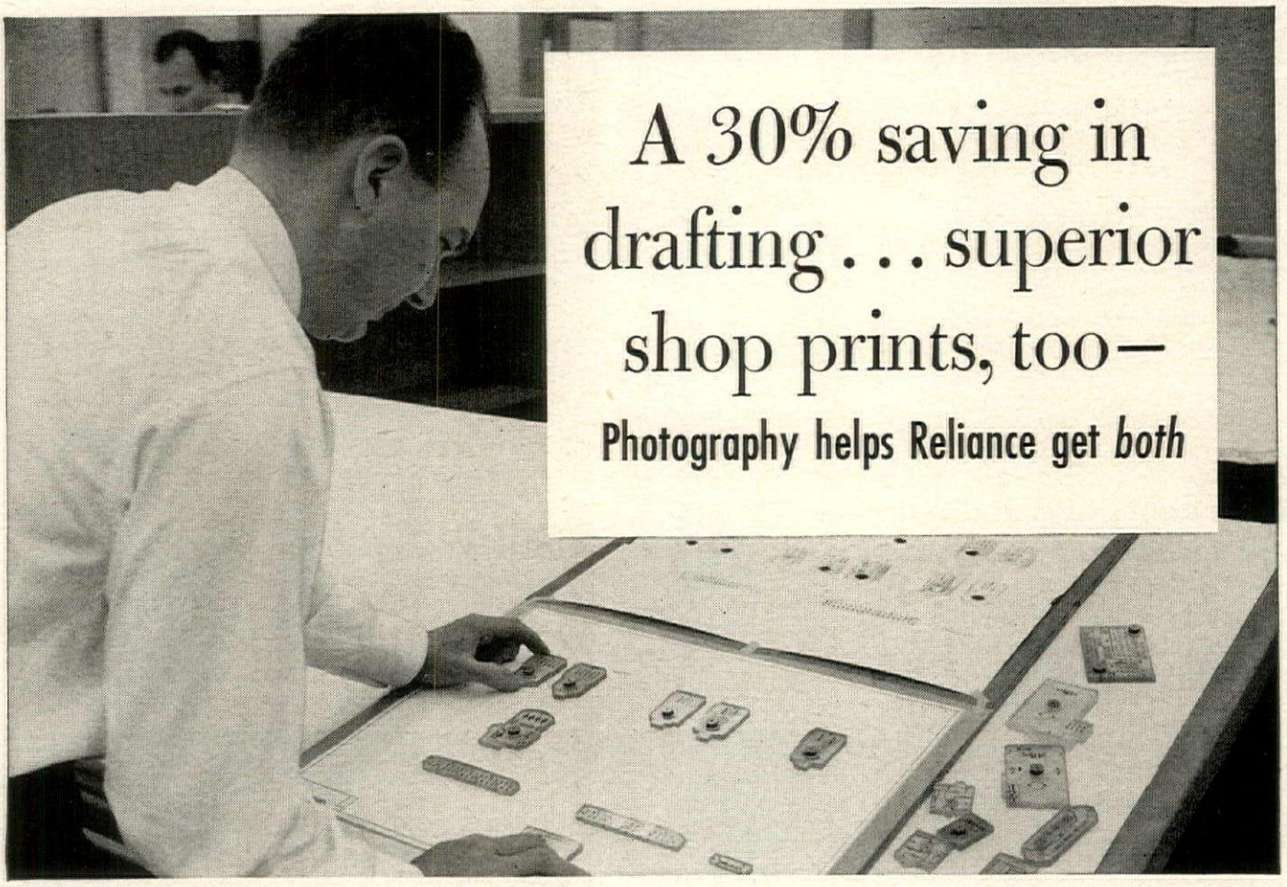
Two different approaches to the development of suburban shopping centers were evident in plans that made news last month.

The Green Acres Shopping Center at Valley Stream, Long Island (see cut) followed a conventional pattern: the developer, the Chanin Organization, New York architects, engineers and builders induced Gimbel Bros. and a second department store to establish the two big units that will form the nucleus of an 80-store, $30-million retail complex. Another big tenant: the biggest J. C. Penney suburban store anywhere. Architect Irwin S. Chanin is designing this center, including the separate Gimbel and Penney stores. It will adjoin a group of 800 single-family houses already built by the Chanin organization as part of a vast residential project.

In a different and much more ambitious scheme Allied Stores Corp. was taking on the role of promoter and principal occupant in the development of a string of seven giant regional retail hives to cost about $237.6 million. Allied already operates 72 downtown stores and three suburban branches nationwide. Getting into the shopping-center business on a Gargantuan scale, Allied will pay for some of the centers, will get local sponsors to finance the rest.

John Graham & Co., of Seattle, designers of the chain's pioneer Northgate Center in Seattle, will be architect for all seven new centers, at Paramus, N.J.; Peabody Mass.; Levittown, Pa.; Houston; Cincinnati; Minneapolis; and somewhere on Long Island.

Allied is not putting all its eggs in the shopping center basket. It holds that downtown shopping is far from dead and is therefore spending $20 million expanding and modernizing its city stores. Allied also holds that there are not as many market areas that can support big regional centers as many previously supposed. Only 20-25 metropolitan areas in the US can support shopping centers under major department store leadership, said Allied Chairman B. Earl Puckett. Commenting on its little center at Rochester, Minn. (175,000 sq. ft. for all stores), he added: "Going into a community of this size was a pilot operation. According to our present thinking, it will not be repeated."



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At the Reliance Electric & Engineering Co., Cleveland, Ohio, the use of photographic templates and Kodagraph Autopositive Paper has helped to lower drafting-room costs by at least 30%, besides assuring highly legible shop prints day in and day out.

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After this drawing has been approved, he prints the templates on Kodagraph Autopositive Paper, using a printing frame. Simple photographic processing—under normal roomlight—produces a positive print of the layout directly. All he has to do now is add the hook-up lines, and another drawing is ready for Reliance's file of photo-lasting Autopositive "originals." *Another saving can be chalked up!*

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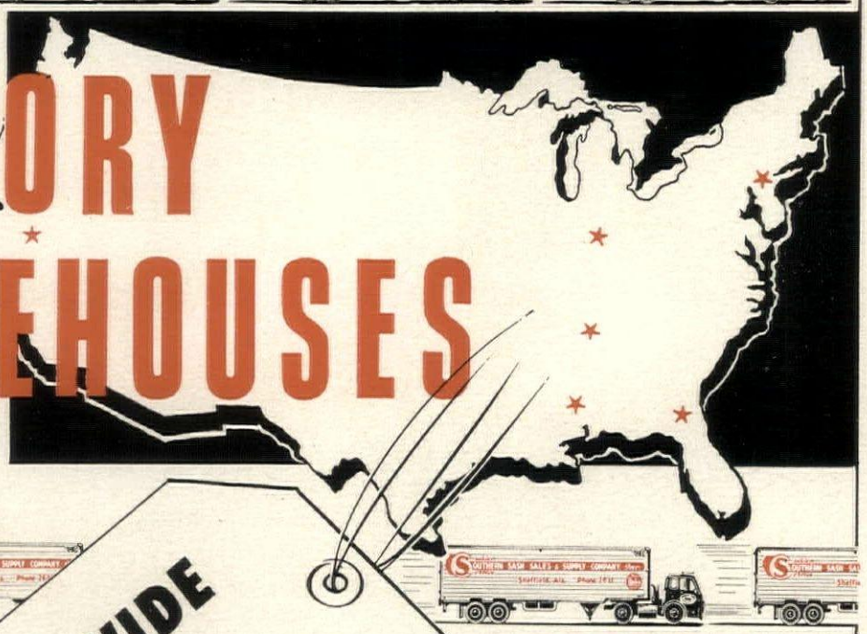
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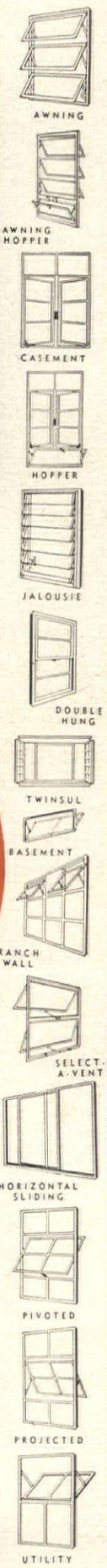
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that wants to move in with the others, checked the invitations. Their recommendation: stay in New York. (UET's decision carried a lot of weight, but it still needed approval by the five societies.)

Three proposed sites in New York proved impractical for one reason or another. For example, a plan to put the headquarters in Columbia University's proposed engineering center fell through when Columbia failed to offer a free site and part or all of a library. But last month a fourth plan, which emerged last spring, when many of the engineers were beginning to feel that New York did not care whether they stayed or not, was rapidly gaining support. The Triborough Bridge and Tunnel Authority, now building the New York Coliseum at Columbus Circle, offered the engineers 60,000 sq. ft. of land on an adjacent redevelopment site at 60th St. and Columbus Ave. Cost: about $430,000.

The societies already have promises for the money from a group of industries whose spokesman is Ralph Cordiner, president of General Electric Co. Preliminary plans for a $6 million headquarters at this site also have been made by Shreve, Lamb & Harmon, New York architects.

As presidents of the five societies were scheduled to meet early this month to decide whether New York would keep the engineers, and the $25 million in annual business they account for, the Coliseum Plan, as it was to be called, seemed to have the inside track and to be about to cross the finish line.

SIDELIGHTS

Surety bond guide

Lack of uniformity in state laws on surety bonding for contractors performing public work, and lack of a centralized source of information about them, have been a nuisance for builders and contractors for years. Now a directory of them has been issued: a 90-page "Study on Bond Protection for the Supplier in the Construction Industry," compiled by Wayne L. Shaffer of the Pittsburgh–Des Moines Steel Co., Santa Clara, Calif., and published by the Credit Research Foundation, N.Y. This gives a detailed state-by-state summary of such laws as they pertain to both public and private work, requisites of the bonds, rights of action and procedure under them, and pertinent court decisions. Is this bonding needed?—See comment of Banker Guy C. Kiddoo, p. 32.

Producers diversify—expand

Diversification and expansion plans were announced by three building materials producers last month: Ruberoid Co., having bought Ebsary Gypsum Co. last summer, reported plans for making gypsum products one of its major lines and for building a new asphalt plant in the Los Angeles area. . . . American Brass Co., an Anaconda subsidiary, will build an integrated aluminum mill near Terre Haute, Ind. with an eventual annual output of 60,000 tons. . . . Bird & Son, Inc., roofing producers, has started operating a new $2.5 million roofing plant in Charleston, S.C., which boasts the longest roofing machine in the world.

Solving city ills: New York prepares plans for $600 million new bridges, highways

In December New York's Regional Plan Assn. took a studied look ahead and saw the metropolitan area's population increasing by more than 4 million in the next 20 years.

To cope with such tremendous growth, more than 28%, it proclaimed the need of adequate area-wide planning to prevent "further duplication of urban disorder and congestion." Discussing some of the central city problems that would have to be faced, Executive Vice President C. McKim Norton noted that Manhattan already was struggling to handle an increase of "more than 100,000 rush-hour workers" laboring in about 17 million sq. ft. of new postwar office space.

"The glories of more than 1 million sq. ft. of new office space a year are an important cause of Manhattan's transit troubles," Norton declared. "Built under New York's loose-jointed and aged zoning ordinance (which has about as much effect on office building size, shape and location as a four-quart dessert mold would exert on a pint of jello), they throw added rush-hour crowds helter-skelter at the subway, bus and railroad systems."

Big plans unveiled. Last month the multitude of authorities that abound in New York disclosed some of their big plans for meeting some of these big problems of the world's biggest city:

▸ The Port of New York Authority and the bi-state Metropolitan Rapid Transit Commission decided to make a $500,000 survey of the New York–New Jersey rapid transit problem. This will explore all conceivable methods for improving and expanding cross-Hudson commuter traffic including the feasibility of a new high-speed monorail system over a new bridge; extension of New York subways into New Jersey through new tunnels, and also new tunnels to bring more commuter trains directly into Manhattan.

▸ The Port Authority and Triborough Bridge and Tunnel Authority announced a $577 million bridge and highway program proposed for completion by 1960. This called for construction of the world's longest suspension bridge, across the Narrows between Brooklyn and Staten Island ($207 million); adding a six-lane lower deck to the George Washington Bridge over the Hudson ($82 million); a new Queens-Bronx bridge over Long Island Sound ($93 million), and necessary arterial highway connections for all three spans (another $198 million).

Otis studies going west. Close to New York the problems of aging cities also beset Yonkers, an elderly industrial satellite of the city, rather than one of its bright new suburbs. Last year the big Alexander Smith carpet mills deserted Yonkers for the South. Last month Otis Elevator Co. said it "cannot afford to operate its Yonkers and Harrison, N.J. plants under present conditions," but could save "several million dollars" annually by building a single new Midwestern plant.

Yonkers city officials studied municipal concessions to persuade Otis to remain, and Otis workers mulled an appeal to them to "cut down on non-vital expenses, eliminate lost time and motion, use old equipment more efficiently, and get the utmost out of new equipment."

At month's end the relocation issue was unresolved, but it had provoked a legislator to draft a punitive law to cover "fleeing" industry (and any unfortunate enough not to have located in New York in the first place). Because of the Otis case, said Assembly Minority Leader Eugene F. Brannigan (D.), he was introducing a bill for a $50 state inspection charge on all new elevators, with a 50% rebate to buildings installing locally made lifts or those manufactured in approved areas where cheaper labor did not give the seller competitive advantage.

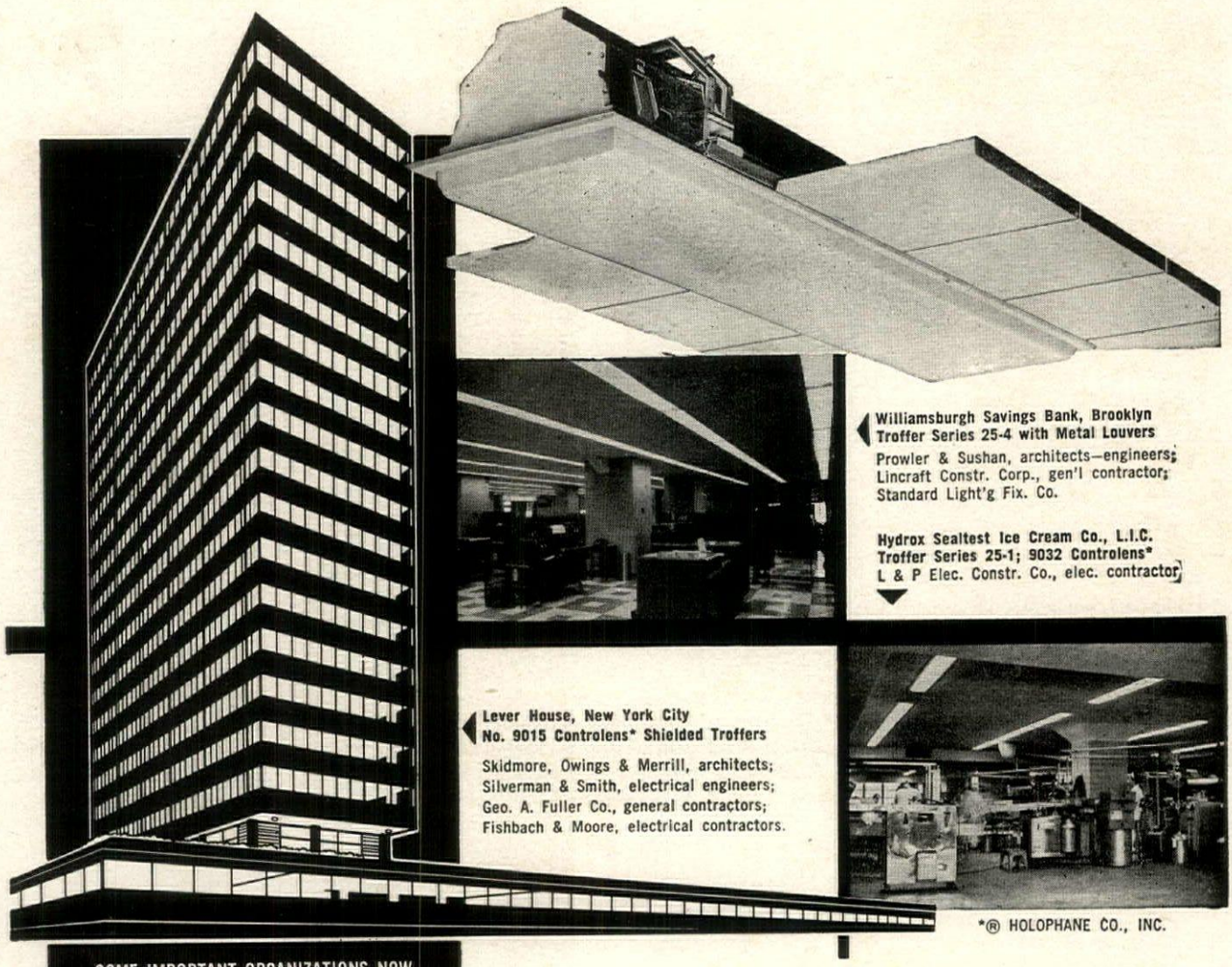


City hall will be first building in New Orleans civic center

New Orleans' municipal business, limping along in a 105-year-old city hall and seven other office buildings, will be centralized in about 18 months in a brand new, nine-story stone-and-glass city hall to be erected by R. P. Farnsworth & Co, Inc. Designed by the New Orleans architectural firms of Goldstein, Parham & Labouisse and Favrot, Reed, Mathes & Bergman, the structure will cost $8.3 million, of which $7 million will come from a bond issue voted last November, the rest from the sale of the old city buildings and land. Other buildings scheduled for the 11-acre civic center plot: state office building, city library and possibly a state court building.

For news about PEOPLE—*p. 29*

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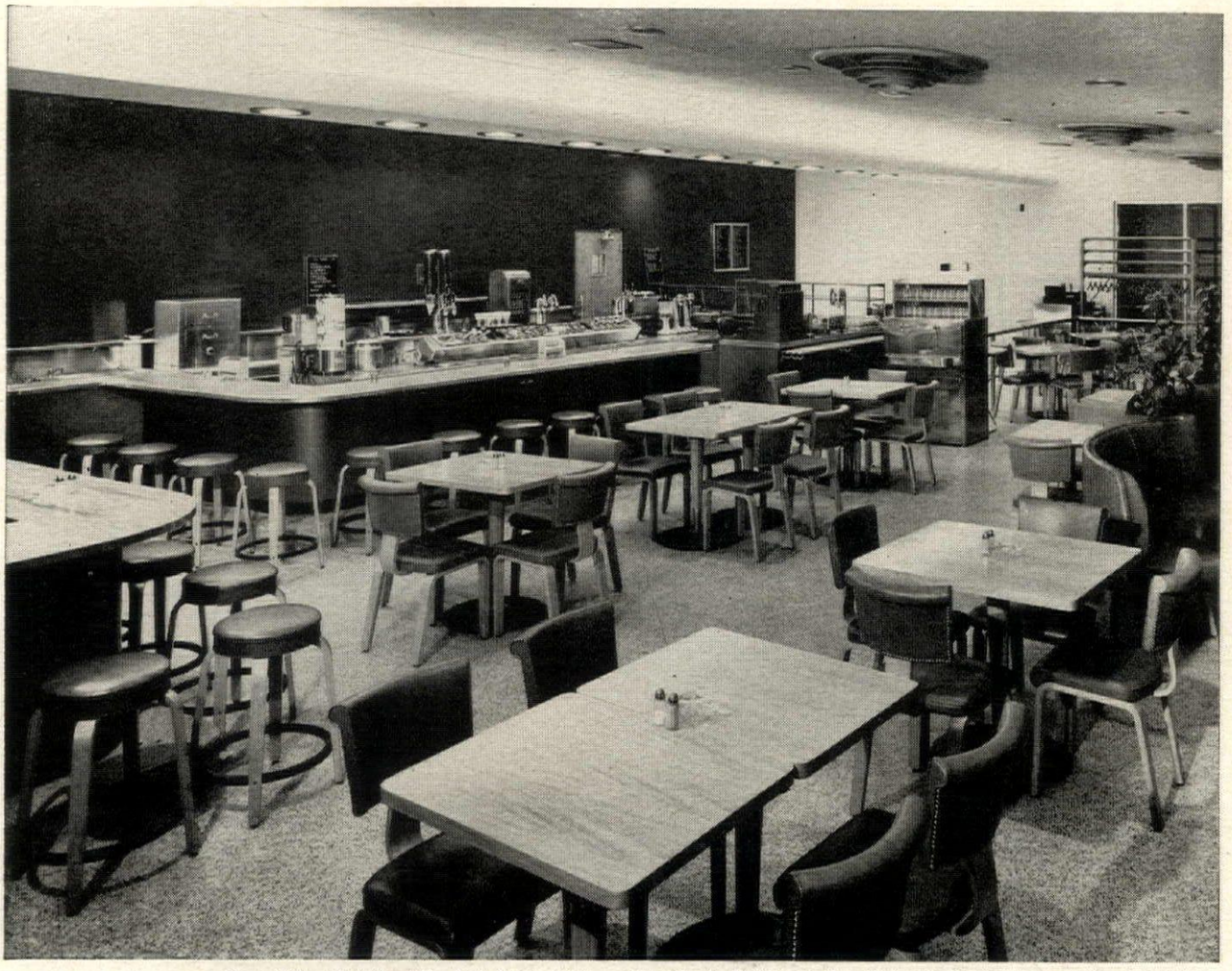
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General View of the Snack Bar in the Student Union and Food Service Building, Indiana University Medical Center, Indianapolis, Indiana

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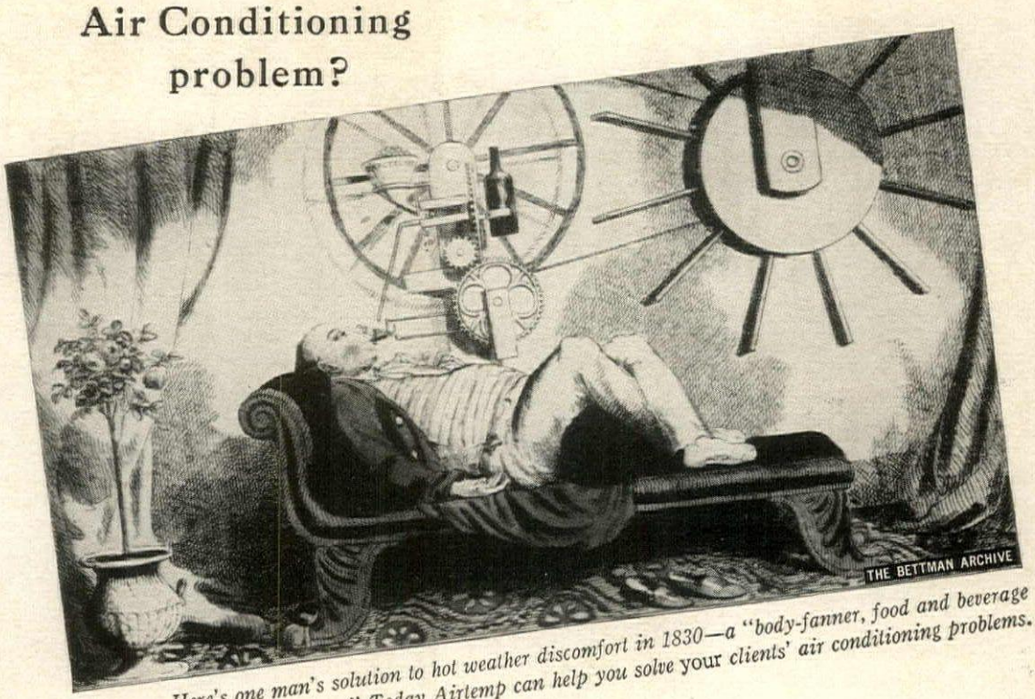
Snack Bar overlooking swimming pool and showing the gracious ultra-modern interior of the new Student Union and Food Service Building for students, nurses, doctors, outpatients, and visitors.

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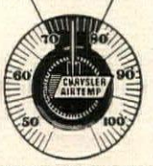
Commerce Courts (Office Building) Commerce Court and Raymond Blvd., Newark, N. J. Architect and Engineers: Mr. Henry Boyer.



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PEOPLE

AGC elects George C. Koss and Frank J. Rooney president and vice president; William Gillett heads Producers' Council

New top men elected by Associated General Contractors of America are **George C. Koss,** president, and **Frank J. Rooney,** vice president. Koss heads a big Des Moines highway and airport paving firm, Koss Construction Co. He has been chairman of



KOSS



ROONEY

AGC's public relations committee, highway contractors division and of a joint cooperative committee of AGC and the American Association of State Highway Officials. Rooney, a Miami contractor, is president of Frank J. Rooney, Inc., has built hotels and office buildings in Miami. He has been chairman of AGC's building contractors division.

The **Ferre** family, Puerto Rican industrialists who own virtually all cement, glass and clay-products plants on the island, have established a continental business beachhead by buying (with $4.5 million cash) a controlling interest in Maule Industries, Inc., Florida's largest maker of concrete products and building supplies. Other holdings in Puerto Rico of the Ferre brothers, **Luis, Herman, Carlos** and **Jose,** and their father **Don Antonio:** iron works, daily newspaper, marine drydocks, shipping and trucking companies and an asbestos products company.

NAMED: Vice Adm. **John J. Manning** (ret.), former chief of the Navy's Bureau of Yards and Docks, as managing director and Architect **Wallace K. Harrison** as a director (representing AIA) of the Concrete Industry Board, New York watchdog group set up for the improvement and standardization of concrete; Lawyer **Louis J. Fellenz** Jr., 39, of Fond du Lac, Wis., director of FHA's insuring office in Milwaukee since 1953, as national director of the FHA multifamily housing division replacing **Clyde L. Powell,** who resigned when the "608" probes started last April; New York Realtor-Appraiser **S. Edwin Kazdin,** as chairman of a committee to study means for upgrading membership requirements and standards in the American Institute of Real Estate Appraisers; **Virgil M. Volla,** as associate superintendent of the Los Angeles school system in a reorganization which centralizes under him all architectural and construction functions for the city's schools; former AIA President **Douglas W. Orr,** an authority on relating architecture to college curricula, as consulting architect of Princeton University; **Zoyd M. Flaler,** formerly chief of the Ohio reclamation division, as the state's public works director, succeeding **Clyde L. Moyer,** retiring (for the second time) after 45 years' public service; **Charles Frederick Chaplin,** vice president of Allied Paper Mills and a new member of the Cook County (Ill.) Board of Commissioners, as chairman of the county's building committee, a post in which he intends to update the county's antiquated building code.



MANNING

ELECTED: **William Gillett,** who has been active in the building materials field (vice president of Detroit Steel Products Co.) and in many administrative positions connected with the building industry (member of the Building Officials Conference of America, the US Chamber of Commerce construction committee and FHA's materials and architectural advisory committee), as president of the Producers' Council; **J. G. Smith,** president of Arkansas Oak Flooring Co., as president of the National Oak Flooring Manufacturers' Assn.; **John P. H. Perry,** former vice president of Turner Construction Corp., as president of Lift Slab Corp., New York licensee of US Lift Slab Corp., of Austin, Tex; **Matthew H. McCloskey,** Philadelphia contractor who last summer ventured into publishing by pouring new money and energy into the moribund Philadelphia *Daily News,* as treasurer of the Democratic National Committee to raise money to finance the party's drive to capture the White House next year.



GILLETT

Realtor **Robert W. Dowling** and his City Investing Co., big owner of New York theatrical real estate, have entered the excursion boat business with purchase of Wilson Line, Inc., operator of nine vessels plying the harbors of New York, Boston, Philadelphia, Baltimore and Washington. Dowling said cash value of the line was $1.8 million, and announced plans for improving the fleet.

Varied works of New York Architect **William Lescaze** were displayed last month at the Stella Elkins Tyler School of Fine Arts of Temple University in Philadelphia. Many-talented Lescaze, whose paintings, writings, research projects and industrial designs were shown along with photos of many of his buildings, was the fourth artist honored in the university's "Masters of American Arts" series of exhibitions.

Joseph P. McMurray, 42, who gave up his job as staff director of the US Senate Banking Committee six months ago to become executive director of New York City's housing authority, was named New York State housing commissioner by **Gov. Averell Harriman.** The promotion involved a pay cut from $20,000 a year to $17,000, but was regarded as putting able Democrat McMurray in the limelight, healthful for career growth. He replaced Republican **Herman Stichman.** McMurray and **Charles Abrams,** lawyer and housing expert, appointed at the same time as state rent administrator, were immediately assigned to a quest for long-range solutions to the state's housing problems, especially in the low- and middle-income field.

A.P.



McMURRAY

Max Henry Foley, 60, retired last month as a partner (since 1938) of the New York architectural firm of Voorhees Walker Foley & Smith (now known as Voorhees Walker Smith & Smith), which he joined in 1924. Foley, who will remain active by opening a consulting office of his own, has just started his third term as chairman of the Architects' Emergency Committee of New York, a group formed during the depression to assist architects in economic distress.

Bachrach



FOLEY

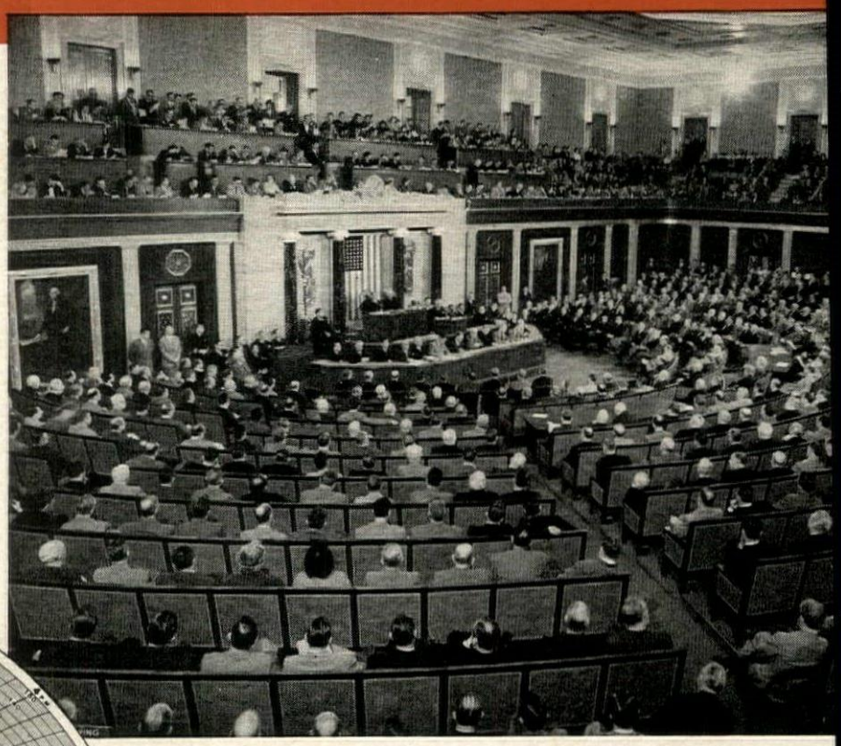
Also retired: **Robert H. Bogue,** world-wide authority on Portland cement and principal developer of high early strength cement for roadbuilding, from the National Bureau of Standards, where he organized the bureau's Portland Cement Association Fellowship research program.

DIED: **H. Stanley Hillyer,** 67, president of Hillyer & Bell, Inc., New York realty firm, and winner of the 1948 "most ingenious deal" award for assembling ten acres of Manhattan land for the New York University–Bellevue Medical Center, Jan. 2, in New York; Architect **H. Barrett Pennell,** 49, who designed and restored many houses in Philadelphia's suburban Main Line section, Jan. 2, in Wynnewood, Pa.; **Herman Fuhrman,** 72, a founder of Psaty & Fuhrman, Inc., New York contractor, Jan. 12, in St. Petersburg, Fla.; Architect **A. A. Stoughton,** 87, designer of New York's Soldiers and Sailors Monument on Riverside Dr. and founder and head (1913-1929) of the University of Manitoba department of architecture, Jan. 13 in Mt. Vernon, N.Y. after being hit by a taxi in New York.

For news about TRENDS—*p. 32*

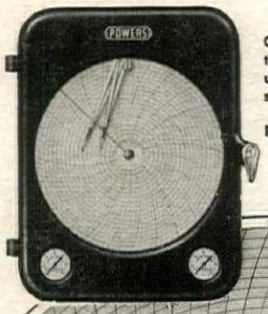
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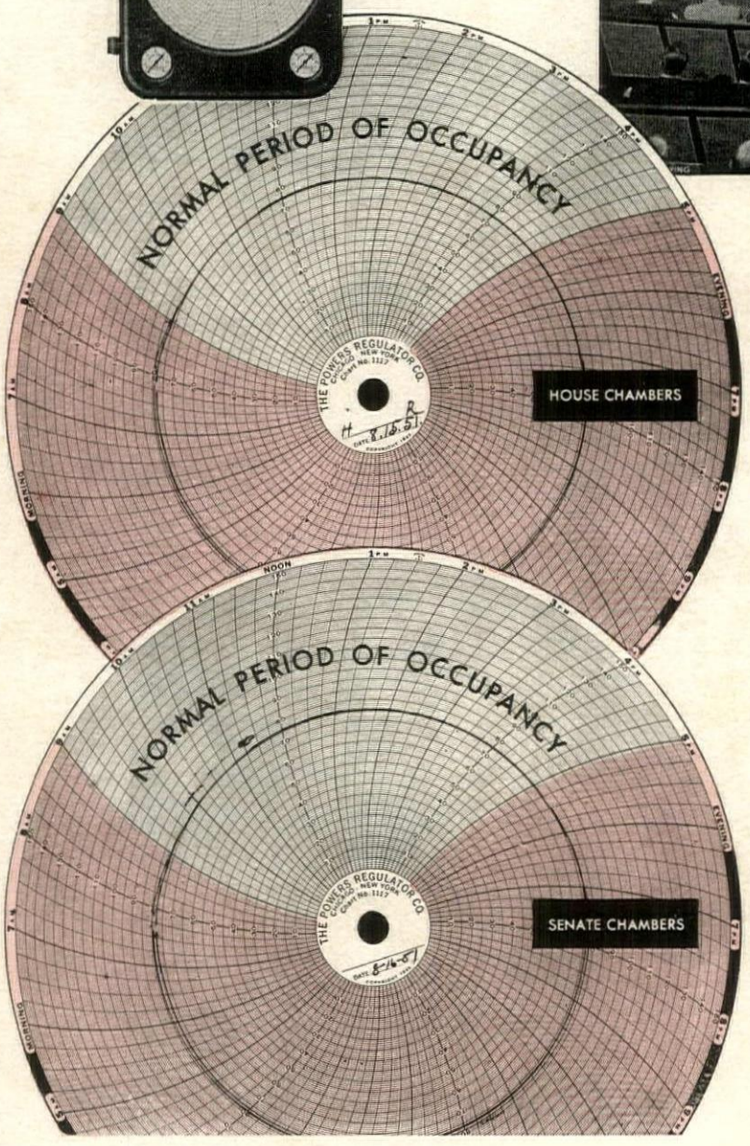


Right: Joint session of the Congress in the recently remodeled House of Representatives—listening to "State of the Union" address by the President.

In the historic House and Senate Chambers as well as the administrative offices in the Capitol, heating and air conditioning systems are regulated by a Powers system of pneumatic control.



Only a few of the many types of Powers Control used in the Capitol are shown here.
Left: Powers Two-pen Recording Controller.



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Charles S. Leopold

Contractor
Mehring & Hanson Co.

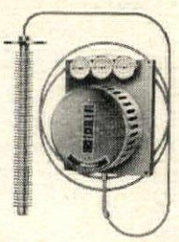
Other Washington Buildings using POWERS Control

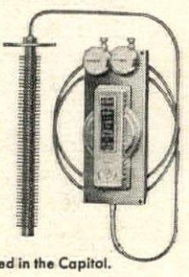
Department of Agriculture and Post Office Department Bldgs. • Department of Interior and Old House of Representatives Office Bldgs. • Apex Bldg. • Armed Forces Institute of Pathology, Walter Reed Medical Center • Lafayette Bldg. • Military Component Canadian Embassy Building • Navy Medical Center Bldg. • U.S. Dept. of Health, Education and Welfare Bldg. incl. Voice of America • U.S. Navy Hydrographic Bldg. Washington International Airport.

Experience gained by Powers in supplying dependable temperature and humidity regulation for these buildings may be helpful to you. When your problems involve precise control for heating or air conditioning, contact Powers nearest office . . . in over 60 cities.



Powers Room Type Thermostat

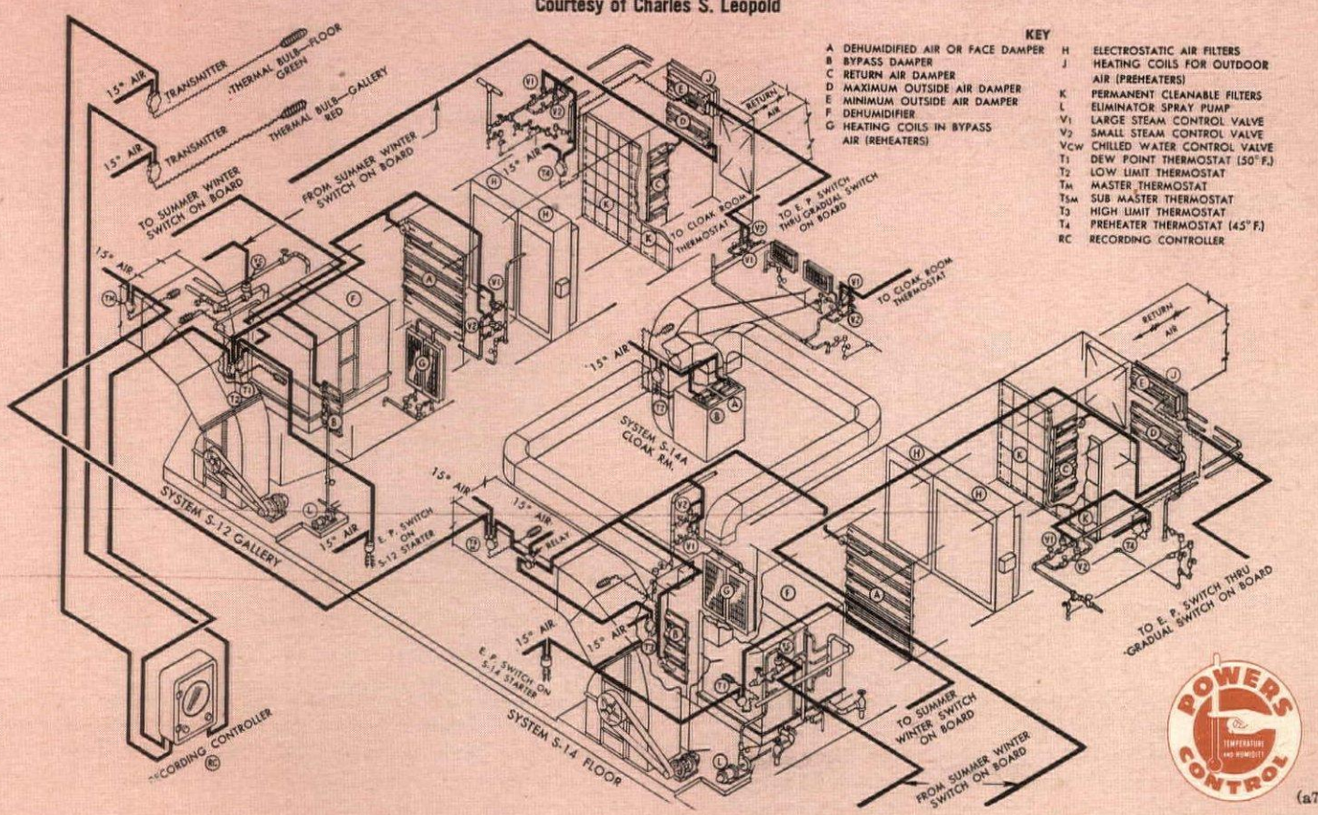




Powers Remote Bulb Thermostats for Dew Point, Low and High Limit, Preheater, Master and Sub-Master Control
—only a few of the many controls used in the Capitol.

AIR CONDITIONING APPARATUS DIAGRAM FOR OPERATION AND MAINTENANCE OF SYSTEMS IN THE HOUSE AND SENATE CHAMBERS

Courtesy of Charles S. Leopold



POWERS CONTROL

(a73)

TRENDS

Banker notes steady decrease in construction industry profit rates; building volume, costs and material prices set new records

From 1946 through 1953 the number of firms in operation in the rugged, challenging contract construction business rose from 199,000 to 431,000, or a gain of 116.6%, according to the Department of Commerce. By contrast, the average increase for all types of firms was only 29.1%.

But offsetting many fabulous new successes there were also numerous failures. Average profits are small and only about 60% of new construction firms survive two years or more, according to a study by Vice President Guy C. Kiddoo of the First National Bank of Chicago. Summarizing his study before several recent AGC state conventions, Kiddoo also related the following facts:

"Every indicator shows a continual decrease in the percentage of profit on completed work since the close of World War II. Internal Revenue reports that in 1946, 15,849 construction corporations of all kinds had average net profits after taxes of about $9,400 or 3.44% on total average receipts of $273,000. In 1951, the latest year for which these figures are available, 29,593 corporations had average net profits of only $9,000 or about 1.87% on average totals of $481,000.

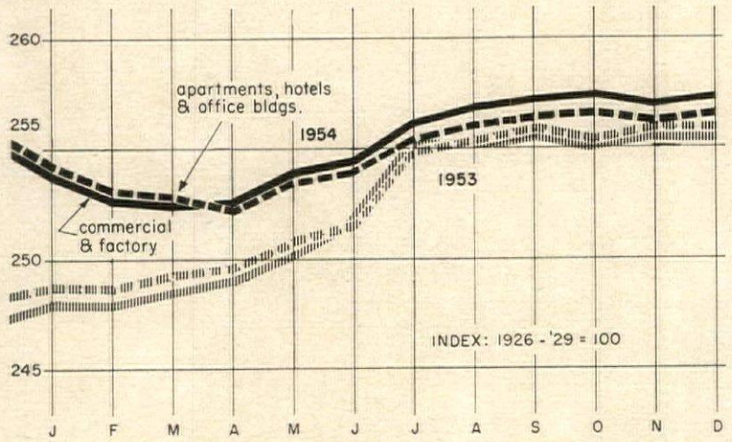
"Dun & Bradstreet figures show a decline in profit percentages from 3.76% in 1948 to about one third of that figure or 1.3% in 1952. In our bank where we do business with many contractors doing work of almost every kind throughout the world, we have observed a steady decrease in profit rates in recent years.

"Sometimes I hear general contractors complain about subs' high prices, and subs talk about the generals grinding them down. How do their income tax returns compare? In 1951, 13,196 generals had average net profits of $12,900, or 1.8% on volume of $706,000; 15,632 specials had average profits of about $6,100, or about 2% net on a volume of about $307,000.

"The median age or the average age of all firms in the construction industry at the end of 1951 was only 3.3 years, and only 17.3% of them were 7½ or more years old.

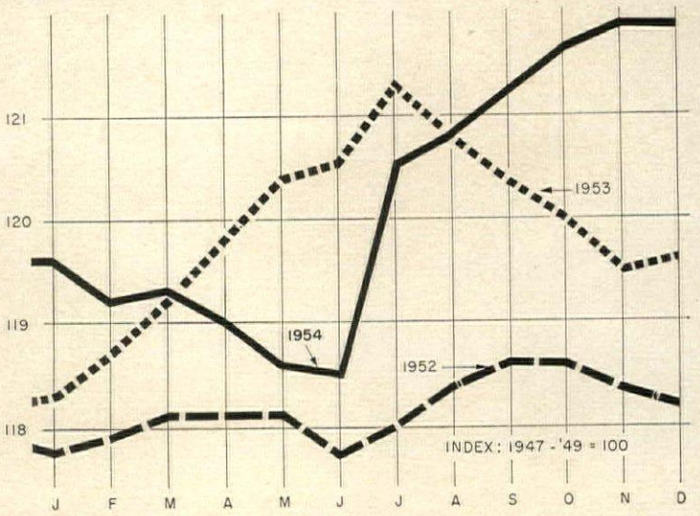
"The effect of this great influx of new construction firms, and the keen competition everywhere, is shown in the recent Dun & Bradstreet figures on failures. In recent years the lowest number of failures among contractors was 92 in 1945, with liabilities of about $3.5 million. For the first seven months of 1954 failures were at the annual rate of 1,100, with liabilities of over $43 million, an increase of 35% over 1953. Incidentally, these figures show the justification for the surety bond premiums that you pay."

BUILDING COSTS



E. H. Boeckh & Associates' building cost indexes inched higher in December, offsetting their slight dip in November and hitting a new record high. Apartments, hotels and office buildings edged up 0.4 points to 256.5; commercial and factory buildings crept up 0.3 points to 257.3. Principal cause of these increases: scattered changes in workmen's compensation rates.

MATERIALS PRICES



BLS' wholesale building materials price index advanced 0.1 point in December to 122.0. Even this negligible rise, however, set a new high, 2% above Dec. '53. Small increases for lumber and concrete items caused the advance.

NEW CONSTRUCTION EXPENDITURES

(millions of dollars)

Type of construction	December 1953	December 1954	December Per-cent change	Entire year 1953	Entire year 1954	Entire year Per-cent change
PRIVATE						
Residential building (nonfarm)	951	1,214	28	11,930	13,450	13
New dwelling units	850	1,115	31	10,555	12,035	14
Additions and alterations	78	77	—1	1,108	1,119	1
Nonresidential building	507	534	5	5,680	6,189	9
Industrial	177	172	—3	2,229	2,011	—10
Commercial	182	186	2	1,791	2,182	22
Other nonresidential building	148	176	19	1,660	1,996	20
Religious	45	57	27	472	588	25
Educational	40	51	28	426	560	31
Social and recreational	16	15	—6	163	210	29
Hospital and institutional	26	28	8	317	335	6
Miscellaneous	21	25	19	282	303	7
Farm construction	103	93	—10	1,731	1,560	—10
Public utilities	347	349	1	4,416	4,400	1
All other private	9	12	33	120	121	1
*PRIVATE TOTAL	1,917	2,202	15	23,877	25,270	8
PUBLIC						
Residential building	39	22	—44	556	345	—38
Nonresidential building	350	339	—3	4,352	4,535	4
Industrial	136	100	—26	1,771	1,500	—15
Educational	152	174	14	1,728	2,065	20
Hospital and institutional	23	24	4	353	350	—1
Military facilities	78	83	6	1,307	1,010	—23
Highways	174	185	6	3,165	3,525	11
Sewer and water	71	77	8	861	975	13
Conservation and development	61	55	—10	830	710	—14
*PUBLIC TOTAL	795	783	—2	11,379	11,450	1
*GRAND TOTAL	2,712	2,985	10	35,256	37,170	5

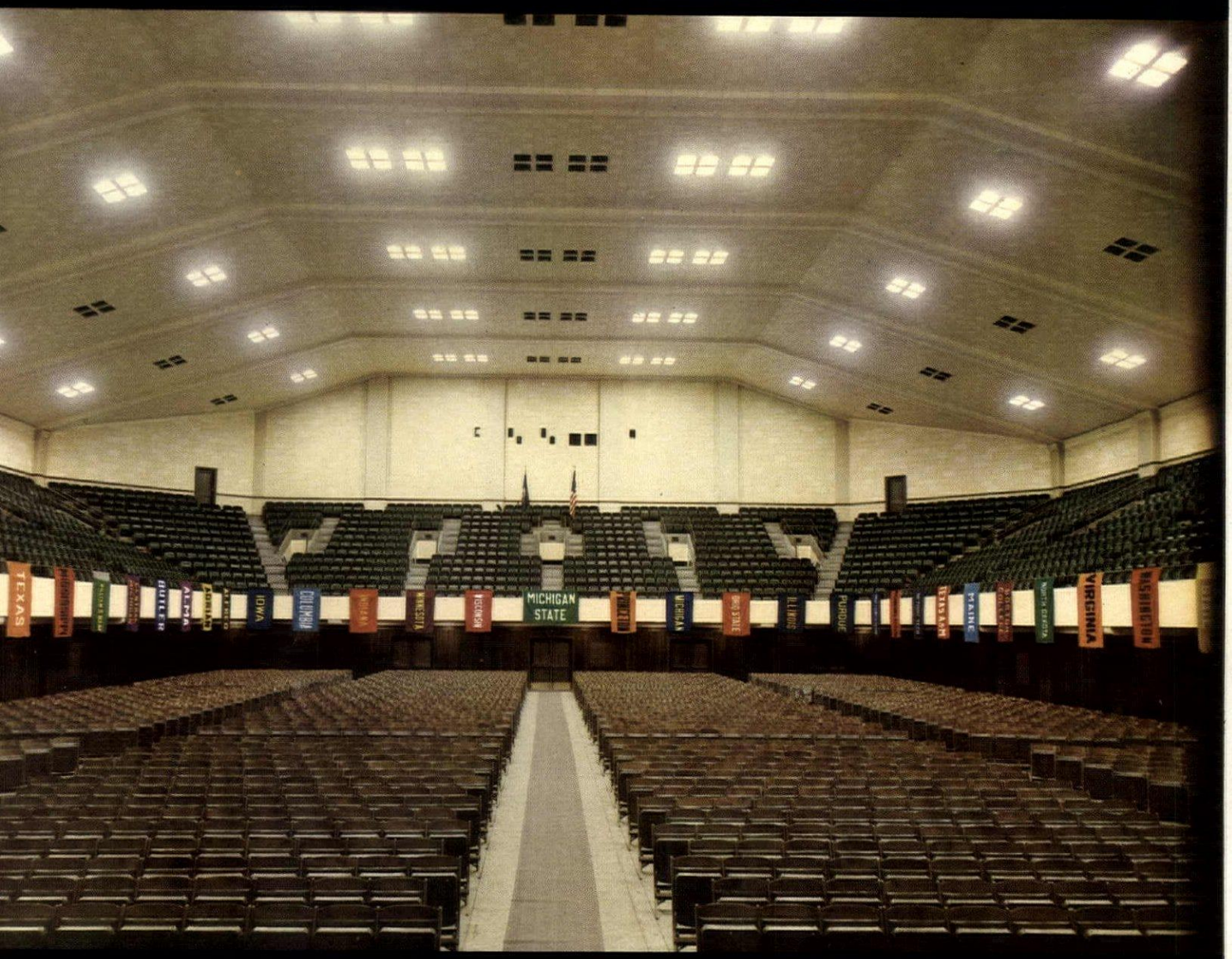
* Minor components not shown, so total exceeds sum of parts.

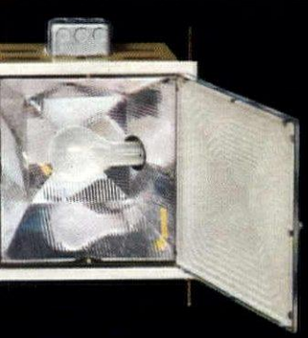
Construction activity in 1954 set a new record for the eighth consecutive year, with outlays exceeding the 1953 peak in each of the 12 months, according to Commerce-Labor Dept. reports. Housing starts totaled 1,215,000 for the year, 10% above 1953 and second only to the 1,396,000 record made in 1950. December starts, 91,000, were a record for the month, 38% above Dec. '53.

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due to Alzak glass-surfaced aluminum reflectors and KIRLIN prism lens.

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Installed cost is less than cheap units



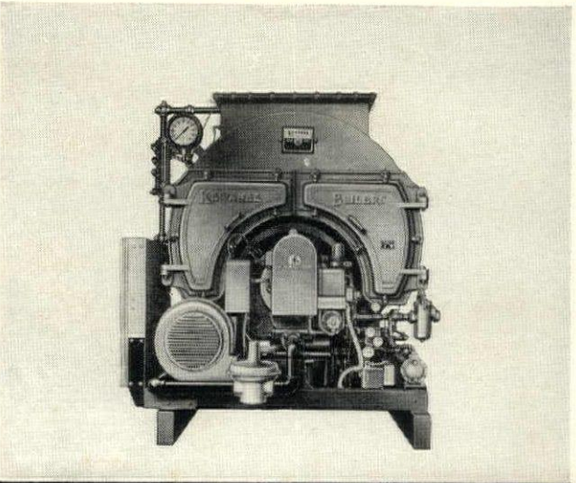
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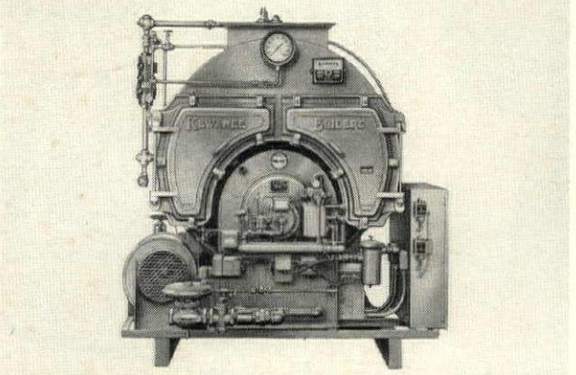
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REPRESENTATIVES IN 28 PRINCIPAL CITIES

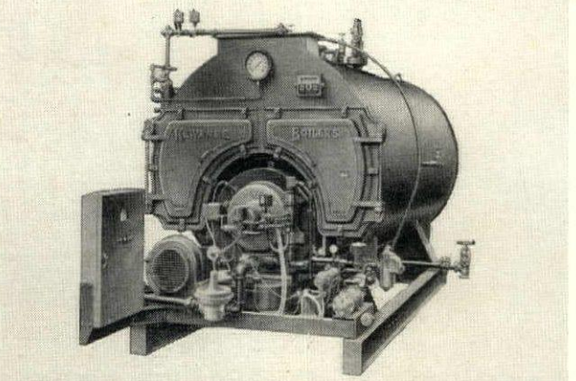
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Planned as perfectly integrated units—combined for the highest in efficient performance—these 3 matched Boiler-Burner Units represent the merged knowledge, experience and judgment of experts in both boiler and burner fields. Here, truly, are 3 of the finest Boiler-Burner Units for high or low pressure heating—power and process steam—oil, gas, or oil-gas combinations. You can be sure of dependable performance from a

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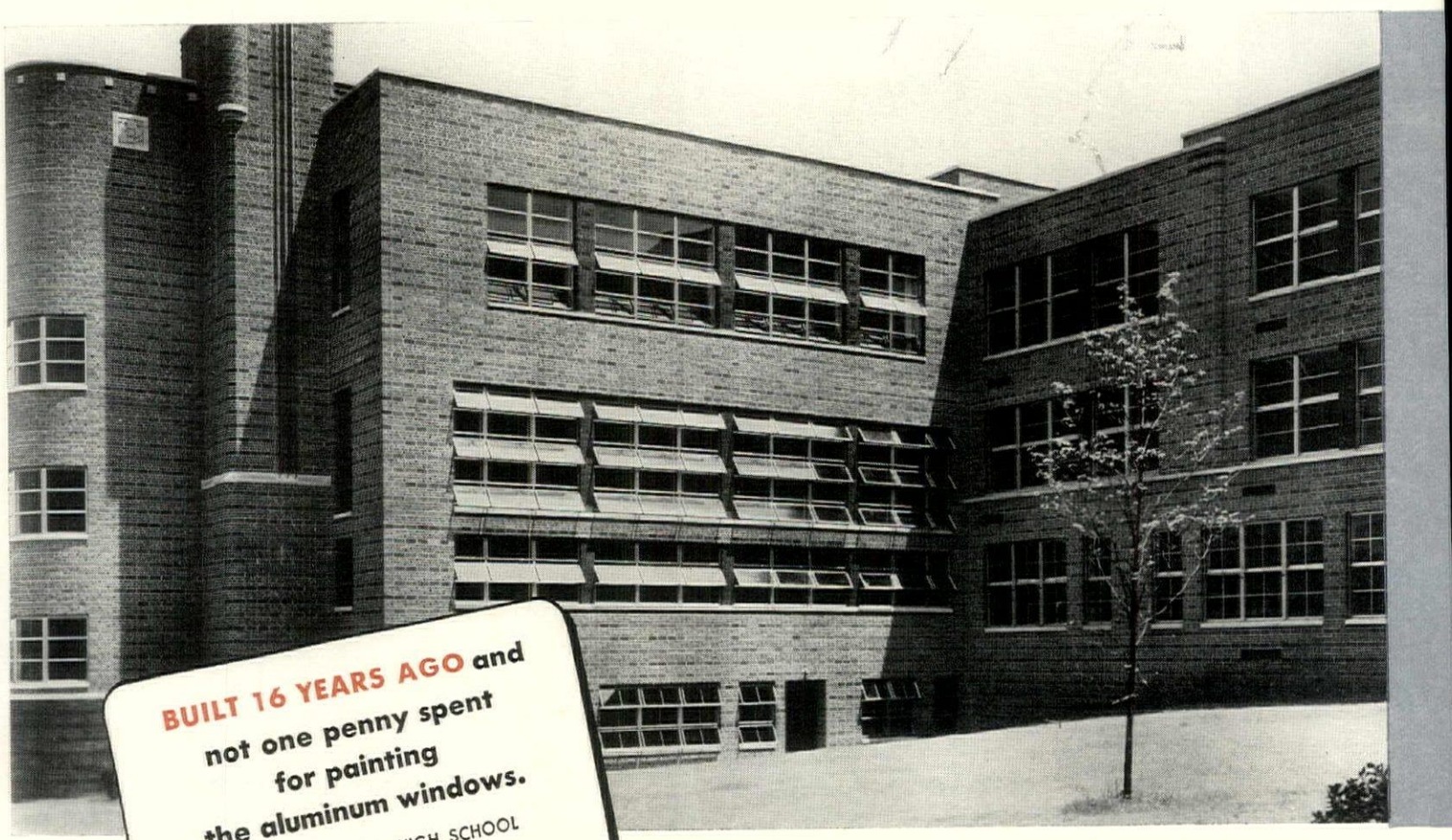
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BUILT 16 YEARS AGO and not one penny spent for painting the aluminum windows.

BLOOMFIELD JUNIOR HIGH SCHOOL
Bloomfield, N. J.
Architect: Starrett & Van Vleck

HERE'S MORE PROOF

YOU CAN SAVE MONEY

WITH WINDOWS THAT

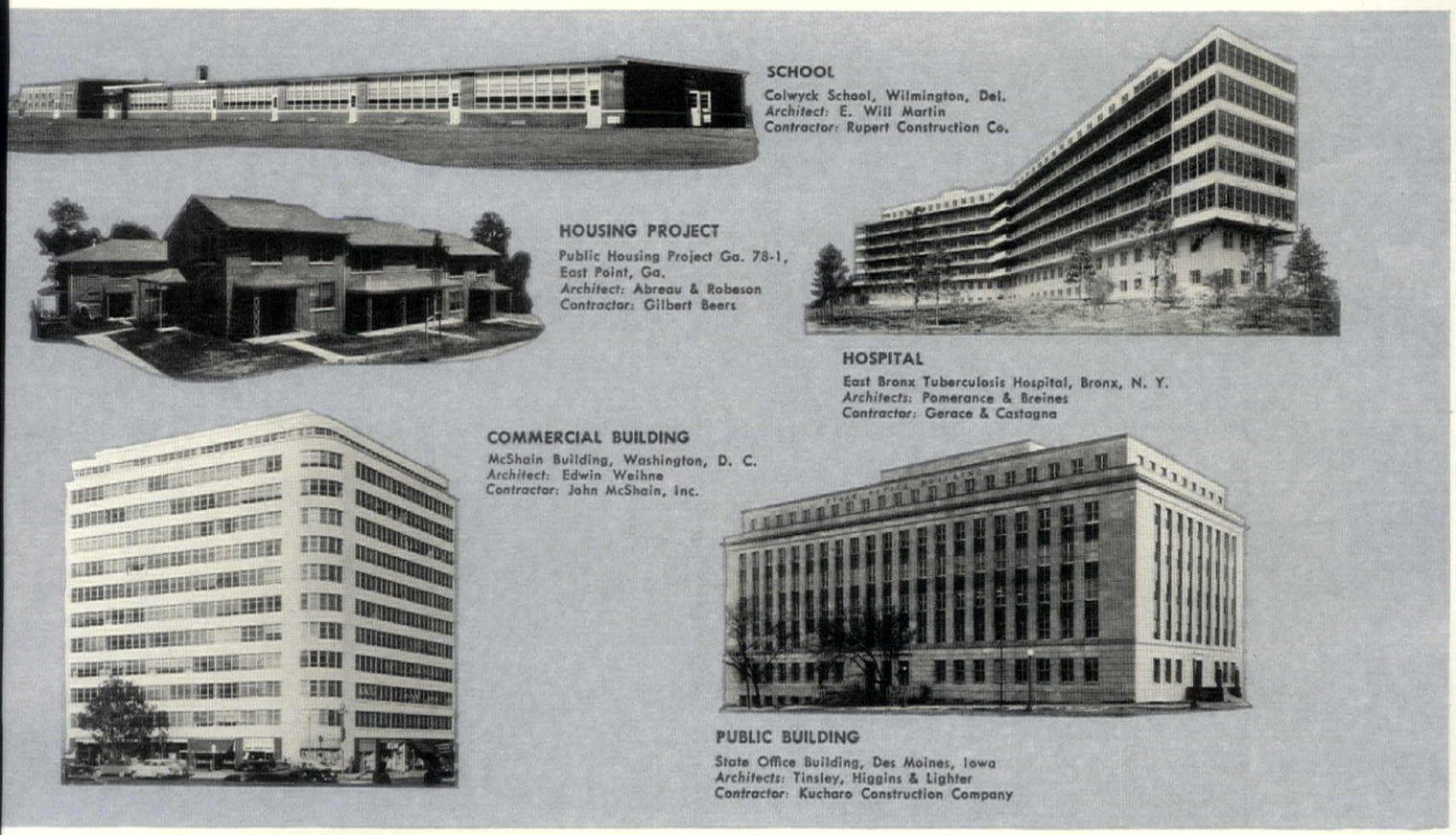
NEVER NEED PAINTING!

For schools, hospitals, apartments, commercial and industrial buildings, where maintenance expense is to be kept at a minimum, insist on



Quality Approved

ALUMINUM



SCHOOL
Colwyck School, Wilmington, Del.
Architect: E. Will Martin
Contractor: Rupert Construction Co.

HOUSING PROJECT
Public Housing Project Ga. 78-1,
East Point, Ga.
Architect: Abreau & Robeson
Contractor: Gilbert Beers

HOSPITAL
East Bronx Tuberculosis Hospital, Bronx, N. Y.
Architects: Pomerance & Breines
Contractor: Gerace & Castagna

COMMERCIAL BUILDING
McShain Building, Washington, D. C.
Architect: Edwin Weihne
Contractor: John McShain, Inc.

PUBLIC BUILDING
State Office Building, Des Moines, Iowa
Architects: Tinsley, Higgins & Lighter
Contractor: Kucharo Construction Company

EXPERIENCE SHOWS... ALUMINUM WINDOWS SAVE MANY DOLLARS ON PAINTING ALONE

Have you considered recently how much it costs to maintain an average 4′ 0″ x 6′ 9″ window by periodic painting? Reports of maintenance superintendents for several large commercial buildings say their records show it costs from $2.00 to $3.00 (average $2.65) per window per year when painted every 5 years on outside and every 3 years on inside.

Now, just think how much you save over a period of 30 or 40 years when your new building has "Quality-Approved" aluminum windows.

Experience in all types of buildings—schools (like the one shown on the opposite page), hospitals and other buildings—erected 15 to 20 years ago, shows that not one penny was ever required for painting the aluminum windows.

That's why today, more and more architects as well as maintenance-conscious building owners insist on "Quality-Approved" aluminum windows for all new buildings.

Aluminum windows, whether they be double-hung, casement, sliding, projected or awning type, are the only practical, reasonably-priced windows that *never* require painting... that cannot rust or rot, warp or swell... that retain their trim, modern-looking appearance for the life of the building.

A WORD OF CAUTION—Remember, that only aluminum is rustproof through and through. Mere surface protection against rust is not enough. Wear, unintentional scratches in delivery or installation may nullify any protective surface coating and soon require painting.

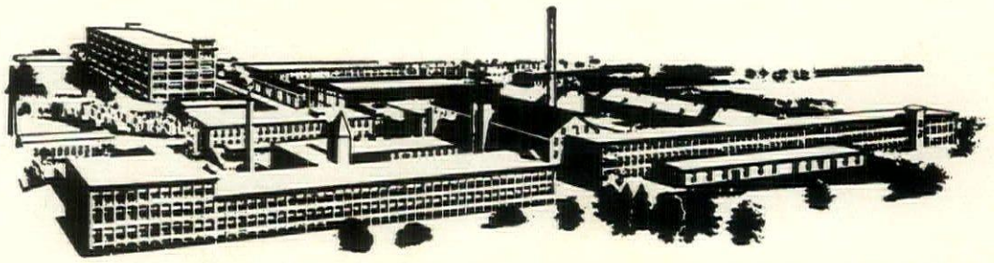
"Quality-Approved" aluminum windows are available through many manufacturers in sizes and styles that fit any exterior design treatment. For your protection and full satisfaction, insist on the "Quality-Approved" Seal when you specify or OK specifications.

For a copy of our 1955 window specifications book and names of approved manufacturers, consult Sweet's Architectural Catalog (Section 16a/ALU) or write direct to Dept. AF-52.

Aluminum Window Manufacturers Association
74 Trinity Place, New York 6, N. Y.

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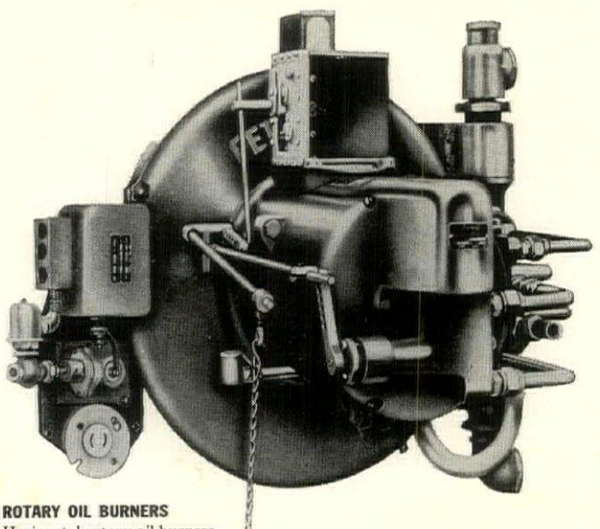
WINDOWS



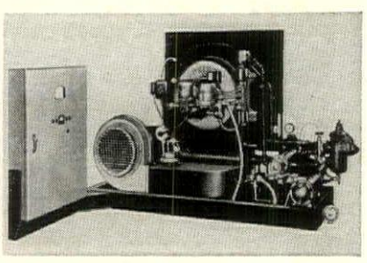
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PETRO oil burners do *two* jobs in this huge plant. They produce steam for heat and generate the electric power for plant operation. "We consider it nothing short of a minor miracle the way your dealer's engineering department came in here and changed us over to oil in the middle of winter without causing us to curtail the least bit in either power or heat," says Mr. Rockwell. Petro oil burners can save money for you too.

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PETRO burns lower cost fuel with complete reliability

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Petro industrial oil burners are designed and built to *modernize* the firing of your present boilers. The flame is adjustable to any firebox, and the installation is adaptable to any boiler room layout. This means that you save substantially on initial installation costs, and more money every day on fuel and labor costs. Mail coupon or write for free catalog and information.

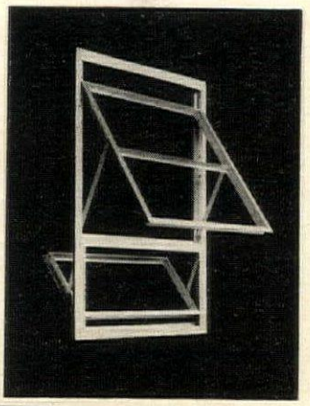
the National Library in Havana

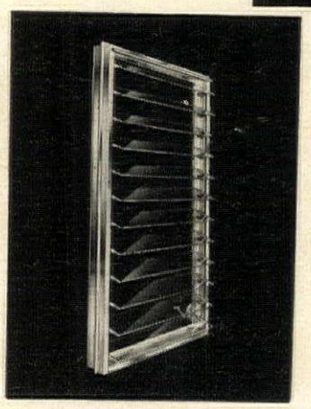
An outstanding example of how the

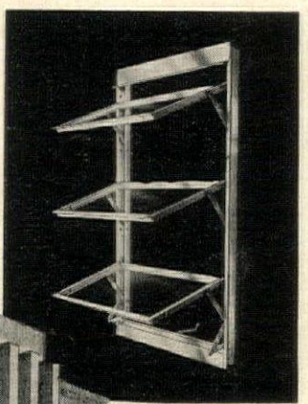
Versatility, Modern Beauty, and Enduring Value of

WARE
Aluminum Windows

is creating a growing preference from Canada to the Caribbean

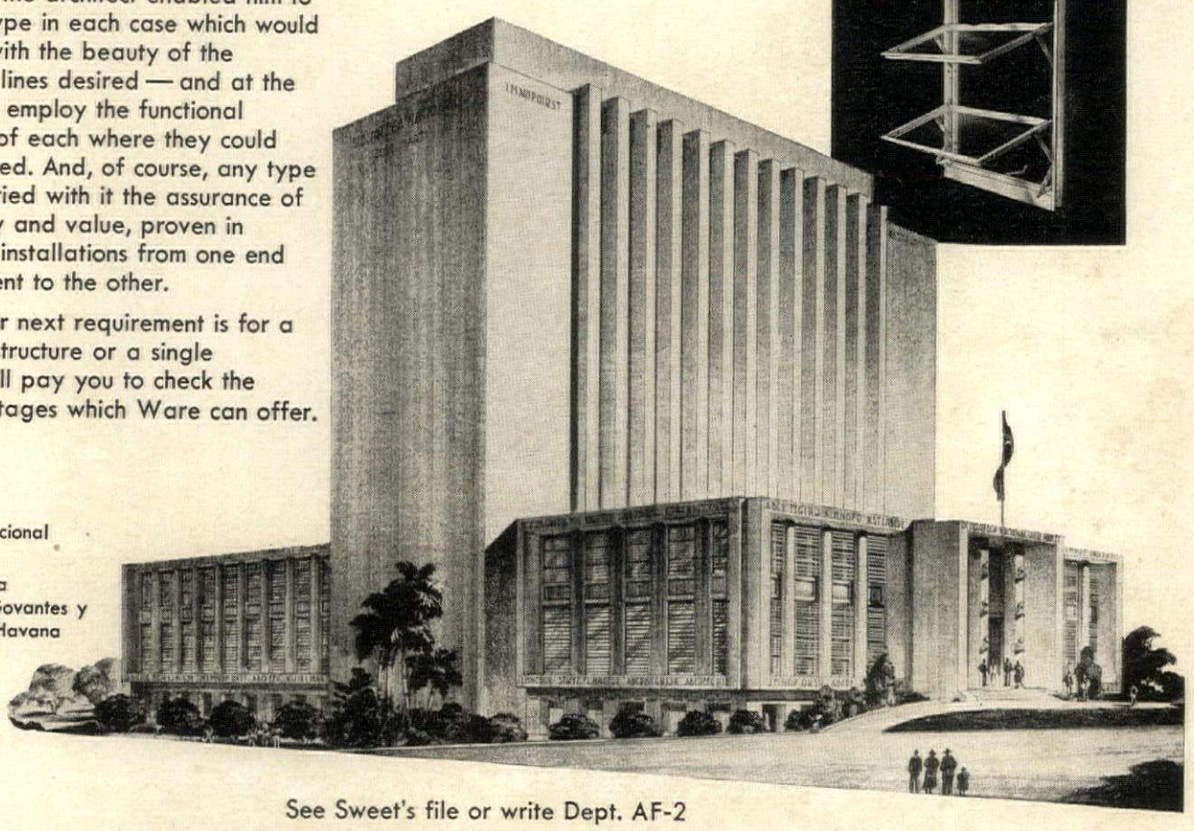






Three different Ware Window types were effectively employed in the stately new National Library in Havana. The broad Ware selection available to the architect enabled him to choose the type in each case which would blend best with the beauty of the architectural lines desired — and at the same time to employ the functional advantages of each where they could best be utilized. And, of course, any type he chose carried with it the assurance of Ware quality and value, proven in thousands of installations from one end of the continent to the other.

Whether your next requirement is for a monumental structure or a single residence, it'll pay you to check the many advantages which Ware can offer.



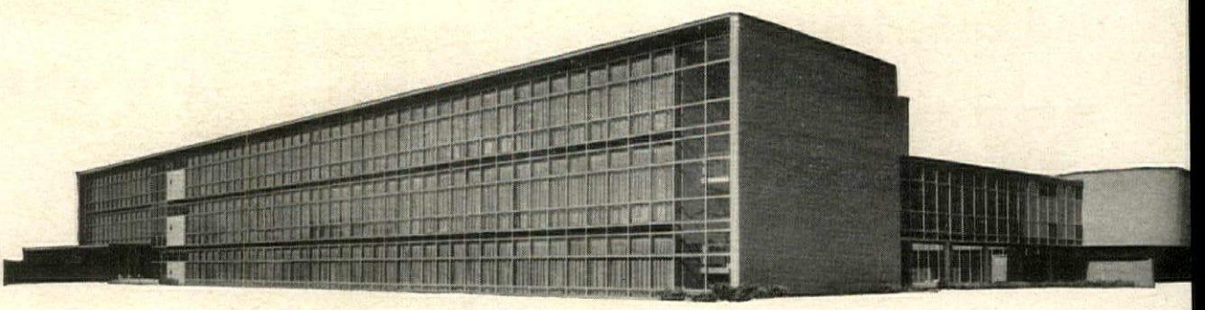
Biblioteca Nacional
José Martí
Havana, Cuba
Architect — Govantes y Cabarrocas, Havana

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Aluminum **WARE** *Windows*



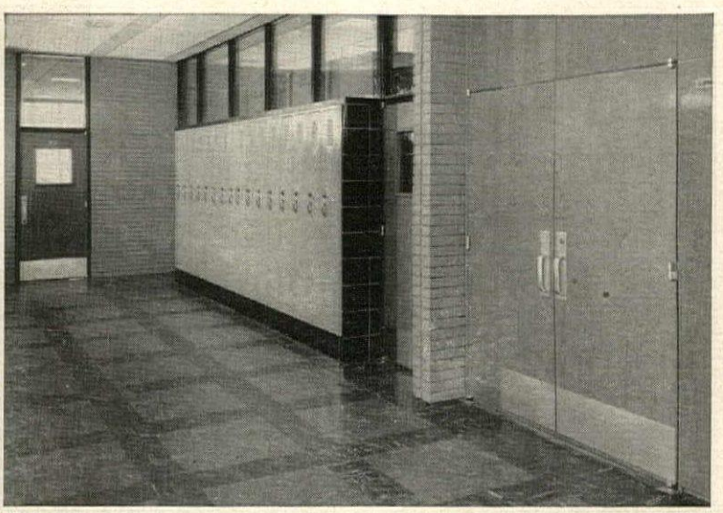
Ware Laboratories, Inc., 3700 N.W. 25th St., Miami, Florida

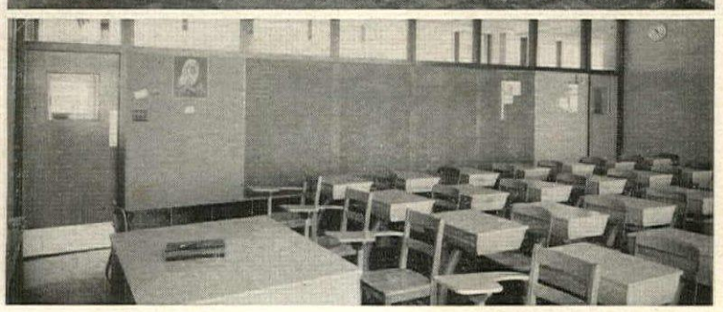


ST. PATRICK'S ACADEMY, Chicago.
Architects: BELLI and BELLI, Chicago.

173 modern doors with RIXSON











concealed closers

Entrance doors and all interior room doors.

Vestibule, stairwell, cafeteria, gymnasium, classroom, toilet and all doors leading from the corridors.

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The startling simplicity of modern architecture . . . unmarred by exposed arms and mechanisms

Only by the smooth, quiet, automatic door closing action is there any evidence that these doors are equipped with closers. The trim lines . . . especially those of the handsome flush, wood doors . . . are unbroken by any protruding arms or exposed bulky mechanisms.

And there are many functional advantages of firmly installing these closers in the rigid floor. They are out of the way . . . cannot be tampered with, work loose, or gather dust or dirt. RIXSON floor type closers cost no more installed and are simple to adjust and maintain.

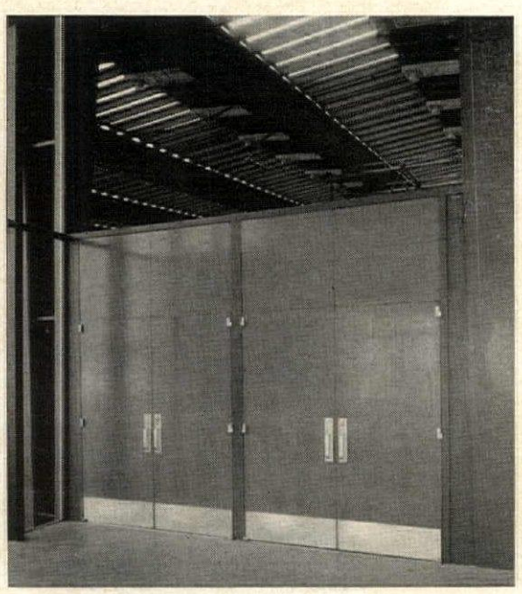
There is a size and style of RIXSON closer for every door closing need, from the heaviest entrance door to the light interior room door.

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"Gas restrictions don't affect this all-gas, dual fuel heating system"...



.... Says Architect Cay G. Weinel
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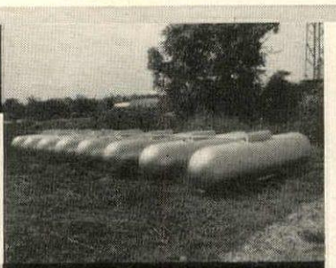
"In areas with gas restrictions, it can be good economics to select an all-gas, dual fuel heating system. A propane-air or butane-air mixture is used as a substitute for natural gas. This stand-by gas uses the same fuel lines. On large installations requiring extensive dual-piping for other fuel types, it may prove less costly to install the single pipe, L-P gas/air system. And the fuel change-over is made on a moment's notice by the operation of only two levers," says Mr. Weinel.

"In the new Huttig plant, where this system was used, Janitrol Heaters were selected because we were confident of the results. Years of experience with Janitrol units have proven to me their merit for fine performance and minimum maintenance requirements."

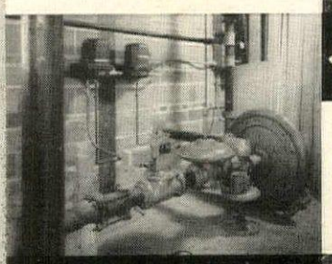
For design and specification information, write for A.I.A. Files on Commercial and Industrial Gas Heating.

L-P SUPPLY →

This battery of storage tanks provides the stand-by supply of L-P gas for the 37 Janitrol Unit Heaters in the Huttig Plant.



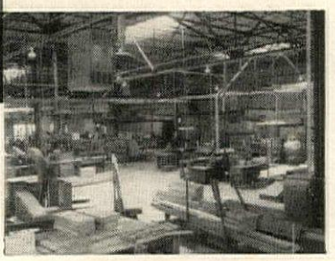
← AIR MIXING



Here the propane is blended with the air to a 1375 Btu mixture, a substitute for the local natural gas. Mixer capacity is 7,000,000 Btu/hr.

UNIT HEATERS →

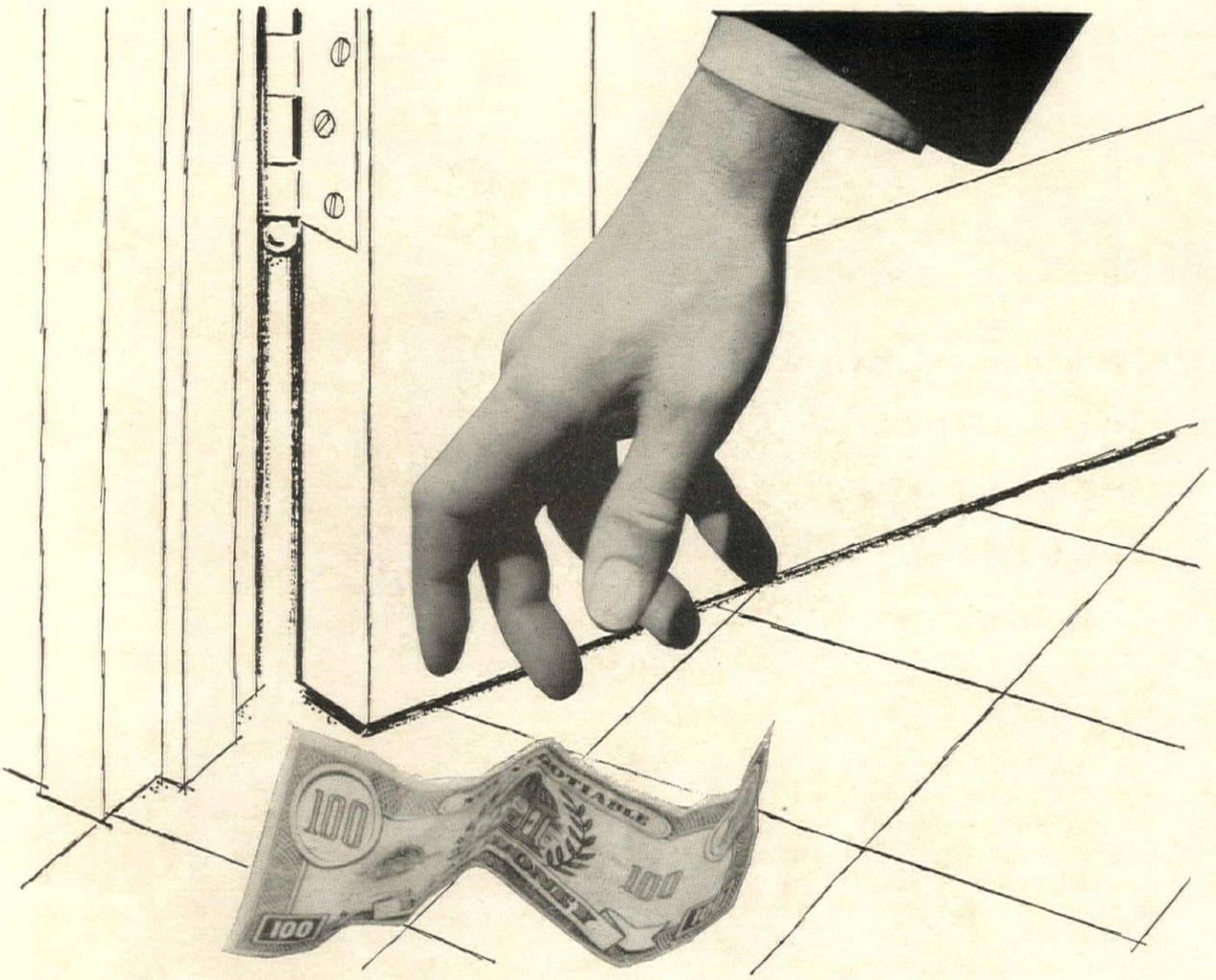
Each of these Janitrol Unit Heaters, equipped for complete shut-off, is switched from one fuel to the other from one central location, without interruption.



Janitrol
GAS-FIRED UNIT HEATERS

Janitrol Heating & Air Conditioning Division
Surface Combustion Corporation, Columbus 16, Ohio
In Canada: Alvar Simpson Ltd., Toronto 13

ALSO MAKERS OF *Surface* INDUSTRIAL FURNACES AND *Kathabar* HUMIDITY CONDITIONING



Pick up one in every doorway!

You can save up to $100 on every single door opening you fill with a Fenestra* Hollow Metal Door!

There are four sound reasons why these Door-Frame-Hardware units can give you such important savings:

1. *They cost less to buy* because you get production-line economy—not custom job costs. They are mass produced on special jigs that avoid expensive time and labor.

2. *You save time*—they come to your job complete with pre-fitted door, frame and hardware specifically made for each other. You eliminate planning, ordering and assembling special elements.

3. *You save on installation costs* because these complete units need no cutting, no fitting, no mortising or tapping. Each door is installed and in use in minutes.

4. *You save year after year on maintenance* because Fenestra Hollow Metal Doors can't warp, swell, stick or splinter. They always open easily, smoothly. They close quietly because inside surfaces are covered with sound-deadening material.

There's a door for every purpose in the Fenestra line: Entrance Doors, Flush or Regular Interior Doors with glass or metal panels, Doors with the Underwriters' B Label. For photos and details, write the Detroit Steel Products Company, Dept. AF-2, 2296 E. Grand Blvd., Detroit 11, Michigan.

*®

Fenestra | DOOR • FRAME • HARDWARE UNITS

Architectural, Residential and Industrial Windows • Metal Building Panels • Electrifloor* • Roof Deck • Hollow Metal Swing and Slide Doors

THE New Look IN FOUNDRY OFFICES



skilled design and PC Glass Blocks make the difference

George M. Ewing Company
Architects & Engineers, Philadelphia, Pa.



THE Lebanon Steel Foundry is still operated by the two men who founded it 43 years ago. Yet they are quick to adopt the newest and best production methods, anxious to keep the company young in spirit, modern in appearance.

The new office building shown here proves this.

A 2-story panel of PC Glass Blocks acts as a backdrop for the striking lobby entrance. 12-inch decorative blocks are surrounded with 6-inch blocks. The result is an interesting pattern and texture, a softly glowing wall of light to accent this handsome building.

PC Glass Blocks are literally a "raw material" in the hands of the architect. When used with skill, they combine good taste with breathtaking appearance. Structurally, PC Glass Blocks are a proven product—and your imagination is the only limit to their usefulness.

See our catalog in Sweet's or write for more information to Pittsburgh Corning Corporation, Dept. No. E-25, One Gateway Center, Pittsburgh 22, Pa.

PC Glass Blocks

® PITTSBURGH PC CORNING

ALSO SKYTROL® AND FOAMGLAS®

Why *add* acoustical treatment to ceilings?



. . . with this new structural panel it's *built right in!*

Here's a ceiling with a "built-in silencer"! It's formed of remarkable acoustical-structural, cellular steel, long-span Fenestra* Building Panels with an *integral* acoustically perforated steel ceiling surface. An efficient sound-deadening material is enveloped within the cells—no acoustical material need be "stuck on"—there's nothing to come loose and fall down. And you don't spend an extra penny for special labor for this acoustical treatment!

This "package" unit acts as the ceiling and the joist and deck support for finished roof or—if your building has extra stories—a strong, sturdy subfloor for rooms above. Fenestra Steel Panels are noncombustible, are durable for the life of the building and handsome enough for the finest building. Maintenance washing or painting won't affect the acoustical efficiency. Little wonder there's such tremendous economy in using these versatile Fenestra Building Panels!

For complete details, call your Fenestra Representative. He's listed in the Yellow Pages. Or write to Detroit Steel Products Company, Dept. AF-2, 2296 East Grand Blvd., Detroit 11, Michigan.

*Trademark

Fenestra | **ACOUSTICAL PANELS**

Architectural, Residential and Industrial Windows • Metal Building Panels
Electrifloor† • Roof Deck • Hollow Metal Swing and Slide Doors

†®



PANELS are laid over the rigid steel frame during course of erection, combining in one unit acoustical ceiling, joist and deck. Be sure to investigate before you plan your next building! Once your building is started, it's too late!



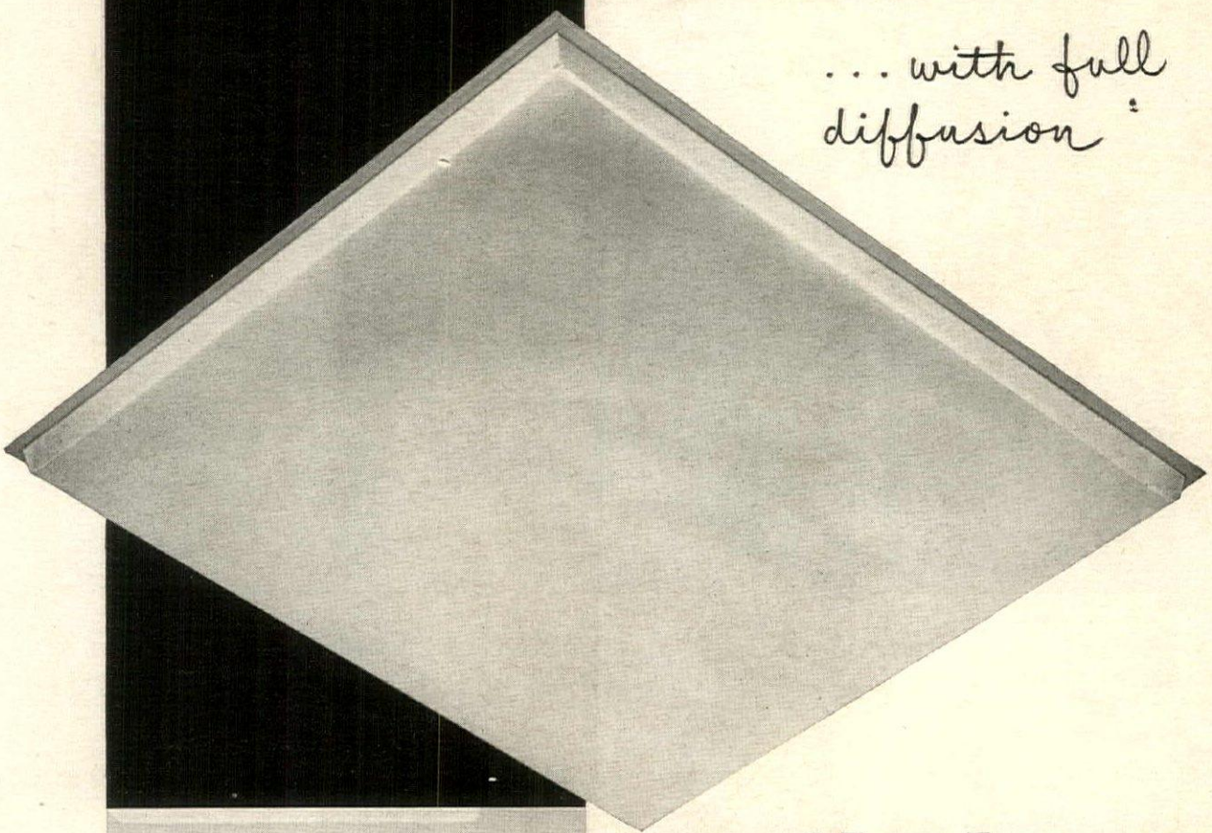
MORE AND MORE schools are using this acoustical-structural material. Willard Elementary School, Willard, Mo., uses 20,000 sq. ft. Architect: I. Dale Allmon, Springfield, Mo. Contractor: DeWitt Construction Co., Springfield, Mo.



ANOTHER SCHOOL INSTALLATION in Trumbull Elementary School, Trumbull, Connecticut, uses 14,000 sq. ft. Architect: Lyons & Mather, Bridgeport, Connecticut. Contractor: E. R. Smith, Inc., Stratford, Connecticut.

broad area lighting

. . . with full diffusion





optiplex

Graceful, trim lighting solution for store, office or any public area . . . the new super-sized Optiplex fixture by Lightolier. Four feet square, equipped with eight 40W. rapid start lamps, it spreads soft, even light without harsh brightness contrasts. Formed Plexiglas diffuser is clear white, hinged for easy cleaning or relamping, permanently retains its whiteness, dimensions and even light diffusion. Lights instantaneously without flicker. Available for stem, surface, or recessed mounting.

Optiplex fixtures are available in a wide range of sizes for commercial and residential installations. For a portfolio of Optiplex lighting by Lightolier, write today to Dept. AF-2.

LIGHTOLIER

Architectural Fixtures, Residential Fixtures, Portable Lamps.
JERSEY CITY 5, NEW JERSEY

or a lower lifetime window cost...



Specify these steel windows with TWO protective coatings!

These windows are *stronger,* because they're made from solid bar steel sections. And this extra strength is permanently preserved by an exclusive *double* protective coating. First, Super Hot-Dip Galvanizing, done in Fenestra's own special plant, using electronic controls, alloys a thick zinc coating with the steel. Then a process called Bonderizing adds a nonmetallic coating over the zinc. Result—a window installation with a lower lifetime cost than has ever before been possible! Even the initial cost of this modern, durable finish is as little as the cost of two inside-outside field coats of paint.

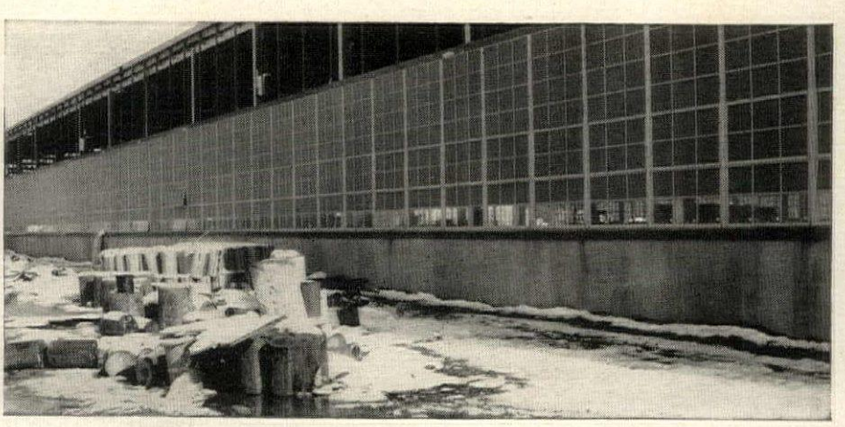
For complete information, contact your local Fenestra* representative. He's listed in the yellow pages of your phone book. Or write for our free booklet on Fenestra Super Hot-Dip Galvanizing and Bonderizing. Detroit Steel Products Co., Dept. AF-2, 2296 East Grand Blvd., Detroit 11, Mich. *®

Fenestra | **INDUSTRIAL STEEL WINDOWS**

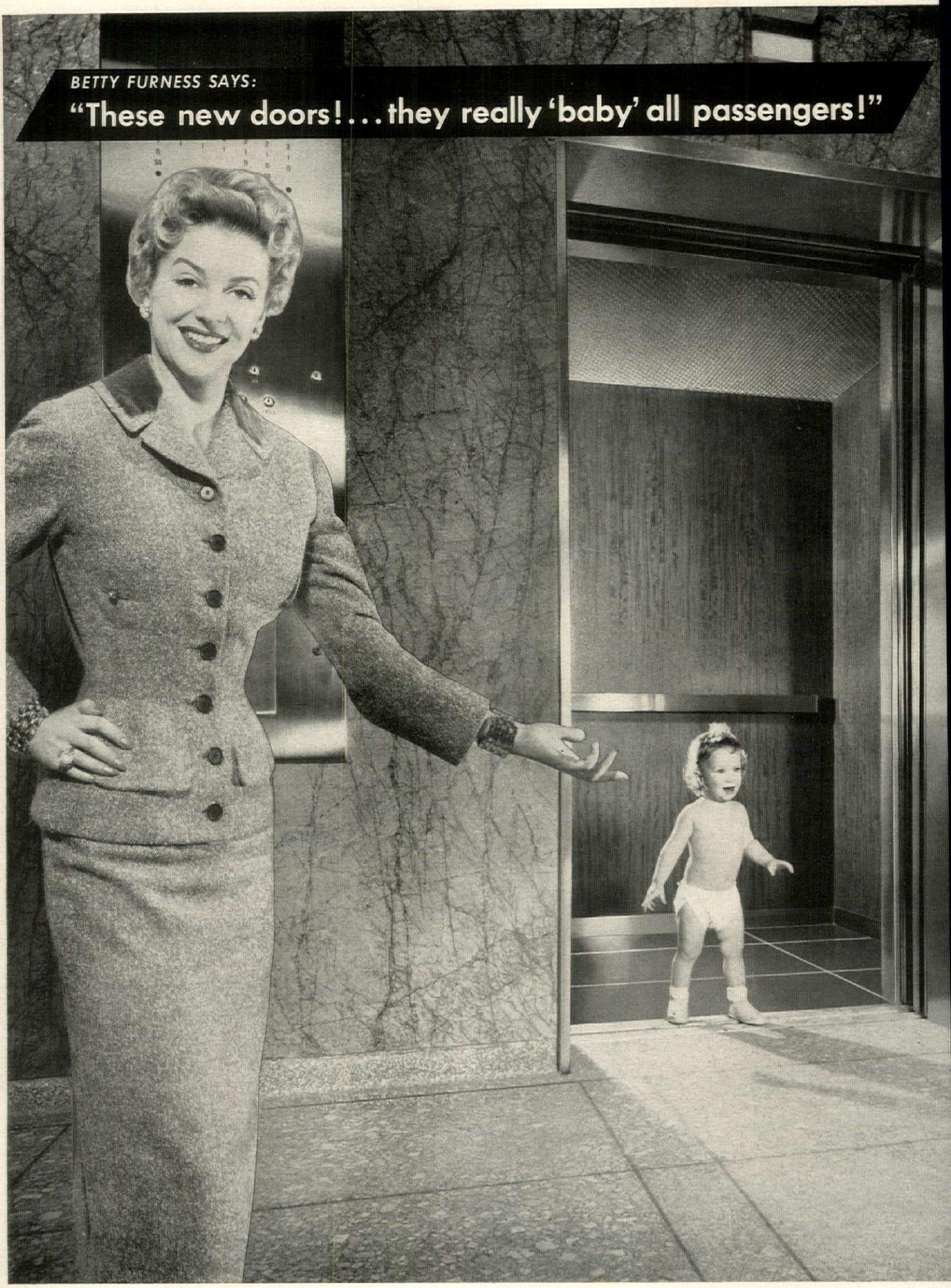
Architectural and Residential Windows • Metal Building Panels
Electrifloor* • Roof Deck • Hollow Metal Swing and Slide Doors



BEND TEST demonstrates the durability of Super Hot-Dip Galvanizing. It won't crack. With some types of galvanizing, when the steel is bent, then straightened, the galvanizing cracks open, leaving the steel vulnerable.



ANOTHER INSTALLATION of Fenestra Super Hot-Dip Galvanized Industrial Steel Windows. Hytron Midwest Plant, Kalamazoo, Michigan. Contractor: Miller-Davis Company, Kalamazoo.


BETTY FURNESS SAYS:
"These new doors!...they really 'baby' all passengers!"



NOW WESTINGHOUSE "SUPER-HUMAN DOORS" GIVE RIDERS NEW CONFIDENCE IN OPERATORLESS ELEVATORS

New TRAFFIC SENTINEL controls doors *better* than human attendant

ACTUAL HEAVY-TRAFFIC INSTALLATIONS PROVE

No more door flutter
No more false door starts
No more premature closings

YET ALL UNNECESSARY DOOR-OPEN TIME IS ELIMINATED

and Westinghouse Operatorless Elevators save up to $7,000 per car per year in operating costs

Now, Westinghouse has solved the last major heavy-duty operatorless elevator problem facing office building management—the problem of passenger anxiety due to doors closing on them as they move in and out of elevator cars.

Gone forever is any fear of doors closing before they should—once and for all, Westinghouse Traffic Sentinel eliminates frightening, false door starts that startle passengers.

Traffic Sentinel is the secret of this new-found confidence—Traffic Sentinel, the remarkable electronic door control that outperforms even highly trained human attendants and eliminates *all* unnecessary door-open time.

For more information on Traffic Sentinel, call our nearest office listed in the Classified Directory, or write Westinghouse Elevator Division, Dept. 5PX, 9 Rockefeller Plaza, New York City.

Westinghouse Elevators

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

J-98716



SelecTemp room units, only 18 inches high, are recessed into wall and can be painted to match color scheme. Three sizes: 6,000, 12,000, and 18,000 Btu output. 12,000 Btu size shown below. No electric wiring or power is used. Small flexible copper tubes carry steam to each room unit.

Why Iron Fireman® SelecTemp® is the greatest advance in modern heating

This Quick Quiz Tells Story

Features never before available bring new heating standards to apartments, hospitals, motels, office buildings, schools and other buildings of every size and type.

Q. What features are new and better in Iron Fireman SelecTemp heating?

A. (1) Thermostat in every room; (2) modulated (not "on-off") heat; (3) filtered warm air continuously circulated; (4) easily installed in new or old construction; (5) boiler can be located anywhere; (6) moderate operating costs.

Q. How does SelecTemp provide individual room temperature control?

A. Each room heating unit has its own thermostat. Temperature in any room, including bathrooms, can be raised or lowered without affecting temperature in any other rooms.

Q. What is meant by "modulating" heat?

A. SelecTemp is not "on-and-off" heating. Each room unit automatically modulates its own heat output. Steam turbine operated fan in each unit runs faster or slower, according to amount of heat needed, gently circulating filtered warm air.

Q. What happens when south rooms face warm sunshine and north rooms face cold winds?

A. SelecTemp heaters in the rooms affected act at once, adjusting heat output to the needs of the individual rooms. Heating units on the warm side of the building slow down to compensate for solar heat, while those on the cold side increase heat delivery to make up for extra heat loss. SelecTemp units mounted in outside walls quickly sense temperature changes and automatically increase room temperature to keep comfort level constant. Reaction is fast and accurate—no outside thermostats required.

Q. Is SelecTemp reasonable in cost?

A. Yes. The system is engineered for very economical installation and operation, both in new construction and modernization. SelecTemp, a new, different and revolutionary kind of heating, is one of the most desirable features you can put into any type of building where human comfort is involved.

SEND FOR FREE SELECTEMP BOOKLET . . .

Contains complete description, with specifications for builders and architects. Use coupon below.

Iron Fireman®

SelecTemp®

MODULATING ZONE HEATING



Iron Fireman Manufacturing Company
3073 W. 106th St., Cleveland 11, Ohio.
In Canada: 80 Ward St., Toronto, Ontario.

Please send free descriptive booklet on SelecTemp heating.

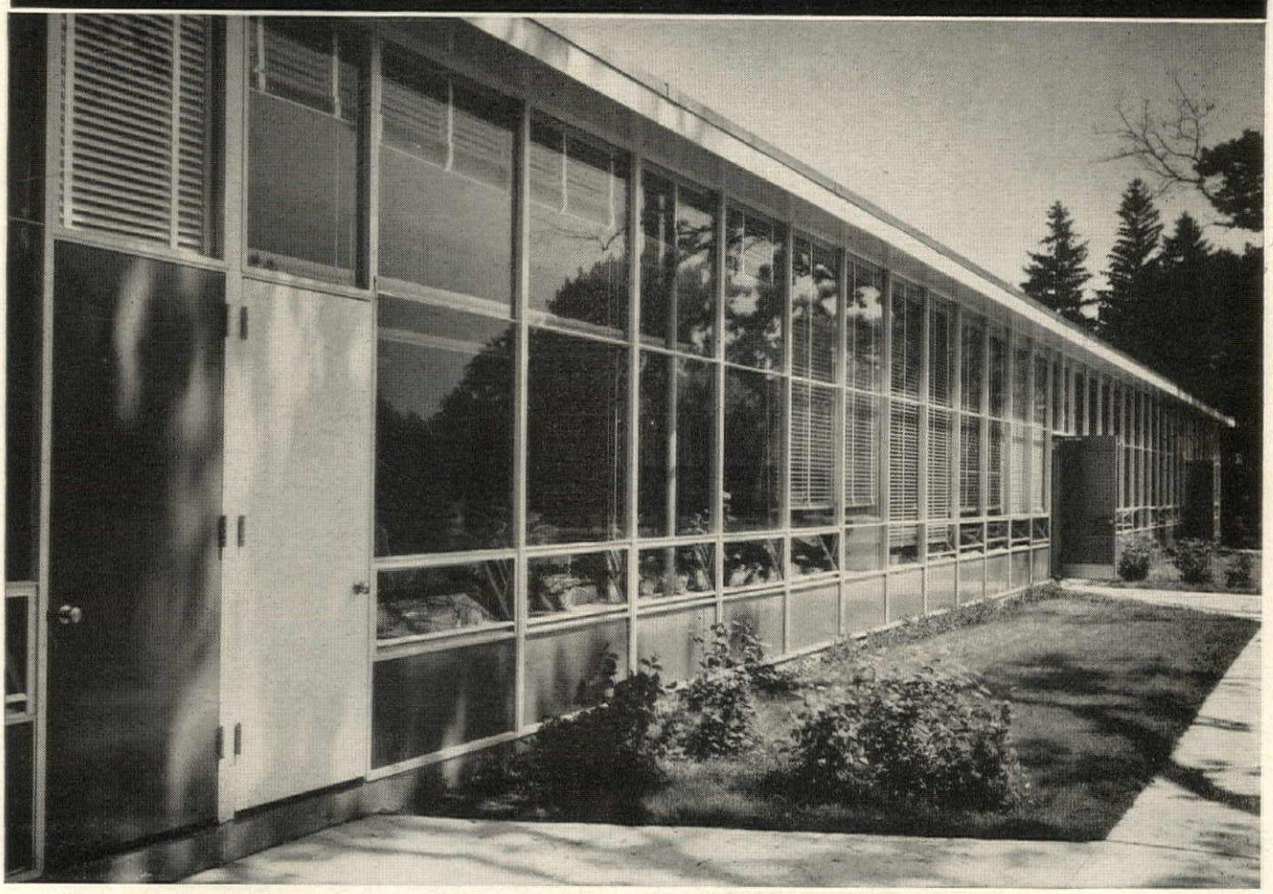
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City _____ State _____

Since HOPE'S *1818*

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



North Street Elementary School, Greenwich, Conn.

Sherwood, Mills & Smith, Architects — *A. Barbaresi & Son, Inc., Builders*

The Extensive Use of HOPE'S Steel Window Walls Provided Substantial Savings in the Cost of this Handsome, Modern School

More and more, architects are using Hope's Steel Window Walls not only because of the substantial savings effected but because of their greater strength and rigidity which permit row upon row of uninterrupted floor-to-roof framing as in the building shown. The architect may insert doors, fixed sash, ventilators and insulated panels wherever needed. Here, each class-room contains its own outside door, a most desirable feature. In addition, there is an abundance of controlled natural light and well-planned, draft-free ventilation. The space-saving insulated panels at sill make available many extra square feet of floor space usable for cupboard storage, heating units, etc. Hope's Window Walls require a minimum of maintenance and last the life of the building.

Write for Catalog 134AF

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

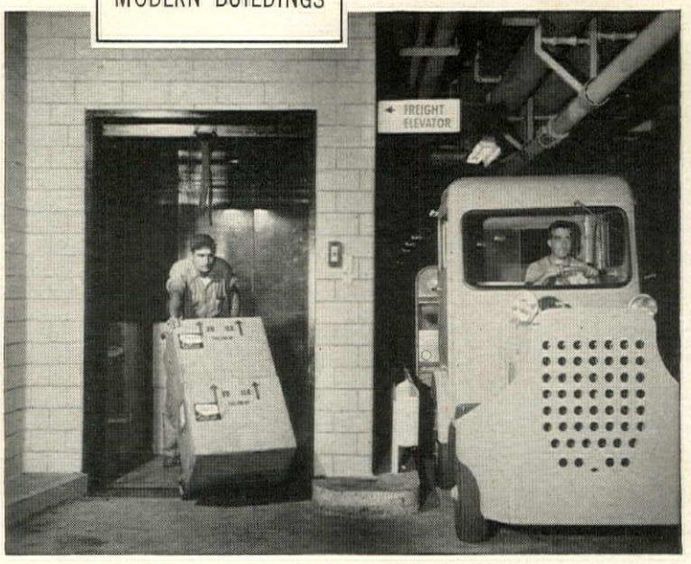


Philadelphia International Airport Terminal

Philadelphia, Penna.

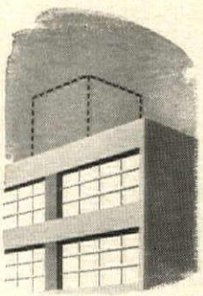
This splendid new building embodies all the latest ideas and improvements in airport layout and design. Built with an eye to future expansions, it has a very interesting elevator installation: The Rotary Oildraulic Elevator, now serving 3 landings, can later be extended at very little expense or traffic interruption to serve an additional floor. This is possible because this modern elevator is raised and lowered by a hydraulic jack and requires no overhead machinery.

Architects: Carroll, Grisdale & Van Alen
Consultants: Airways Engineering Corporation
Rotary Oildraulic Elevator installed by:
Security Elevator Co., Inc., Philadelphia, Pennsylvania



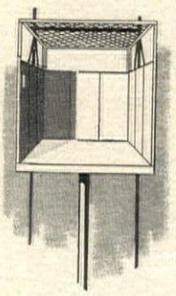
ınd efficiency in elevators

Rotary Oildraulic Elevators have these architectural and operating advantages



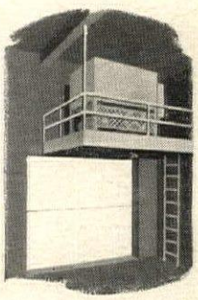
No costly, unsightly penthouse

Because it's pushed up from below by a hydraulic jack, not pulled from above, the Oildraulic Elevator requires no unsightly penthouse. This permits a saving of several hundred to thousands of dollars, and improves the building design.



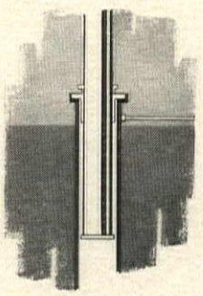
Lighter shaftway structure

There's no need for heavy, load-bearing sidewall supporting columns and footings to carry the car, counterweight, overhead machinery, and the load. The powerful Rotary Oildraulic jack supports the entire system from below.



Flexibility in power unit location

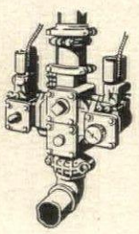
A machine room can usually be dispensed with because Rotary's compact power unit can be located at any convenient spot on any landing and on any side of the hatchway . . . or in an area with other equipment.



Low operating and maintenance cost

As the pump, all valves and the plunger operate in oil at all times, wear is negligible. Motor is used only when car rises—half the usual service. Smooth operation reduces shock and wear. No cables to replace periodically.

New Rotary Development



PATENTED OILDRAULIC CONTROLLER guarantees smooth starts, accurate landings

The revolutionary Rota-Flow oil-hydraulic power system gives velvet-smooth starts and cushioned stops. Oildraulic automatic floor leveling positions the elevator car to each landing with exactness . . . ¼" accuracy guaranteed. The new Oildraulic Controller is a very remarkable device that handles the functions of seven separate control valves . . . simplifies adjustments and maintenance.

Rotary electric control systems are tailored to exact requirements and any desired type of operation can be furnished. For planning assistance call on our Engineering Department.

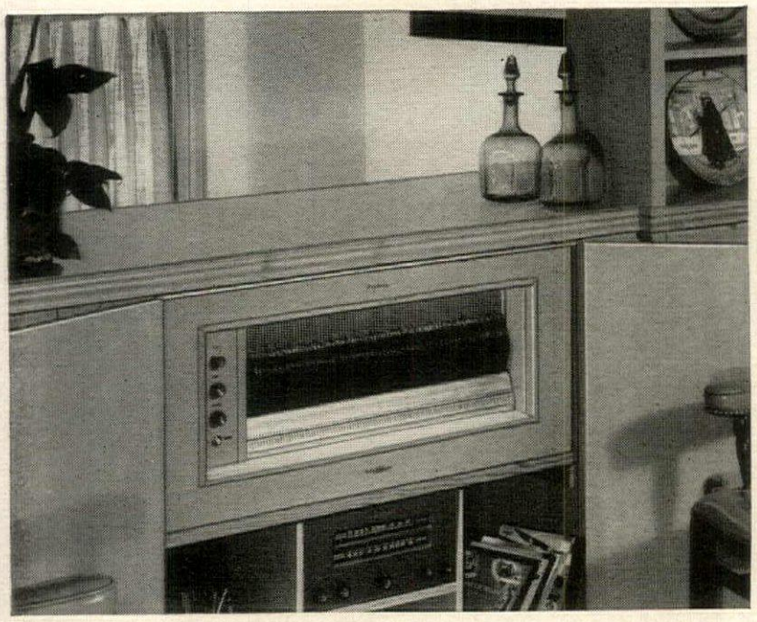
Rotary®

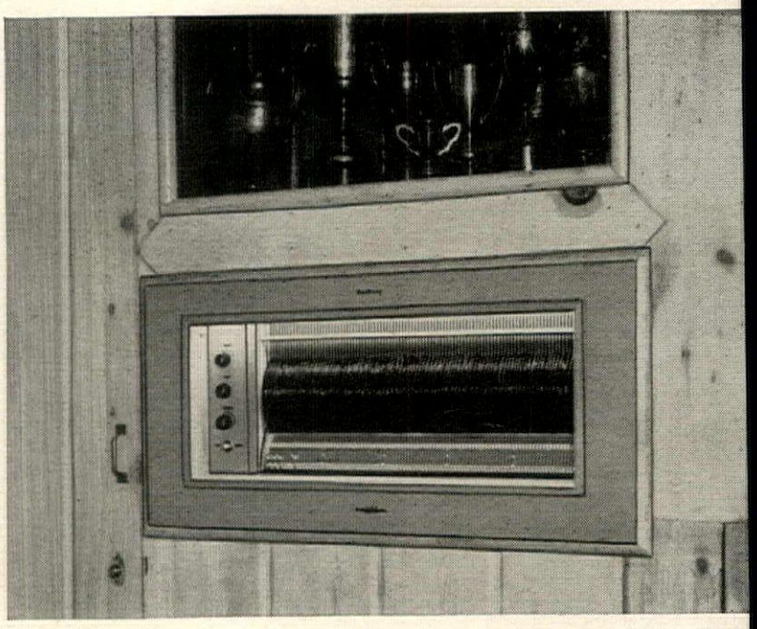
OILDRAULIC® Elevators

(FREIGHT OR PASSENGER)

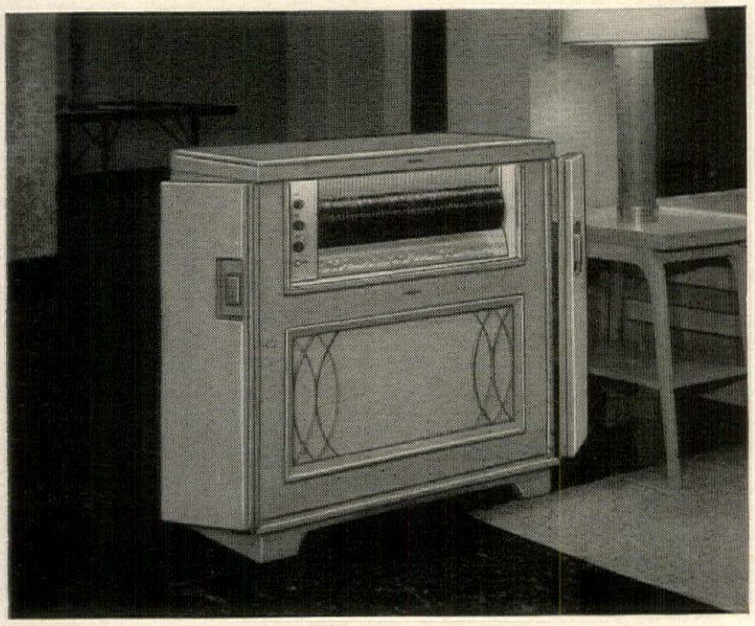
Engineered and built by Rotary, world's oldest and largest maker of oil-hydraulic lifts

SEE OUR FILE IN SWEET'S—For catalog and complete architectural data, write
ROTARY LIFT CO., 1007 Kentucky, Memphis 2, Tenn.

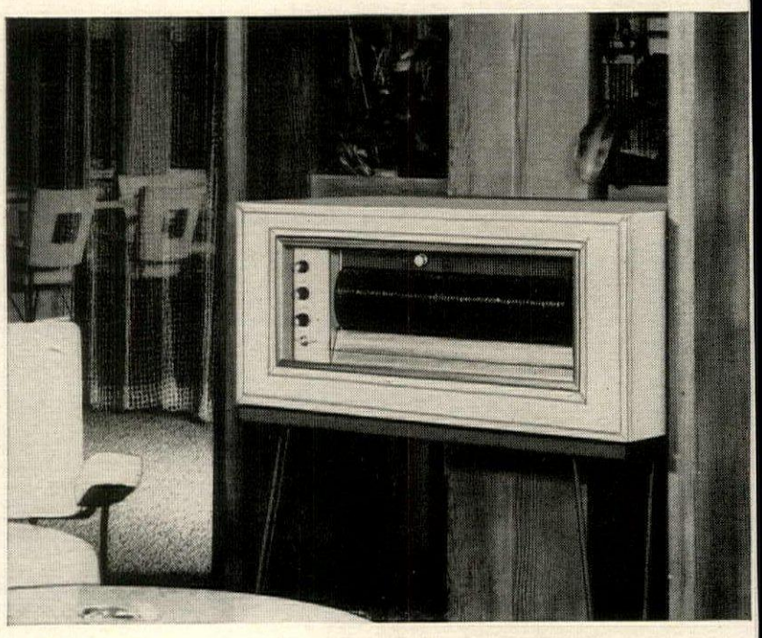




The Seeburg Custom Unit for built-in installations.



The Seeburg Console.



The Seeburg Library Unit.

It's so easy to include Seeburg music!

Homes, Apartments, Hotels and Clubs take on new appeal, added value when they include a Seeburg Music System.

The Seeburg Select-O-Matic is that last word in high fidelity. It's truly automatic . . . select your favorite record programs at the flick of a finger. There are no records to handle, no albums to fuss with. That's because the Select-O-Matic holds 100 records, plays up to 400 selections of 45 RPM music when extended play records are used.

For Business and Industry. Whatever the plans on your boards may be, Seeburg will work with you and your client to bring the acknowledged benefits of music to his business. For this purpose Seeburg has developed a work and atmosphere music library specifically designed for industrial and commercial use.

Write. There's a Seeburg Distributor nearby to tell you all about Seeburg High Fidelity Music Systems, the new Seeburg Music Library and the revolutionary Seeburg Plan.



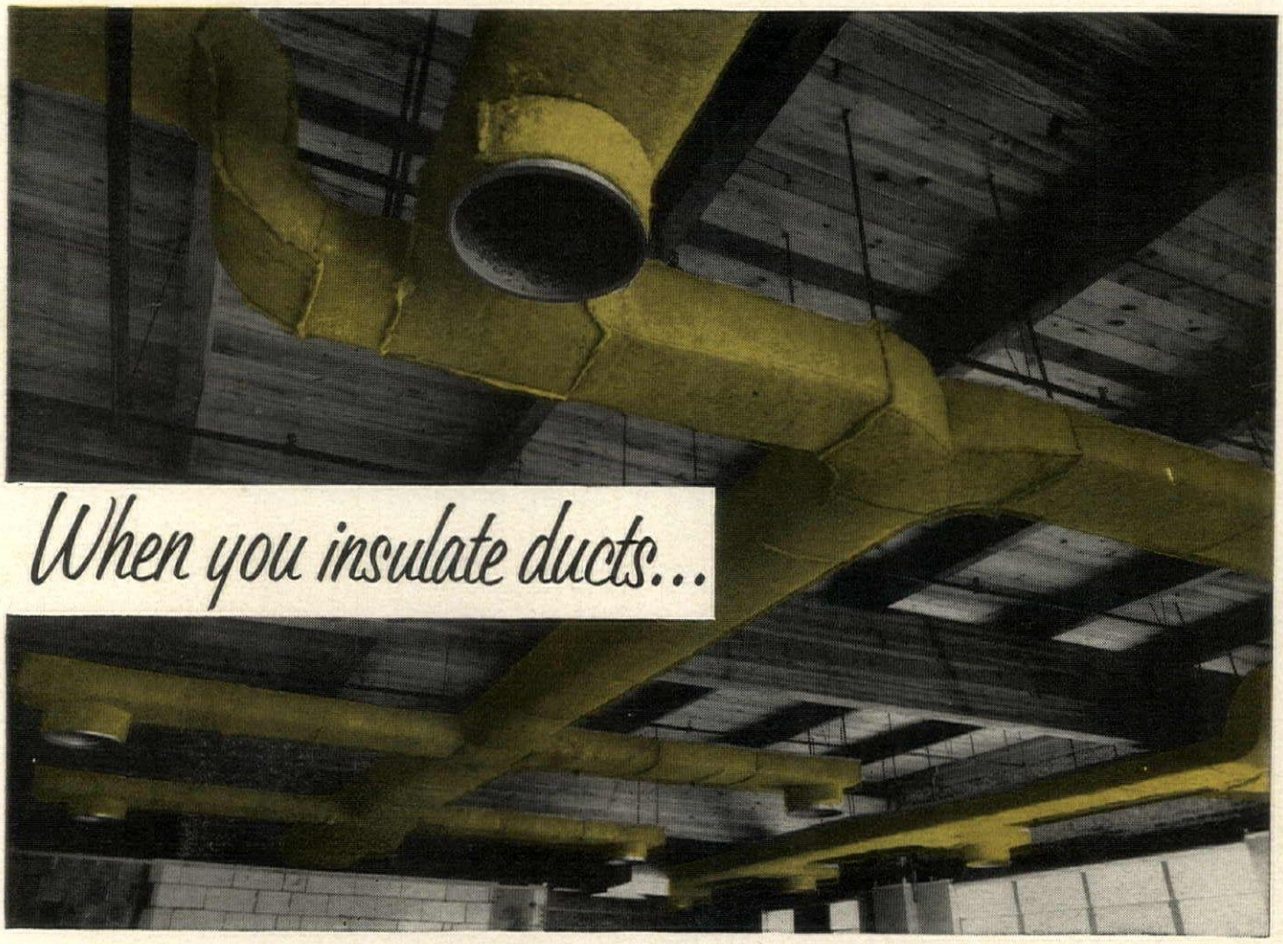
Seeburg Background Music Library. Work and atmosphere music. Monthly refresher service. Manufactured for Seeburg by RCA-Victor Custom Record Division.

WORK AND ATMOSPHERE

SEEBURG
Background Music Service

J. P. Seeburg Corporation, Chicago 22, Illinois

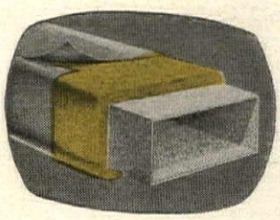
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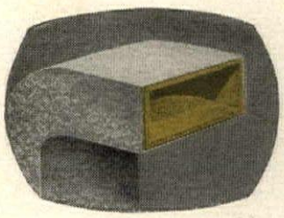


When you insulate ducts...

think of ULTRALITE...*first!*

When you want *performance* you can count on — and prompt *delivery* you can count on — specify ULTRALITE, the only insulation of long glass fibers!





first flexible duct insulation of fine glass fibers on the market! Only Ultralite, introduced in 1945, has a *10-year* record of completely satisfactory performance — without losing thickness or thermal efficiency.

first flexible duct insulation of fine glass fibers available with factory-applied vapor barrier. Ultralite is still available plain or with a wide choice of facings — some for appearance, some as vapor barriers.

first flexible glass fiber insulation to spring back to full original thickness every time after being compressed!

first flexible duct liner of fine glass fibers. Recent examinations of Ultralite Duct Liner installed 7 years ago show no indications of air erosion.

first flexible duct liner on the market with spray coating (1948).

first flexible glass fiber insulation available nationwide at convenient stocking points for immediate delivery. And ULTRALITE is still available *more* readily, in *more* cities, than any other glass fiber insulation!

Ultralite distributors are listed in the Yellow Pages in 57 Cities.

GUSTIN-BACON *Manufacturing Company* **gb**

Molded glass fiber pipe insulation • Pipe couplings and fittings • Thermal and acoustical insulations

258 West 10th Street, Kansas City, Mo.

FLUSH INSTALLATION

above all else

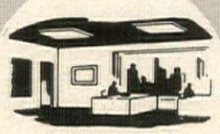
CUT OVERHEAD GLARE



"NEVA-GLARE" for Stores



"NEVA-GLARE" for Institutions



"NEVA-GLARE" for Commercial Buildings



"NEVA-GLARE" for Factories & Laboratories

specify...

marlou "NEVA-GLARE" LIGHTING FIXTURES with Plexiglas Diffuser

Easy to install • Easy to clean and maintain

Solve your lighting problems with "NEVA-GLARE" fixtures—diffused, glare-free yet bright lighting, that makes for relaxed efficiency. You will know the moment you turn them on.

MARLOU'S new line of "Neva-Glare" Plexiglas units are opthalmically designed to diffuse light evenly with an absolute minimum of light absorption. "Neva-Glare" fixtures are made to blend into the surroundings and the Plexiglas is easily removed for cleaning and maintenance, no tools required.

Available in square or rectangle units that are adaptable for flush or recessed installation. E.T.L. Curves on request

"Above all else...MARLOU is Quality Lighting".

RECESSED INSTALLATION

Some select territories open to recognized Manufacturers Agents

ARCHITECTS - BUILDERS
Specify "NEVA-GLARE" the modern way to modern Lighting.

marlou
LIGHTS, INC.
FANWOOD NEW JERSEY



A complete line of lighting fixtures for Fluorescent, Slimline and Cold Cathode Lights.

Write For Complete MARLOU Catalog #1007

DATES

Conference on Religious Architecture, sponsor by the Iowa State College Dept. of Arc tecture, **Feb. 8-9,** at the college, Ames, Io

Industrial Ventilation Conference, Feb. 14- Michigan State College, East Lansing, Mi

American Concrete Institute, 51st annual c vention, **Feb. 21-24,** Hotel Schroeder, M waukee.

Conference on Church Architecture, sponsored the Church Architectural Guild of Ameri and the Council of Churches' Bureau Architecture, **Feb. 23-25,** Netherlands Pla Hotel, Cincinnati.

National Adequate Wiring Bureau, annual c vention, **Feb. 24-25,** La Salle Hotel, Chica

American Association of School Administrat will hold three regional conventions this ye in lieu of one national meeting: **Feb. March 2,** St. Louis; **March 12-16,** Denver; **Ap 2-6,** Cleveland. Each convention will featu an architectural exhibit.

Associated General Contractors, 36th annu convention, **March 14-17,** New Orleans.

National Motel Show, midseason exhibit merchandise and services employed by mo operators, **March 22-24,** Atlanta.

American Institute of Architects, board of rectors meeting, **March 29–April 1,** AIA hea quarters, Washington, D. C.

American Institute of Planners, annual meetin **March 30–April 2,** Muehlebach Hotel, Kans City, Mo.

World Plastics Fair and Trade Exposition, inclu ing exhibit of building materials, **April 6-** National Guard Armory, Los Angeles.

Building Officials Conference of America, annu meeting, **April 18-21,** Milwaukee.

Western Mountain District, American Institute Architects, regional meeting, **April 28-30,** Cam back Inn, Phoenix.

South Atlantic District, American Institute of Arc tects, regional meeting, **May 5-7,** Fort Sumt Hotel, Charleston, S.C.

National Restaurant Assn., annual conventi including, for the first time, an architectur and remodeling exhibit, **May 9-13,** Navy Pie Chicago.

National Housing Conference, annual meetin **May 16-17,** Statler Hotel, Washington, D.

National Materials Handling Exposition, May 16-2 Chicago.

basic material in a great new building trend

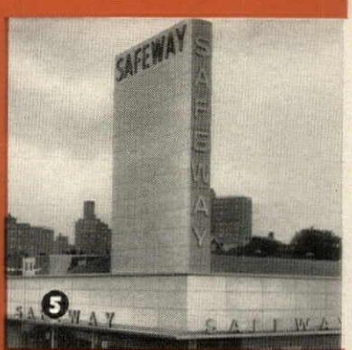
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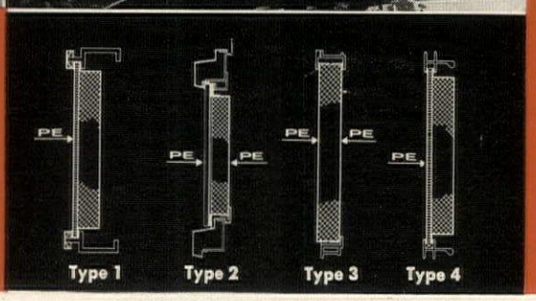












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REPRESENTATIVES—Write for information regarding open territories.

The buildings shown above are: (1) **Ford Central Staff Office Building.** Architect: Skidmore, Owings & Merrill, New York. (2) **RCA's Cherry Hill Project.** Architect: Vincent G. Kling, Philadelphia. (3) **Buffalo Airport.** Architect: Harry A. Morris, AIA, with Thomas B. Bourne Associates, Inc. Consulting Engineers, Washington, D. C. (4) **Wyeth Laboratories' Home Office and Research Unit.** Architect: Skidmore, Owings & Merrill, New York. (5) **Safeway Store.** Architect: Wechsler and Schimmenti, New York.

Typical insulated PORCELPANELS for curtain wall construction (sectioned above) include: Type 1—Flat face panel used for Ford Office Building; Type 2—Corrugated face used for RCA Cherry Hill Project; Type 3—Double face used for Buffalo Airport; Type 4—Flat face used for Wyeth Laboratories.

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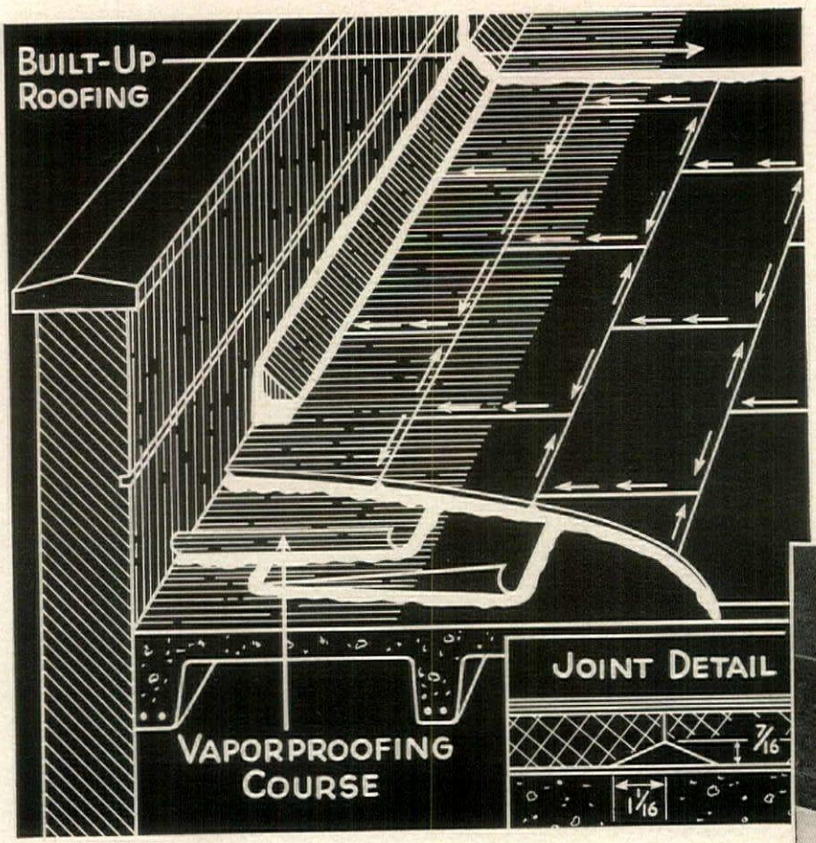
BEAVER FALLS, PENNSYLVANIA

WRITE for Bulletin 1154 which includes data helpful to the architect designing with porcelain enamel.

SEE OUR CATALOG IN SWEET'S

EXCLUSIVE NEW CHANNELING

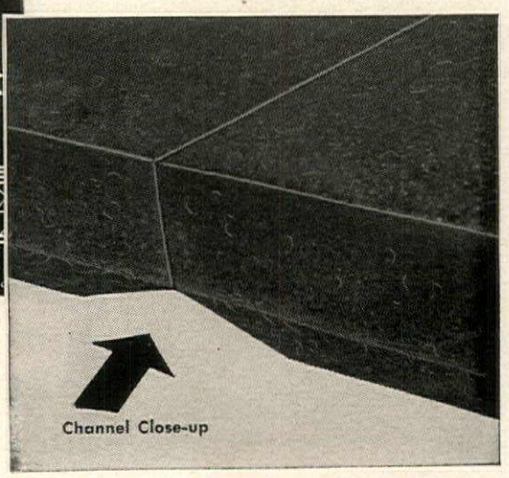
has no equal in guarding against



1. Blistering

2. Separation of felt and insulation

This shows how Celotex Channel-Seal Roof Insulation prevents build-up of high-pressure air pockets. Pressures due to temperature differences are constantly being equalized by movement of air through the channels. This channeling principle of roof protection has been proved effective by years of use on jobs of every type and size.



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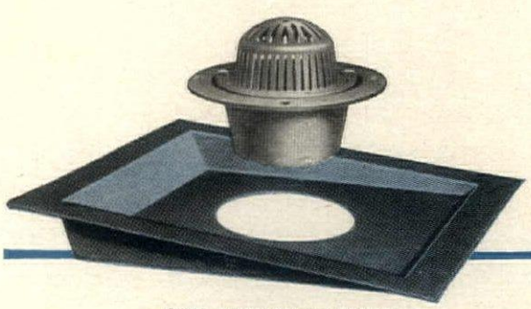


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Steel Deck is SAFEST because it's STEEL . . . it's the most PRACTICAL because it's LIGHT WEIGHT . . . and it's the most logical material to use because it costs less than any other type of roof construction. Steel Deck's light weight permits substantial savings in the roof supporting structure. Steel Deck can be insulated to the exact degree to meet local requirements . . . total dead load of completed roof will prove to be less than any other type of construction in any given locality. New type vapor seal in Mahon Steel Deck Roof eliminates pitch seepage in case of fire and permits additional savings in over-all roof cost. Mahon Steel Deck is available in Galvanized or Enamel Coated Steel . . . stiffening ribs are vertical—no angular or horizontal surfaces where troublesome dust may accumulate. When installed, triple-thickness vertical ribs at interlocking joints 1′-0″ on centers provide greater structural strength. Mahon Enamel Coated Steel Deck has a phosphate-bonded finish which is baked on at 350° F. prior to roll-forming. Check and compare these features when selecting Steel Deck—see Sweet's Files, or write for Catalog B-55-A.



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Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4″, 5″, and 6″ conductors.

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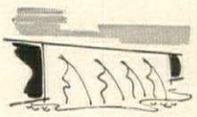
Manufacturers of Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms; Insulated Metal Walls of Aluminum, Stainless or Galvanized Steel; Insulated Metal Wall Panels; Rolling Steel Doors, Grilles, and Automatic Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters.

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Ore and minerals found throughout the West are important to many concerns seeking an industrial site.



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It's a distinct advantage to be able to find local, reliable workers who are "rooted" in this western country.



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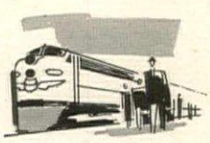
The "wide open spaces" are ideal for healthful living and a happy home life; a factor to consider in management-employee relationship.



RECREATIONAL OPPORTUNITIES

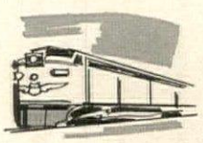
From the top down, all employees can enjoy a fuller life where there are places close by for fishing, hunting and other outdoor recreation.

and TRANSPORTATION



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If interested in an industrial or commercial business site within the area served by U. P., write Industrial Properties Department, Room 353, Union Pacific Railroad, Omaha 2, Nebraska, for confidential information—or contact your local U. P. freight representative.

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LETTERS

V W F & S

Forum:

The Voorhees, Walker, Foley & Smith story (AF, Dec. '54) is unique.

This extraordinary firm has developed an organization that can tackle any architectural or engineering problem. They have undertaken a staggering volume of work and have maintained the highest standards in executing it. It is a great firm and a challenge to all of us.

JOHN WELLBORN ROOT, *FAIA*
Chicago, Ill.

GLASS BANK

Forum:

I have had the pleasure of reading the story on the Manufacturers Trust Co.'s new building which appeared in the December FORUM.

While, naturally, we all could criticize something the other man does, we have to admit this is a very outstanding job which deserves all the credit it is receiving. Presentation of the bank in your magazine will be helpful to a great number of architects, as a lot of good suggestions can come from it.

J. B. GANDER, *president*
Bank Building Corp. of America
St. Louis, Mo.

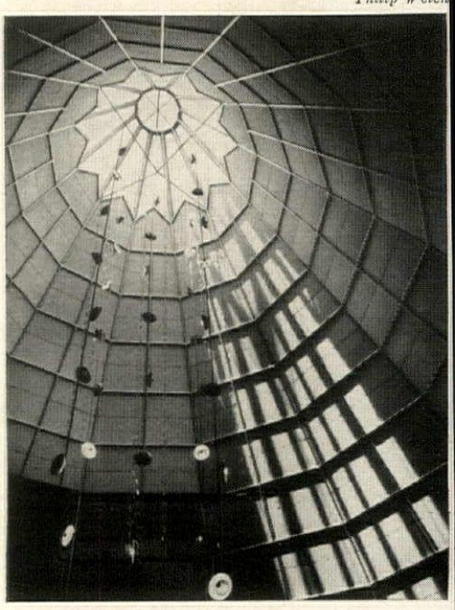
MODERN CHURCHES

Forum:

A word of praise for the churches shown in your December issue, and especially those of Bruce Goff and Donald Powers Smith, in which daylight is used with such fine effect. Goff's wigwam is very simple, but what sensitivity there is in allowing the unfiltered light of day to break over the divisions in the roof inside and then diffuse through the entire interior! His ridiculous-sounding lighting fixtures actually resemble stalks of sunflowers or hollyhocks mounting toward the light, catching it or silhouetted against it.

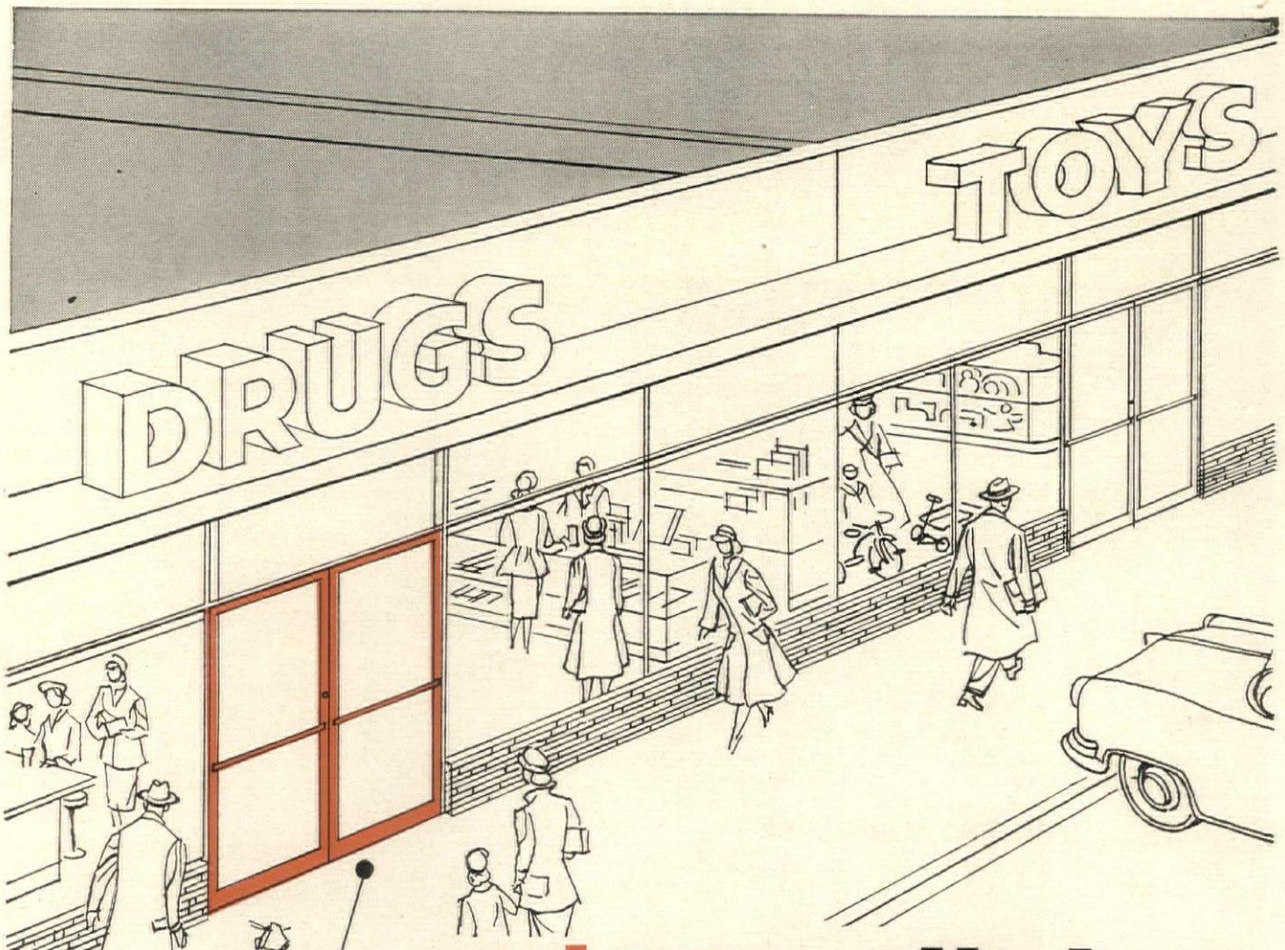
Smith's placing of the tall cross and

Philip Welch



Goff's hollyhocks

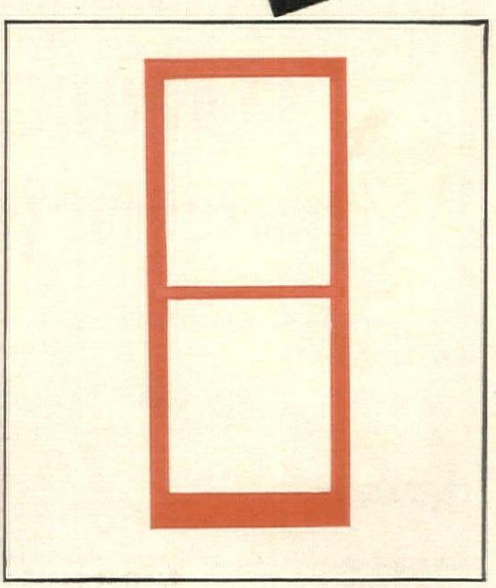
continued on p. 62



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LOS ANGELES 39, CALIFORNIA

a pilot's eye view of the San Francisco International Airport

Basic Plan by Public Utilities Commission, City & County Of San Francisco — *Design by Wm. P. Day, Architect-Engineer*



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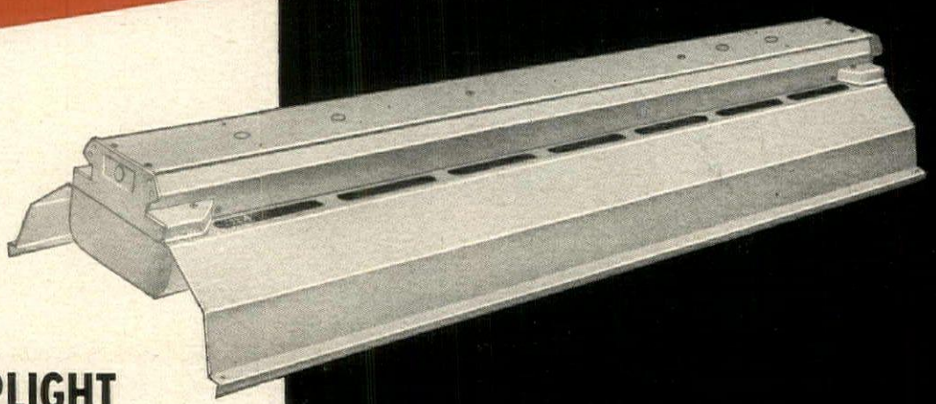
*Reg. U.S. Pat. Off.

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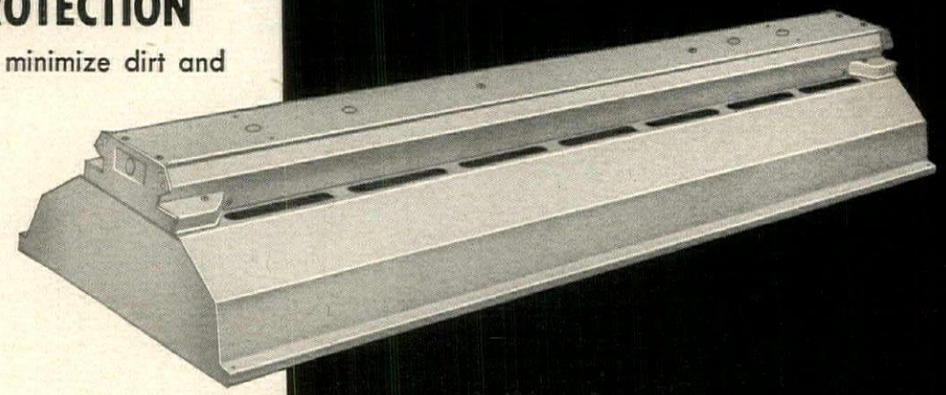
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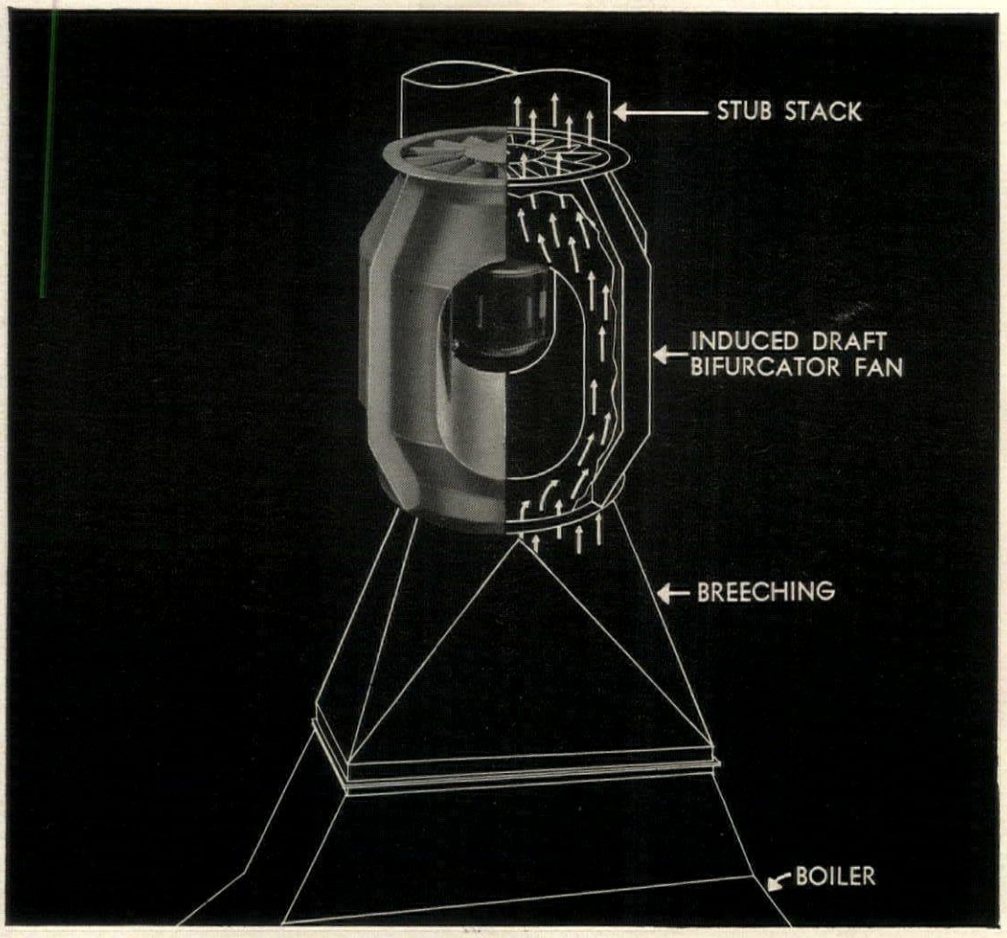
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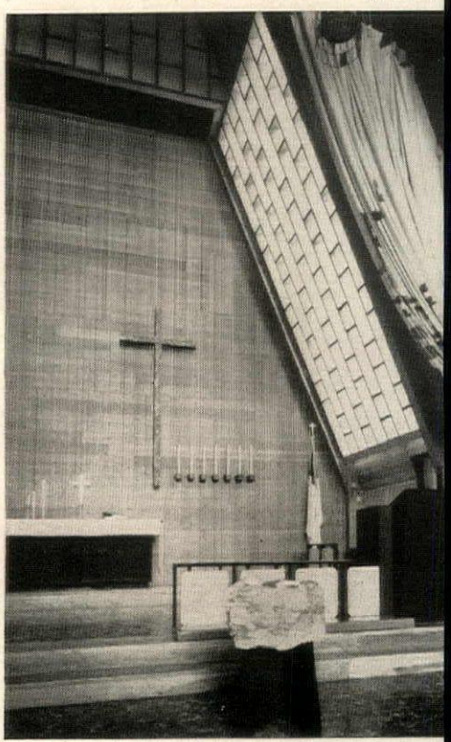
CITY ZONE STATE

ATTENTION OF MR.

LETTERS

Continued from p. 58

Mac Mizu



Smith's sail-like curtain

the candle holders asymmetrically against boarded wall over which a directed dayligh ripples is a genuinely imaginative and artisti work. The use of the curtain is unique an very good. Why have so very many archi tects, in designing monumental interiors, ne glected the use of great patterned sail-lik curtains, not as screens but merely as way of qualifying the interior light, of givin value to otherwise undivided spaces, an of providing informality and textural con trast in settings otherwise tending to be little prearranged and stodgy?

WALTER C. KIDNE
Philadelphia, Pa.

Forum:

We are very happy and thrilled to hear o your article concerning our church buildin (AF, Dec. '54). I am especially happy, per sonally, not only because of this article, bu also because of the splendid service FORU performs in promoting the cause of goo architecture. . . .

DAVID A. E. SWARD, *pastor*
Christ the King Lutheran Churc
Van Nuys, Calif.

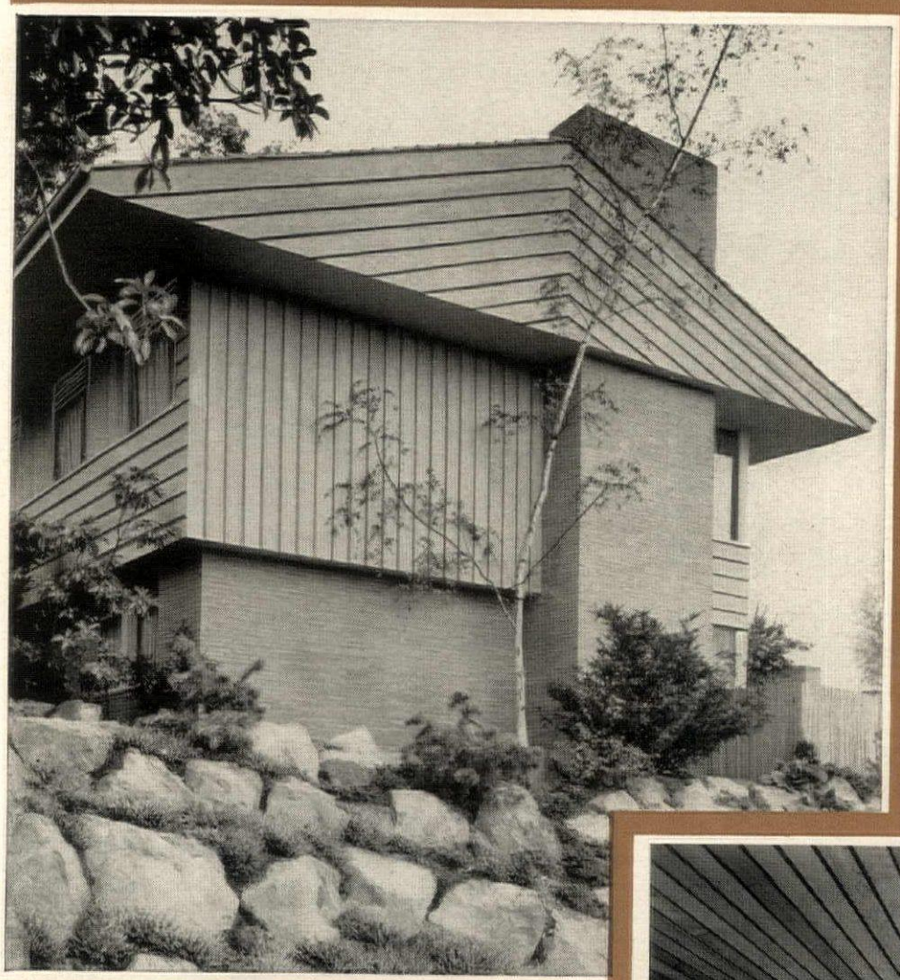
SAVE THE CONCOURSE

Forum:

Please be good enough to convey the fo lowing appeal to the chairman of the Ne York Central Railroad for me.

"It is rumored that you and the director contemplate pulling down the Grand Centra concourse (AF, Nov. '54). Please don't le it be said you had anything to do with suc a sacrilege. Surely you must realize what means to New Yorkers, to the nation and t

continued on p. 6



EXTERIOR: A Seattle architect designed standard sizes of Western Red Cedar Siding into the harmonious pattern at left.

INTERIOR: An atmosphere of quiet relaxation is given the room below with a soft-spoken ceiling of Western Red Cedar Siding.



interesting uses for *WESTERN RED CEDAR* beveled siding

Design fascinating variety into homes with this finest of all building materials! The graceful shadow lines of Western Red Cedar Siding give a pleasing and distinctive pattern.

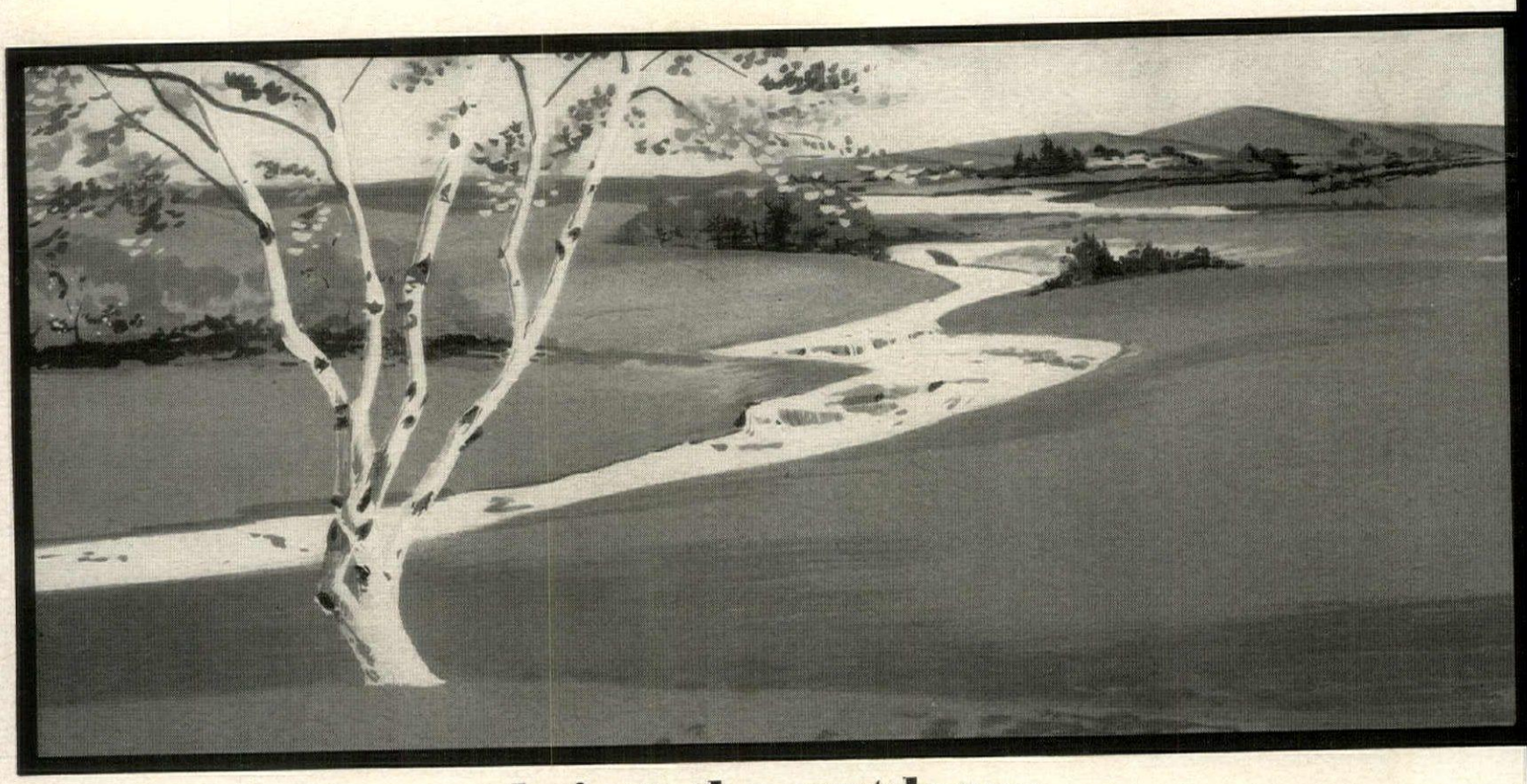
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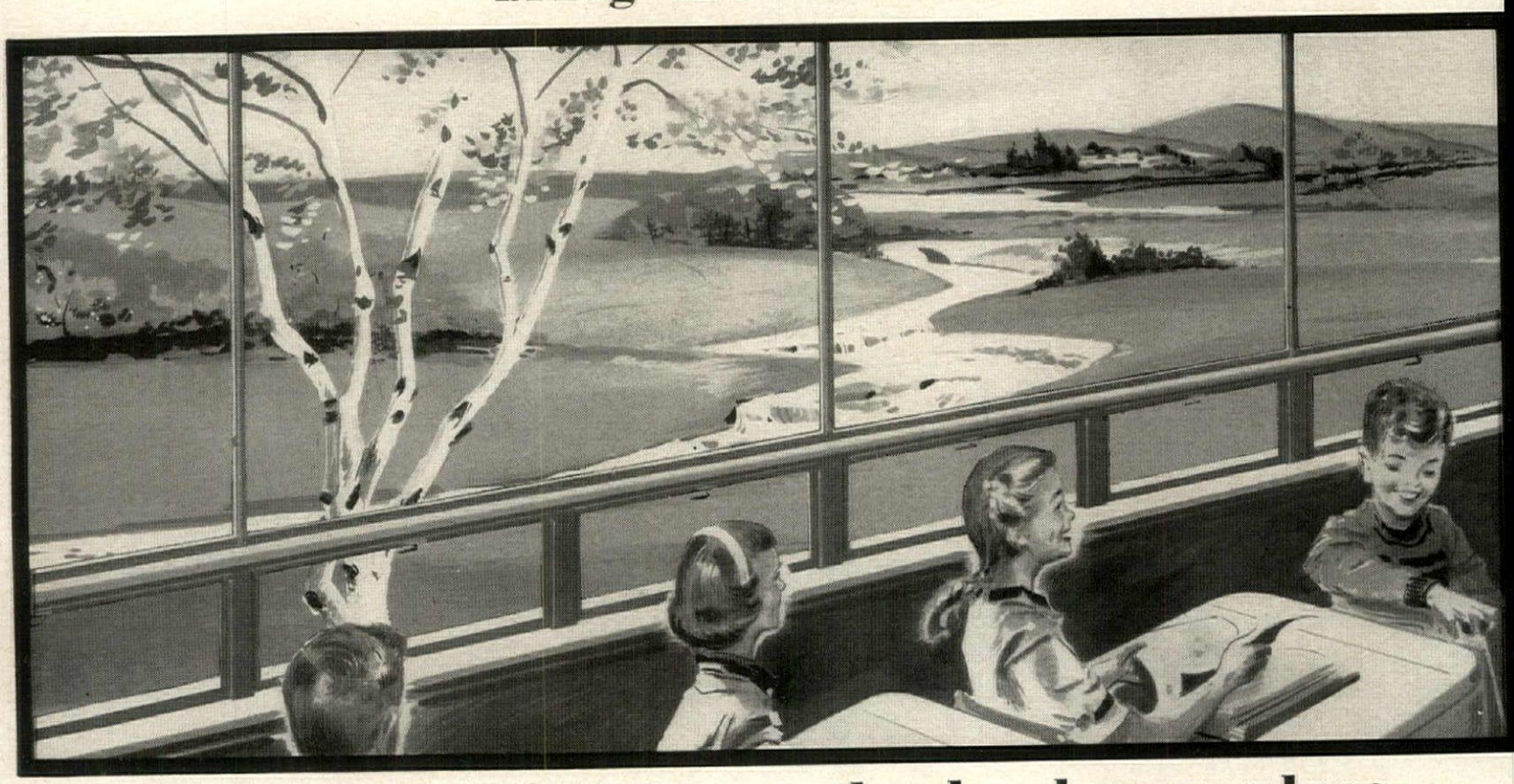
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Saves money, too. Artificial lighting isn't needed so much. Less wall area to paint and maintain. Lower construction costs. In cold climates your daylight walls should be *Thermopane*® insulating glass for the greatest comfort and heating economy. Send for your free copy of "How To Get Nature-Quality Light for School Children". Write Dept. 4225, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio. *®

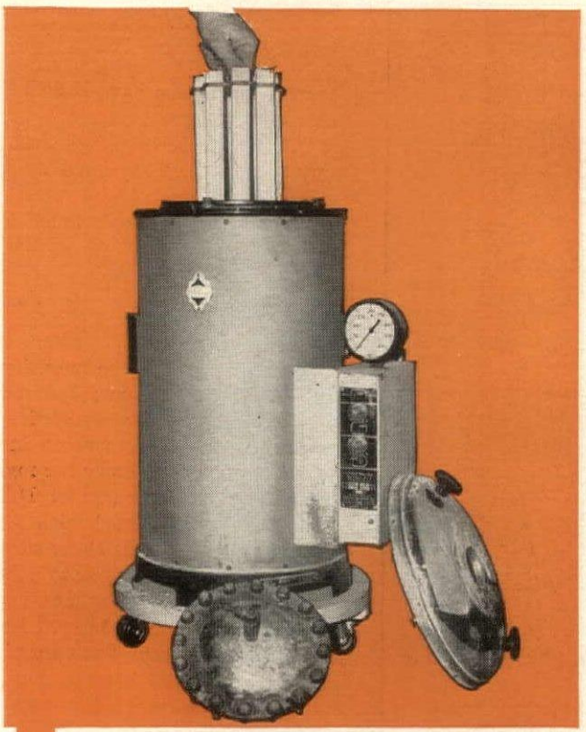
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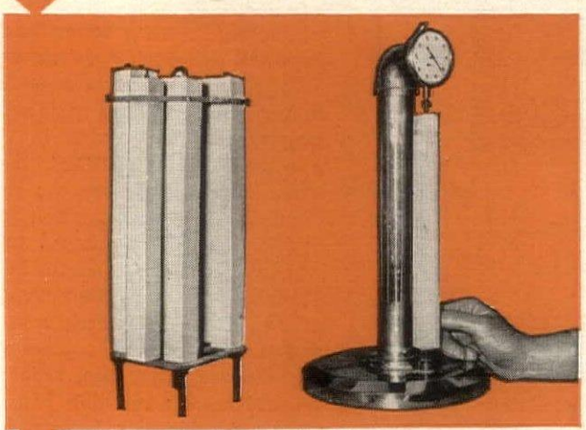
DAYLIGHT WALLS

. . . THAT LET YOU SEE

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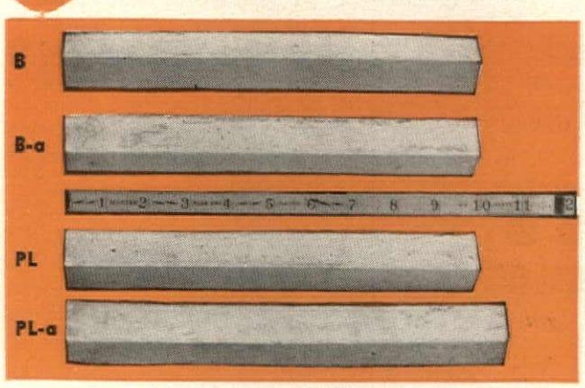


The autoclave test requires the use of a high pressure steam chest (above). Masonry cement bars approximately 1″ x 1″ x 10″ are exposed to 295 lbs. steam pressure, 420° F., for 3 hours. Measurements of the bars are made before and after test as shown below.



Below: Bars of Brixment, and of portland cement and a lime which does not meet the autoclave test. The expansion of the portland cement and lime bar, after autoclaving, is quite evident.

B—Brixment, not autoclaved.
B-a—Brixment, autoclaved.
PL—Cement and lime (1 to 1) not autoclaved.
PL-a—Cement and lime (1 to 1) autoclaved.



BRIXMENT MEETS AUTOCLAVE TEST!

Sound mortar is essential for strong, durable brickwork. To be sound, mortar must be free of constituents which may cause abnormal expansion after long exposure to weather.

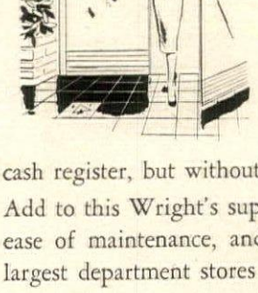
Unsoundness in mortar material is readily detected by the autoclave test. This severe test rapidly accelerates the chemical reaction of mortar materials, and the slightest unsoundness is immediately revealed by excessive expansion.

Brixment easily meets the autoclave test requirements of the Federal and ASTM specifications. It also complies with the strength requirements of both specifications, for Type II masonry cement. Therefore, when Brixment is used, sound mortar and strong, durable brickwork are assured.

LOUISVILLE CEMENT COMPANY
Louisville 2, Kentucky







Smart shopping

The feeling of friendly warmth and modern efficiency one gets from Wright Rubber Tile flooring is a big asset wherever business is conducted. It is an asset you can't ring up on the cash register, but without it a register won't ring for long.

Add to this Wright's superb wearability, its cushion comfort and quiet, its perfect ease of maintenance, and you know why Wright is used in many of America's largest department stores and most fashionable shops.

Please ask for a complete description and color samples of all Wright products. WRIGHT MANUFACTURING CO., 5205 Post Oak Road, Houston, Texas

Battelstein's River Oaks Store, Houston
Architects: Bruce, Kober & Nicolaus, Los Angeles
Flooring Contractor: Charles F. Schilling Co., Houston

WRIGHTEX
WRIGHTFLOR
WRIGHT VINYL TILE
ECONOTILE



WRIGHT
RUBBER TILE
The 100-Year Floor!

LETTERS

Continued from p. 62

most persons who have had to or must pas through your great city.

"There are some things that money can buy or replace. They have become a part o the people.

"Please, please don't touch it."

VERNON LEVY
Kingston
Jamaica, S.W.

Forum:

At the time that the publicity about tear ing down Grand Central first appeared i the papers, with stories of the ghastly ed fices they planned to erect in its stead, wrote the enclosed story for my regular co umn in the Franklinville, N.Y., *Sentine Press.* It was greeted with some hurrah but a few said it was sheer sentiment. Nev ertheless, I wrote a letter to Robert R. Youn and sent it to him together with the columr Less than two weeks later, I had a persona reply. Very formal, but very pleasant. Als very adamant on his stand in the matte though he did say: "I think we all . . . shar in varying degrees your feelings about Gran Central Terminal. It has marked the star and the conclusion of many adventures fo many people. . . ." This was the extent o his bowing to sentiment, and I felt sure tha I had been put in my place by a gentlema who surely knew far better than I the prope disposition of such a fabulous property.

Then, in searching for material for m column just recently, I came across the new clipping with the article in which FORUM was quoted, and the letter to the Central an New Haven RR from the designers an architects. If my bones weren't creaking wit age I would have jumped up and down I hadn't been too far off the beam after all These boys were a little nostalgic and senti mental, themselves, architectural authorit and theories about the place notwithstand ing! In fact, they, too, *begged* that Gran Central be left standing just as it is! O what a terrific kick I got out of this!

ELIZABETH MABR
Buffalo, N.Y.

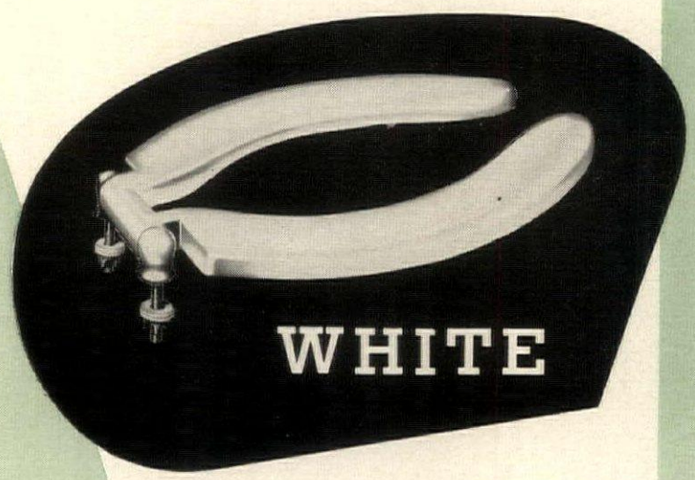
• FORUM argued only for preservation of the cor course—not the entire building. Below are thre paragraphs about Grand Central's "grand room" fro Mrs. Mabry's column in the *Sentinel-Press:*

"Mr. Young, did you ever wander int Grand Central Station late at night, lon after the trains had absorbed the crowds, an listened to your heels make echoes on th stone floors? There was time, then, to loo up at the beauty of the station's ceiling o stars. It didn't even matter that some sai the constellations were backward. They wer beautiful.

"Have you ever taken a few minutes out at the start of a summer, to watch the young sters as they wait restlessly for the train that will bear them off to camp? Some ar scared, some are veterans. All the parent are anxious, the counselors are trying to b in four places at once, the luggage is pile high. But they're in a warm, friendly atmos phere, where even the busiest people stop t

continued on p. 7

FOR SCHOOLS—FACTORIES—
PUBLIC TOILETS



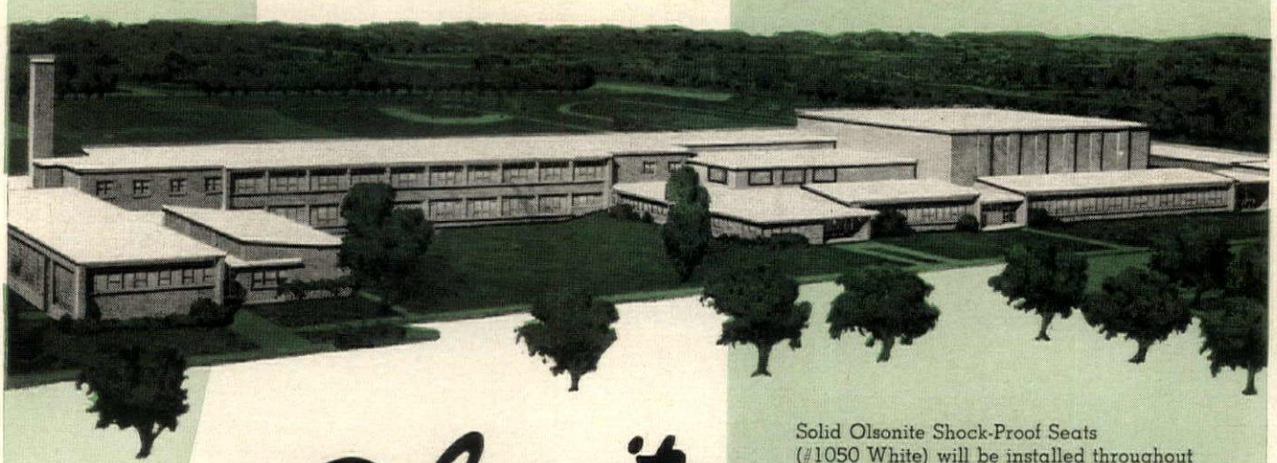
Institutional and Industrial SEATS

They Stay White For A Lifetime of Normal Use—Never Need To Be Replaced!

Now you can specify *white* seats for all schools, hotels, factories . . . all public buildings, without fear of discoloration. Independent research laboratory tests prove that New Olsonite White Shock-Proof Seats will not yellow—even after years of service. These tests also show that Solid Olsonite Shock-Proof Seats have *five times the impact strength of ordinary solid seats.*

New Solid Olsonite Shock-Proof Seats are made of one material—molded into one piece. Even deliberate abuse won't crack, chip or discolor them.

All Olsonite Industrial, Commercial and School Seats are now of shock-proof construction. Specify the seat that STAYS WHITE—New Solid Olsonite Shock-Proof Seats.



SOLID Olsonite

SHOCK-PROOF SEATS

Olsonite's complete catalog is available on request. Please write on your letterhead to:

SWEDISH CRUCIBLE STEEL COMPANY
Plastics Division, 8561 Butler Avenue, Detroit 11, Mich.

Solid Olsonite Shock-Proof Seats (#1050 White) will be installed throughout the outstanding COMMUNITY HIGH SCHOOL in North Chicago, Illinois.

ARCHITECTS AND ENGINEERS:
Warren Holmes Company
Lansing, Michigan

PLUMBING WHOLESALER:
Warren Barr Supply Company
Chicago, Illinois

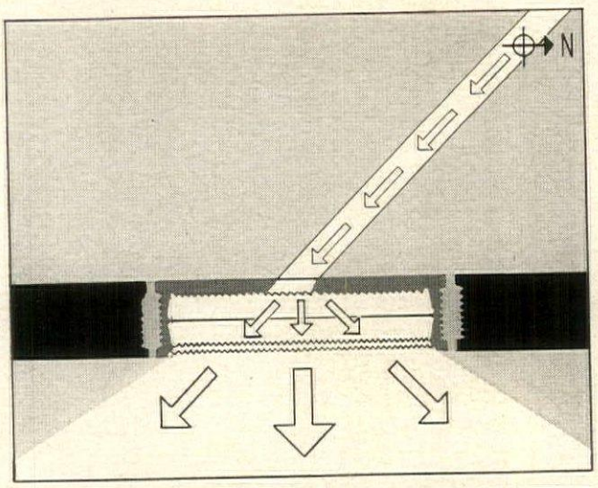
PLUMBING CONTRACTOR:
Commonwealth Plumbing Company
Chicago, Illinois

A-2-54

TESTED AND PROVED

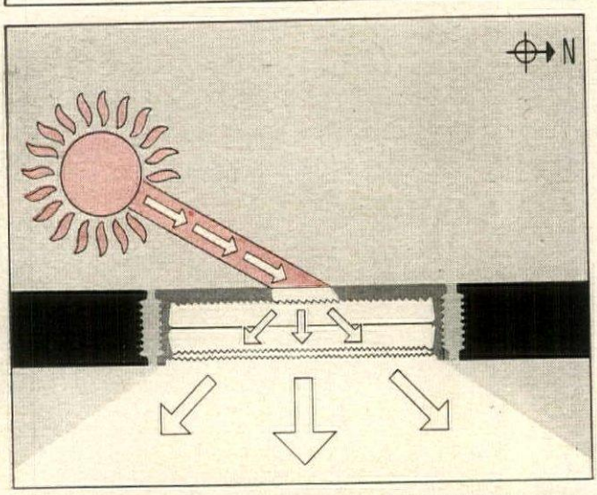
Glass panels bring cool daylight in through the roof

Light-Selective Toplite Roof Panels transmit desirable light; reject hot, glaring sun



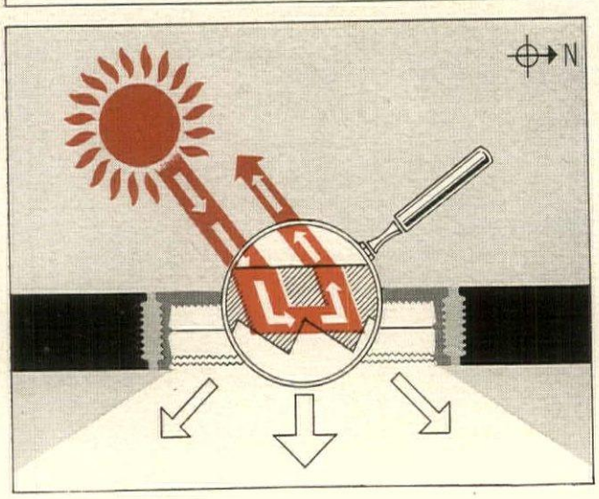
Transmits north light

Maximum transmission of north light is a desirable quality in toplighting because of its uniformity and freedom from glare and solar heat. Note how the prism structure of Toplite affords efficient transmission of north light.



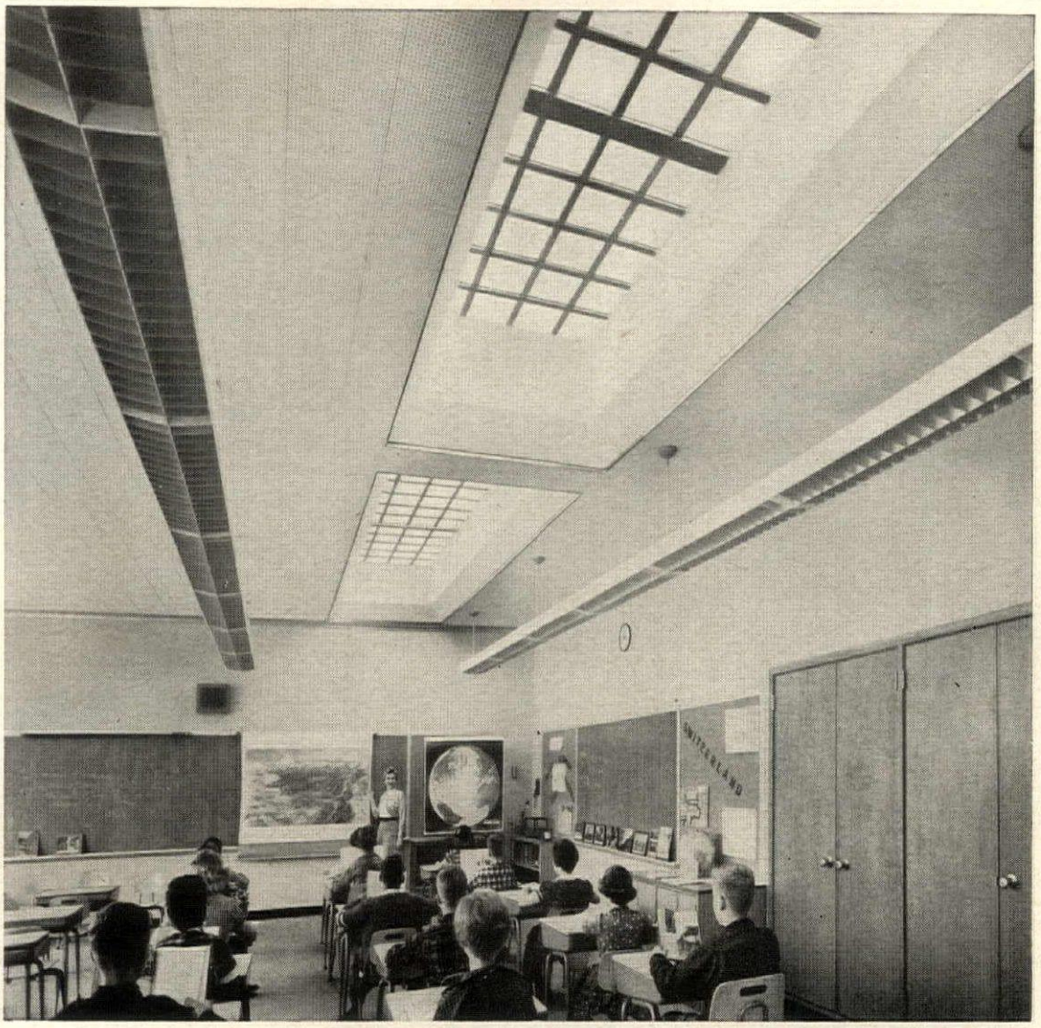
Accepts winter sun

Since low winter sun is comparatively weak in relation to high summer sun as far as glare and solar heat are concerned, maximum transmission is again desirable. This illustration shows how Toplite accepts and transmits winter sunlight.



Rejects summer sun

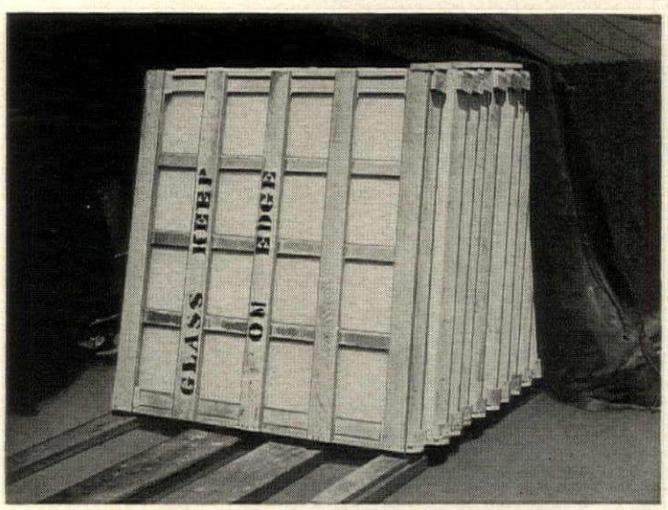
Other materials which transmit north light and low winter sun also transmit high percentages of light during the hot, summer months. Toplite rejects direct light and heat from hot, summer sun, but transmits much of the cool, north light.

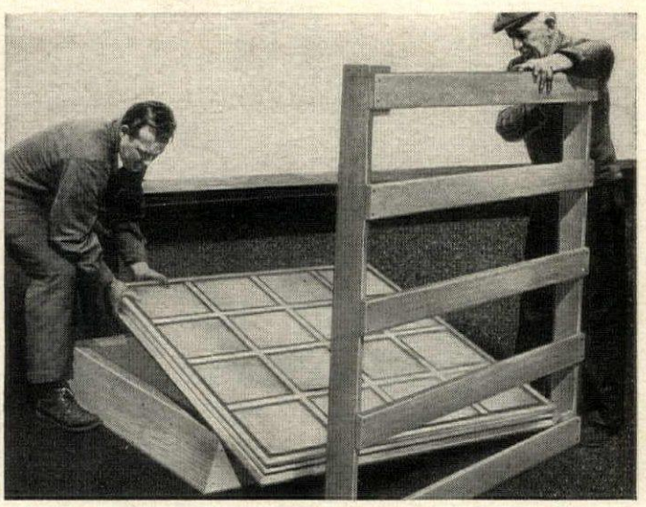


Toplite installation at Campus Elementary School New Jersey State Teachers College at Glassboro— Glassboro, New Jersey
Dr. Thomas Robinson, President

Toplite Panels may be installed in continuous strip, pattern, or in individual panels. Use a Toplite panel as you do a lighting fixture. They permit daylighting of all building areas regardless of location or distance from exterior walls.

Edwards and Green, Camden, N. J., Architects
S. Levy & Company, Camden, N. J., General Contractor





Toplite Roof Panels are factory-fabricated . . . *ready to install*

They are shipped in individual crates marked to show correct orientation and directional positioning; for speed and ease in installation. Panels arrive on job site ready to install. They are set on prepared curbs and anchored ready for flashing by the roofer.

Write for free booklet on Toplite Roof Panels

The complete story of this great new advance in efficient utilization of free daylight is available in this new bulletin. For your free copy write today: Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-2, Toledo 1, Ohio.

TOPLITE ROOF PANELS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

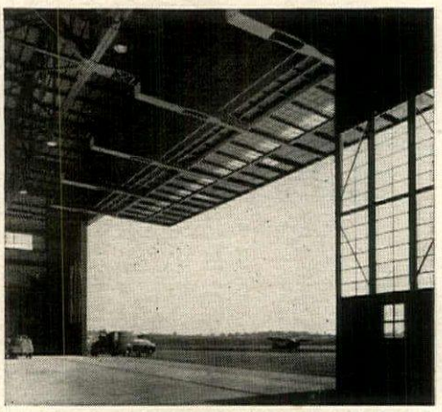


Byrne Canopy Hangar Doors Meet Military Requirements

Byrne Vertical Lift Canopy Doors meet every specification demanded by military standards for a door that is structurally sound, fast-acting, weather-tight, dependable, safe and economical in operation. In addition, they allow full use of all space in the enclosed floor area. In fact, by forming canopies they actually increase the effective working space.

These canopy doors can be made in sections for any width of opening and may be operated individually or simultaneously. They are motor operated, upward-acting with balanced suspension through cables which transmit dead loads to compact counterweights.

Byrne Doors, Inc., with over 25 years experience in the development and manufacture of doors for the aircraft industry, can meet any requirements for hangar doors. The complete line of Byrne hangar doors includes the Vertical Lift Canopy, the Type B Canopy for openings up to 120′ wide by 30′ high, the Type K Canopy for heights up to 55′ with single sections up to 150′ wide and the Motorized Slide Doors. For complete information on the Vertical Lift Canopy Doors or other types available, check Sweet's Catalog or write direct to Byrne Doors, Inc.



Hangar for the Alabama Air National Guard has a Byrne Vertical Lift Canopy Door 78′ wide by 32′7″ high. The canopy door is flanked on both sides by two sliding doors 13′ wide—which are used to admit planes larger than usual.

Byrne has installed, or is currently installing, doors for the Air National Guard at:

Bangor, Maine
Reno, Nevada
Washington, D. C.
Montgomery, Alabama
Springfield, Ohio
Fort Smith, Arkansas
Niagara Falls, New York

BYRNE doors, inc.

1603 E. 9 Mile Road, Ferndale, Detroit 20, Mich.

101 Park Ave., New York 17, N.Y.

Dept. F-8

Cafritz Bldg., Washington 6, D.C.

LETTERS

Continued from p. 66

watch and smile and maybe pass a happ word.

"How will this annual picture stack u against the background of awful hugenes you're planning?"

Forum:

We read with interest the roster of dis tinguished names signed in support of you open letter to Messrs. Young and McGinni —as well as the several equally distin guished ones which appear under thoughtfu refusals. Perhaps it should be noted tha of the 220 endorsers, only 42 are from Ne York. Out-of-town residents who view th concourse as a monument or as a pleasan place to revisit would have little reason t balance against that view the real an tangible damages to the city which ar caused by the malfunctioning of the statio complex—pedestrian and vehicular conges tion, blocking of through-traffic, of bu routes, confusion of mail, express and bag gage trucking, interference of passing crowds with the movements of railroa patrons. We are confident that FORUM would recognize these conditions as blight— the process that chokes and thwarts sec tions of cities, the thing that FORUM always fought—except for a sentimental attach ment to the concourse. Sentiment, being a personal matter, is difficult to debate on fac tual grounds. But if you, and others pro testing a change, will examine the matter further, a limited area of agreement could possibly be reached: *it is impossible to make substantial improvements of the traffic pattern without destroying the present appearance of the concourse*—situated as it is on the centerlines of 43rd St. and Park Ave. Mr. Meeks' reference to its future character as "cluttered with columns" and "forced to resort to signs and colored lights like the subway transfer points" is overstated, but that is beside the point. Essentially, what opponents demand is the concourse exactly as it is.

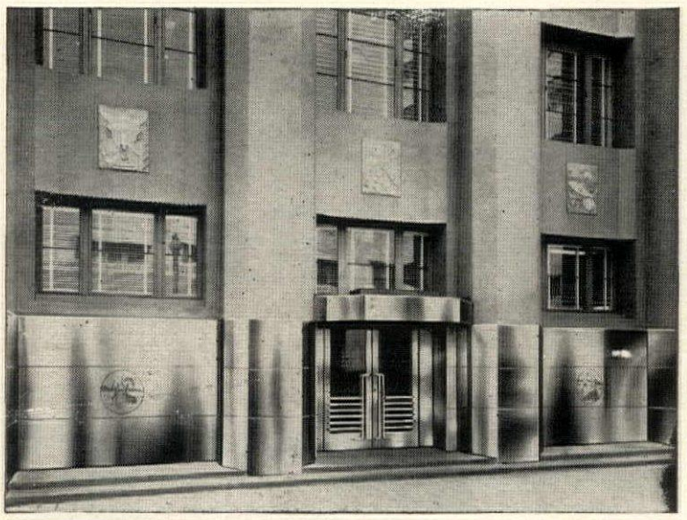
Now let me state some of the points in support of the change. Mr. Meeks mentions stations in Oslo, Goteborg and Rome, and adds that they were built at state expense. That point is important. Unless the state is to take over, the assertion in your letter that the concourse "belongs in fact to the nation" is merely wishful thinking. In private operation, the *railroads* must carry their financial burden, or else they cannot carry freight and passengers. This is fundamental, and thoroughly interwoven with the future of the metropolis. The annual operating loss of the station (given as $24 million) divided among the outstanding shares of the owner—the New York Central Railroad—would average about $3.75 per year, enough (from data at hand) to convert the annual loss of the railroad into a revenue.

Second, it may help our perspective to realize that stations are built by men and have been torn down by them before. To quote Mr. Meeks again, "the great train

continued on p. 74

Wherever people give a building a beating

outside



or inside



That's the place to use STAINLESS STEEL

"INFO" for Architects and Builders

1. "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
2. "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.
3. "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details

Address Dept. B-62

You *have* to design for maximum attractiveness in those areas of buildings which have most traffic—such as building fronts, marquees, entrances, lobby details, railings, etc. Yet those same places are exactly the locations where you need maximum utility, too.

What's the *best* material to use? Just remember that stainless steel—and *only* stainless steel—gives you the nearest-to-perfect combination of satiny beauty and rugged toughness. No other material is as good-looking and at the same time as strong, hard-surfaced and resistant to rust or discoloration. No other material requires as little maintenance, cleans as easily and lasts as long.

In short, whether you're considering Allegheny Metal for just the "hard-wear" spots or for an entire curtain-wall design, keep this fact in mind: *no other material costs as little over the long pull as stainless steel.*

Let us give you any information or technical assistance you may require.

Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.

Make it BETTER-and LONGER LASTING with Allegheny Metal

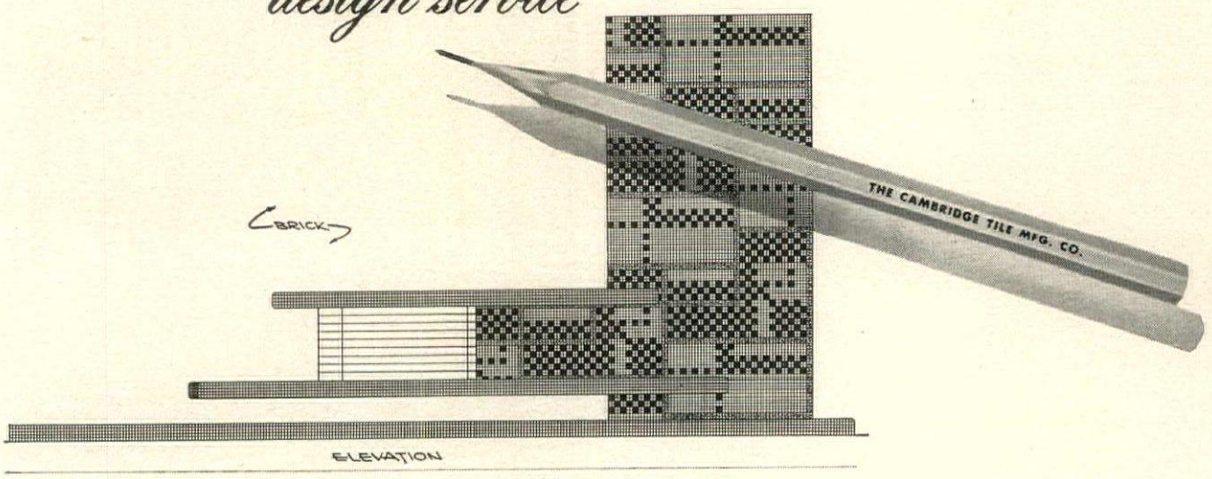
AL TIME-TESTED STAINLESS STEEL

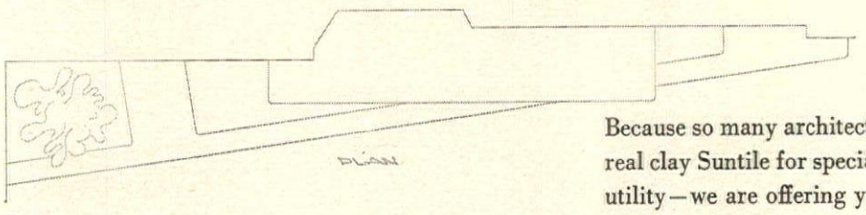
WAD 5209

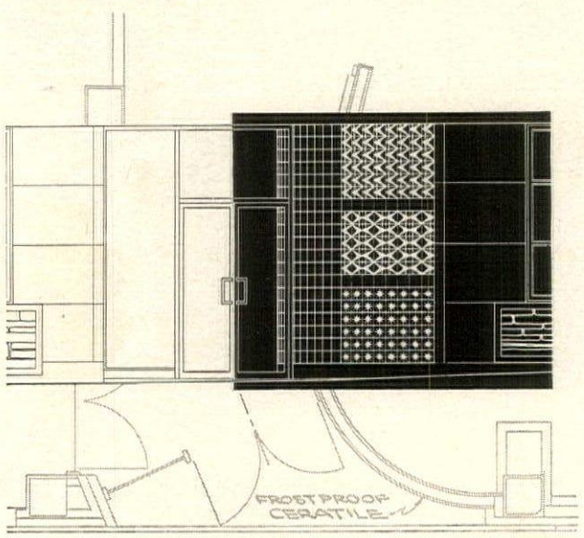
Warehouse stocks carried by all Ryerson steel plants

announcing....

a new COLOR BALANCED **Suntile** design service







FLOOR PLAN
SCALE ¼"=1'-0"

Because so many architects and designers are now using real clay Suntile for special decorative effects—as well as for utility—we are offering you the services of our staff of trained ceramic artists.

These specialists are prepared to execute your own designs faithfully, or to submit suggested treatment in tile to fit your general specifications. They will make careful layouts to help you visualize the completed job, permit accurate estimates, and guide the tile setter—at no obligation to you, of course.

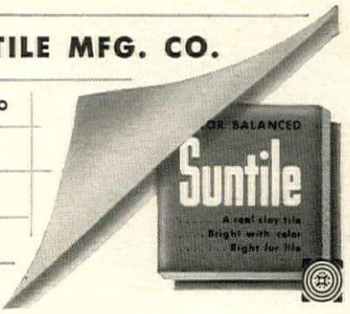
With this service, you can be sure that the finished job will be as fine as the original concept. Your client gets top quality material and good design—plus an installation that is guaranteed by the Suntile dealer who performs the work.

Why not send us your preliminary ideas for new designs in Suntile—or write for more data on Suntile services?

Address: Dept. AF-25.

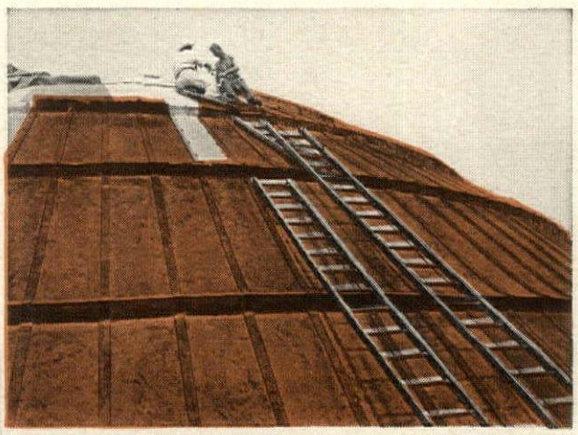
THE CAMBRIDGE TILE MFG. CO.

P. O. Box 71, Cincinnati 15, Ohio

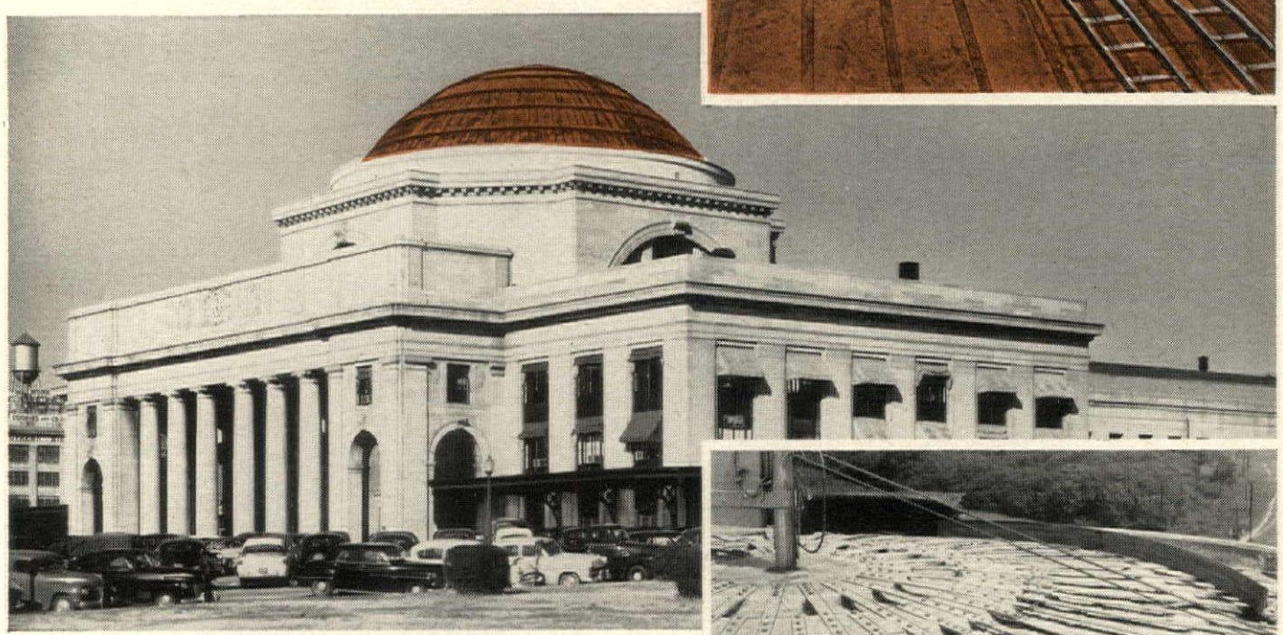


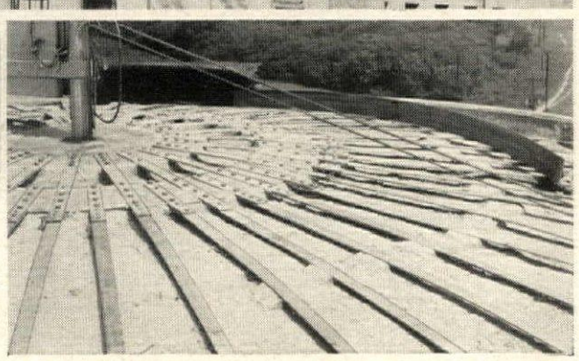
Re-roofing a dome with copper

ROOFING PANS preformed from 20″ x 96″ x 20 oz. gage cold rolled copper sheets were used for the batten seam construction.



COMPLETED COPPER-COVERED DOME which is 94′ 6″ in diameter and 28′ high. Architect: Carneal & Johnston. General Contractor: James Fox & Sons, Inc. Sheet Metal Contractor: N. W. Martin & Brothers. Anaconda Distributor: Gordon Metal Company. All are located in Richmond, Va.





NETWORK OF COPPER ALLOY BARS and angles suspended from the crown help to hold in place the additional structural surfacing required to form the new contour. Angles 3″ x 5″ bent to the radius and curvature of the dome produced the desired shadow lines.

New roof uses 45,000 lb. of Anaconda Sheet Copper . . . assures owner of low upkeep, long service

When the Richmond Terminal Railway Company's Broad Street Station at Richmond, Va., was built, the dome was roofed with a nonmetallic material. Structural movement of the roof covering made frequent repairs necessary. As it appeared this trouble would continue to mount, the owner authorized an extensive study by its architect-engineers resulting in the selection of copper.

Only this time-tested material could economically match the durability of this handsome building, for copper measures its economy by *generations* of service. It requires little attention or maintenance. And, as it grows older, a copper roof acquires a beautiful green patina.

Construction details

Placing a new copper covering over a concrete spherical surface called for special designs which dictated that the major portion of the copper roof be of batten seam construction using cold rolled copper sheets of 20 oz. gage, 20″ x 96″. Inverted bronze channels were employed for the battens. For the crown of the dome, flat lock seam construction was employed using 16″ x 18″ roofing squares of 20 oz. gage cold rolled copper. Edges were pretinned to a depth of 1½″.

When roofing must *last*, ANACONDA Sheet Copper costs *less*. Good design and proper application insure its enduring service. Anaconda building engineers were privileged to assist with the design of this important roofing job. Their counsel is equally available to you in all problems involving sheet copper design and construction. 5457

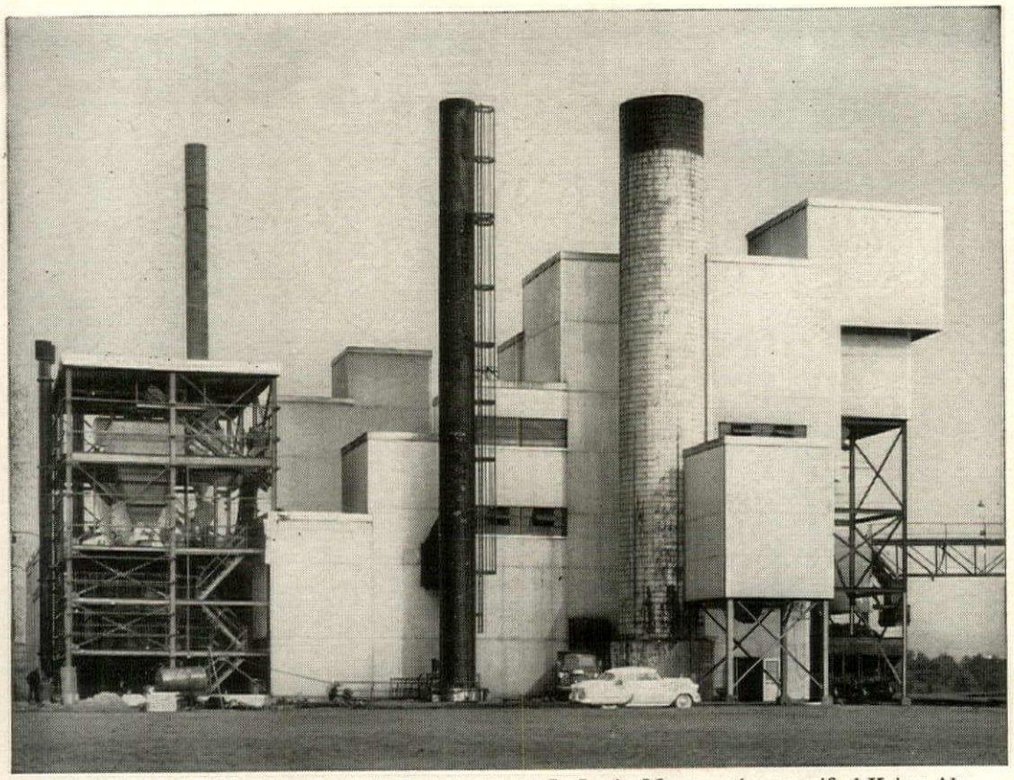


FREE file of drawings—Do you have the FREE Anaconda file of drawings? Nearly fifty drawings show new or improved ways to apply sheet copper. Each is printed on a separate 8½″ x 11″ page, handy for quick-reference filing. This entire series may be obtained absolutely FREE by writing for Portfolio S to: **The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.**

for better sheet metal work use

ANACONDA®

COPPER



MR. MERLE C. KELCE, of the Sunlight Coal Company, St. Louis, Mo. says they specified Kaiser Aluminum corrugated industrial sheet for their Lynnville, Indiana plant (above) because, in his words:

"Aluminum sheet gave us best value"

"ALUMINUM SHEET was an obvious choice for our Lynnville plant," says Mr. Kelce, "because it was lower in cost than any other building material offering so many advantages.

"The corrosion resistance of Kaiser Aluminum sheet was a big plus, because the plant is subjected to corrosive fumes and gases. And of course, aluminum sheet is so strong and durable it will last many years without maintenance of any kind."

Not only does Kaiser Aluminum Industrial Roofing and Siding give extra value at low cost, it provides immediate savings. Its light weight means reduced transportation, handling and erection. In addition, it often requires a lighter, less-expensive under-structure.

For A.I.A. File and complete information contact any Kaiser Aluminum sales office listed in your telephone directory. Or write Kaiser Aluminum & Chemical Sales, Inc. *General Sales Office,* Palmolive Bldg., Chicago 11, Ill.; *Executive Office,* Kaiser Bldg., Oakland 12, Calif.

Kaiser Aluminum

INDUSTRIAL ROOFING AND SIDING

Get all these advantages with Kaiser Aluminum Corrugated Sheet

Light Weight—Reduces transportation costs. So easy to handle that construction is faster, lower in cost. Often permits the use of lighter, less expensive framing.

Strong—The increased depth (⅞") of the corrugations of Kaiser Aluminum Roofing provides greater load carrying capacities over the longer spans required in modern industrial construction.

Corrosion Resistance—High resistance to most industrial fumes. Can't streak with red rust stains. Maintains its attractive appearance indefinitely.

Low Maintenance—Never needs painting. Resists heavy winds and hail.

Cooler, Brighter Interiors—By reflecting hot sun rays, aluminum keeps interiors as much as 15° cooler. Aluminum's high reflectivity insures extra interior light.

Low Cost—Provides a combination of advantages not available in other materials at any price.

LETTERS

Continued from p. 70

shed of the first station, once one of sights of New York, ranked for a wh second to the national capitol." Would —or the editors—really contend that t generation has been deprived of a part its birthright because that shed was stroyed, and the presently debated concou came to pass? How would the city ha lived with the railroad yards of which train shed was part and parcel; or h will the next generation put up with present layout? Would the South Side Chicago indicate the answer?

I mean no disrespect to the editor's su gestion that the world's best brains be to work by means of a competition, I wonder whether the editors realize the gr technical complexity of the problem. Wi out thorough study of the facts, endl cost and operating analyses, solutions competitors would almost certainly have be glib and useless—as they have been some recent contests. In any case, greater handicap could be imposed up design than a mandate to retain the prese concourse.

So, for the moment, let us give the ra road managements and their technicians chance. Let us see what they come up wi Will it stand up as an answer to the pro lems of the city—and, if so, will it sho promise of esthetic and emotional conte as good as what has been built into t present station? If not, I shall ask for t privilege to add my name under FORUM petition.

ALFRED FELLHEIMER
Fellheimer & Wagner, architec and engineers
New York, N. Y.

HOW TO WRITE A BOOK

Forum:

It has been explained to me how Richa Neutra wrote his book, *Survival throug Design.* He kept a large box near his de and every time any bright thoughts occurr to him, he would write them down on a pie of paper and throw it into the box. Event ally he had a large box of paper from whi he constructed his book.

I think I shall improve this method. I pr pose to have two barrels or rather one barr and a small keg of salt. Into the barrel will heave whatever bright ideas occur me and over each layer of paper I wi sprinkle some salt. When I get through, will have either a book or some synthet sauerkraut.

ROGER ALLEN, *archite Grand Rapids, Mich.*

MODERN ST. JOHN

Forum:

Regarding your question, "Should St. Joh the Divine be finished in modern?" (AF, De '54), my answer is, "Yes, if the value of th existing work can be matched or surpasse by the modern style."

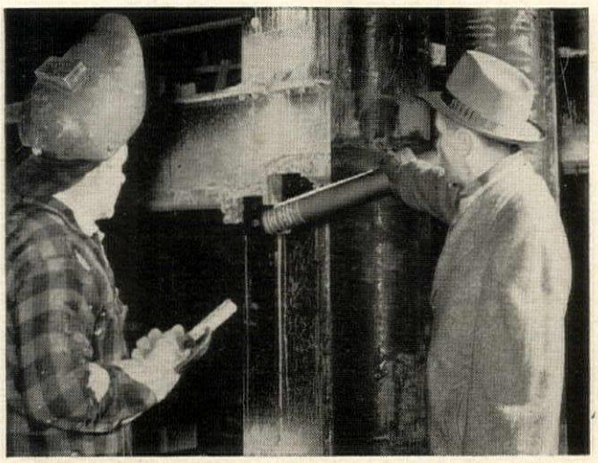
I am sure that esthetic conflicts of styl

continued on p. 7





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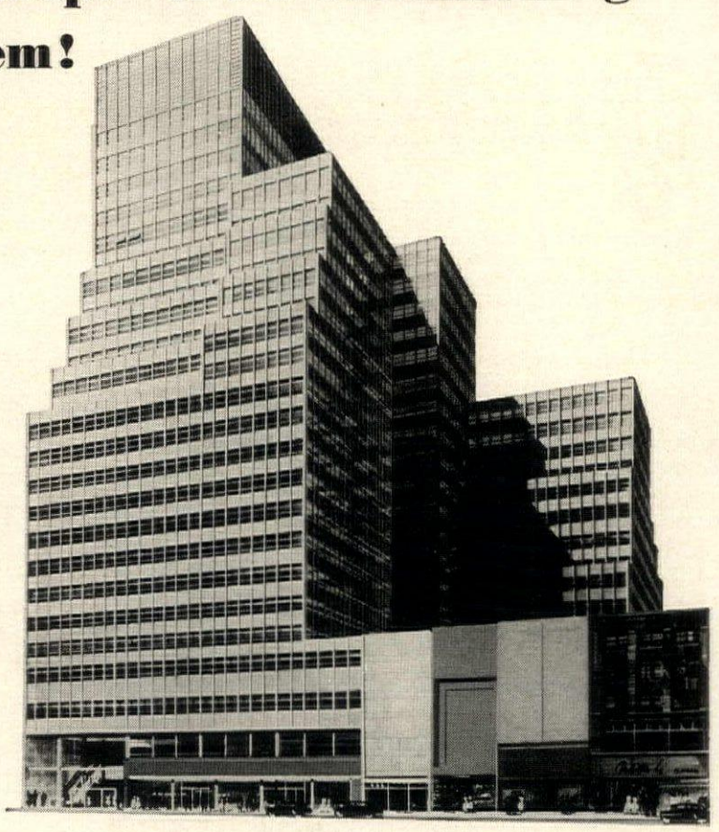
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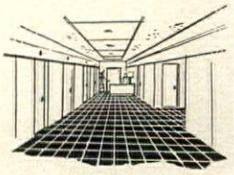
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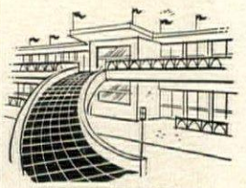
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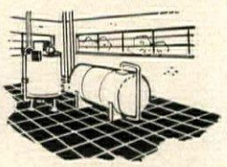
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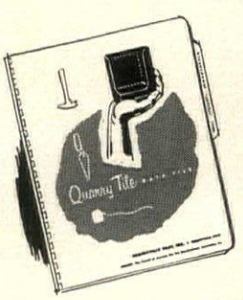
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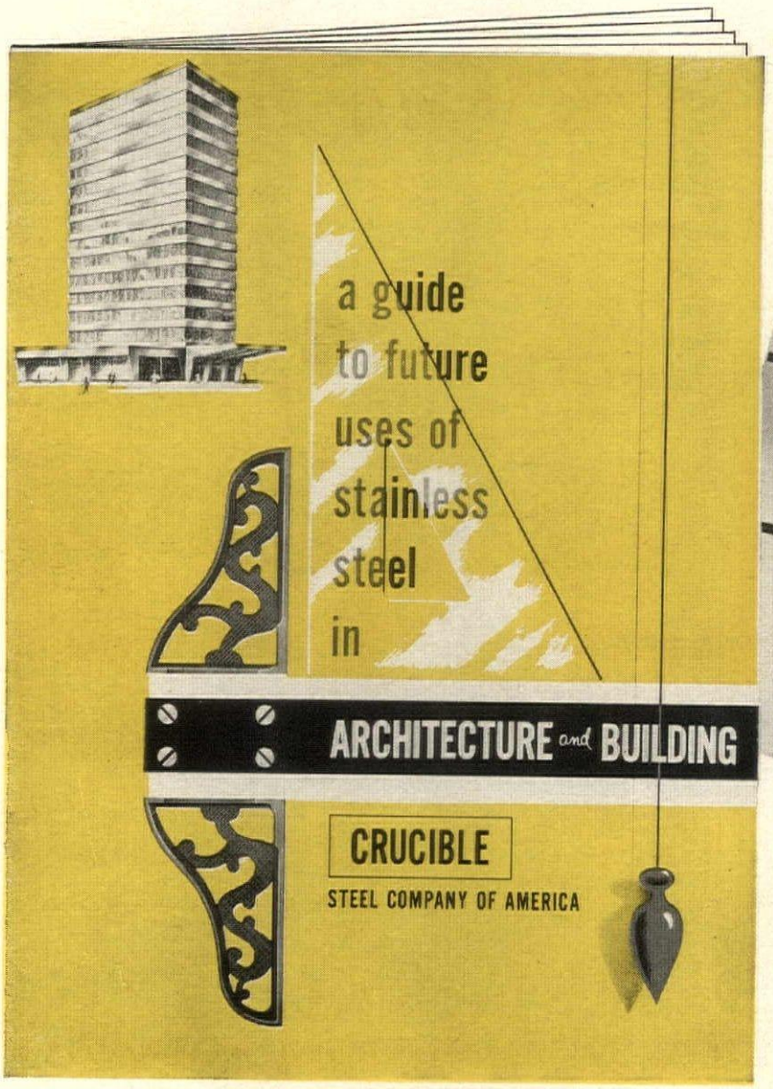


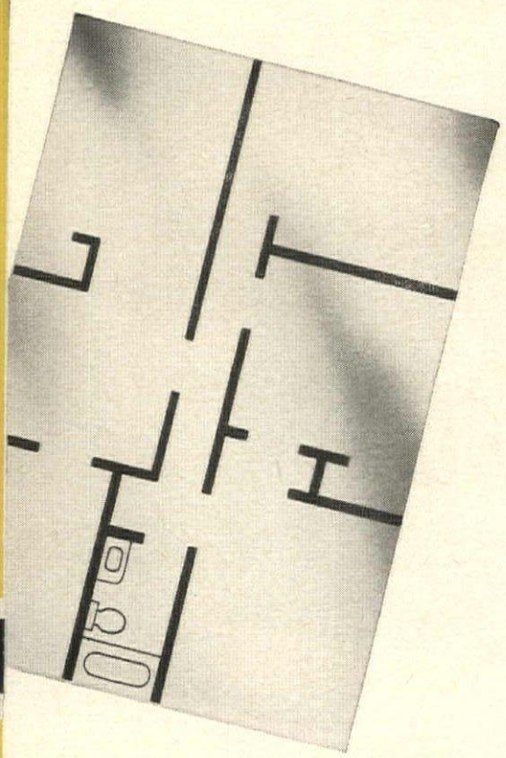
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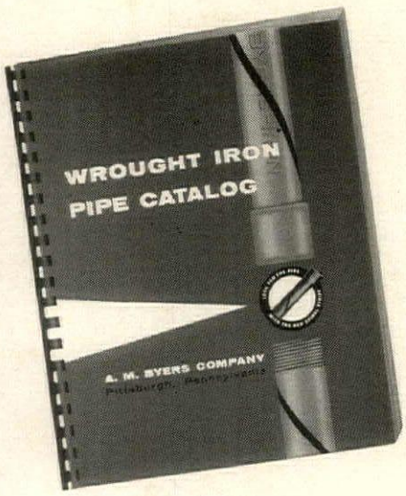
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LETTERS

Continued from p. 74

can be resolved easily by architects. What remains in the discussion raised by your question will generally divide itself into two sides: there will be those who will say with you, "Yes, because contemporary is cheaper and just as good or better architecture," and there are those who will say, "No, because contemporary has not the tradition or symbolism to express a religious architecture."

I wonder if you would consider still another side which, while affirming your position, destroys the total argument, your side included, for it can be shown to those taking the negative side that the reason modern architecture is without religious values is because modern architecture does not spend dearly for them. That, of course, would kill the reasons for your stand, and you may not think the gain in adherents to your side is worth the sacrifice of a pet belief.

FORUM, it seems, subscribes to the philosophy that great architecture is not necessarily costly. I am of the opinion that great architecture cannot be other than costly. Aside from the contribution of thought required from the architect, any great and beautiful building needs the efforts of craftsmen and mechanics and the sacrifices of sponsors, all in large amounts. In our day, this means the expenditure of large sums of money.

I completely agree that the past should *not* be copied and that we should pattern our lives and our architecture along contemporary lines—but not because the contemporary fashion is cheaper. Rather, I would support contemporary architecture because it is more expensive. I decry traditional architecture not for its values but for its vanities. I decry contemporary architecture for the same reasons. Both eclecticism and modernism are bad when they are a sham and a pretense—that is, when they try to appear very expensive, but can come nowhere near the value of past architecture because of the cheapening effects of modern machines and power tools. Tradition is good, not because it sets up examples for us to copy more cheaply, but because it teaches us that the expenditures of our fathers for dearly made things were worth-while. It teaches us that we, also, should spend for the sake of beauty and for the sake of God, probably not *exactly* as our fathers spent, but certainly at least *as much* as they did.

By all means let us finish the Cathedral of St. John the Divine in the "modern style." But let us not do it because it will cost less that way. Let us do it because the modern idiom gives to the whole community and not merely to the architect the opportunity to contribute to architectural greatness.

FRANK MEMOLI, *architect*
Cincinnati, Ohio

● FORUM agrees that good architecture is seldom cheap but does not agree that it must be expensive. —ED.

Forum:

I am greatly intrigued by the Chinese puzzle that St. John has become. I would be further intrigued to see what Architect No. 4 (including the unidentified Greek revival-

continued on p. 82

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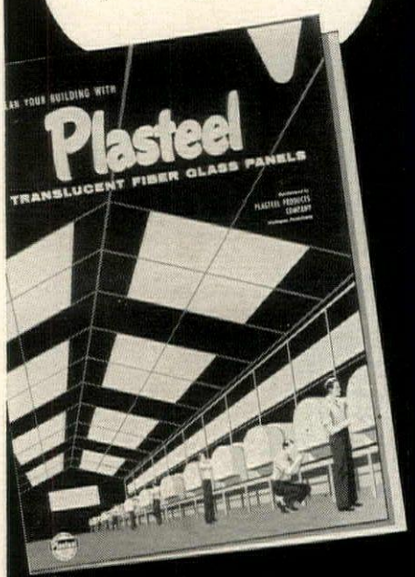
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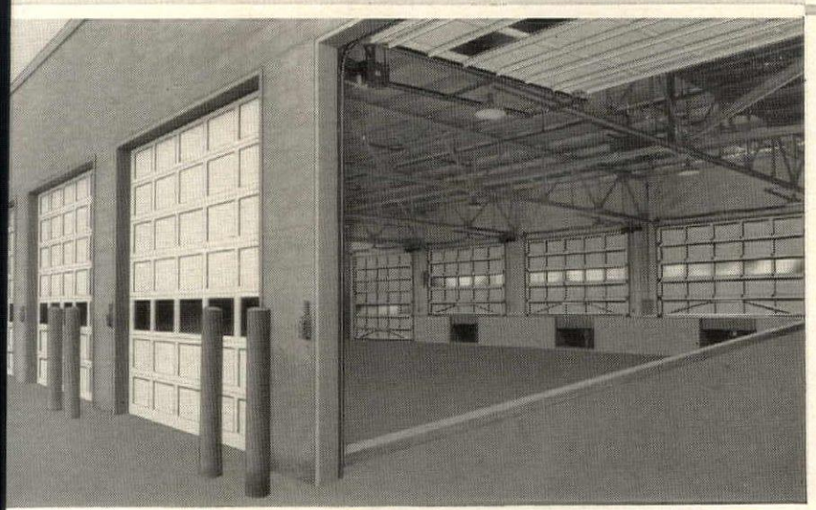
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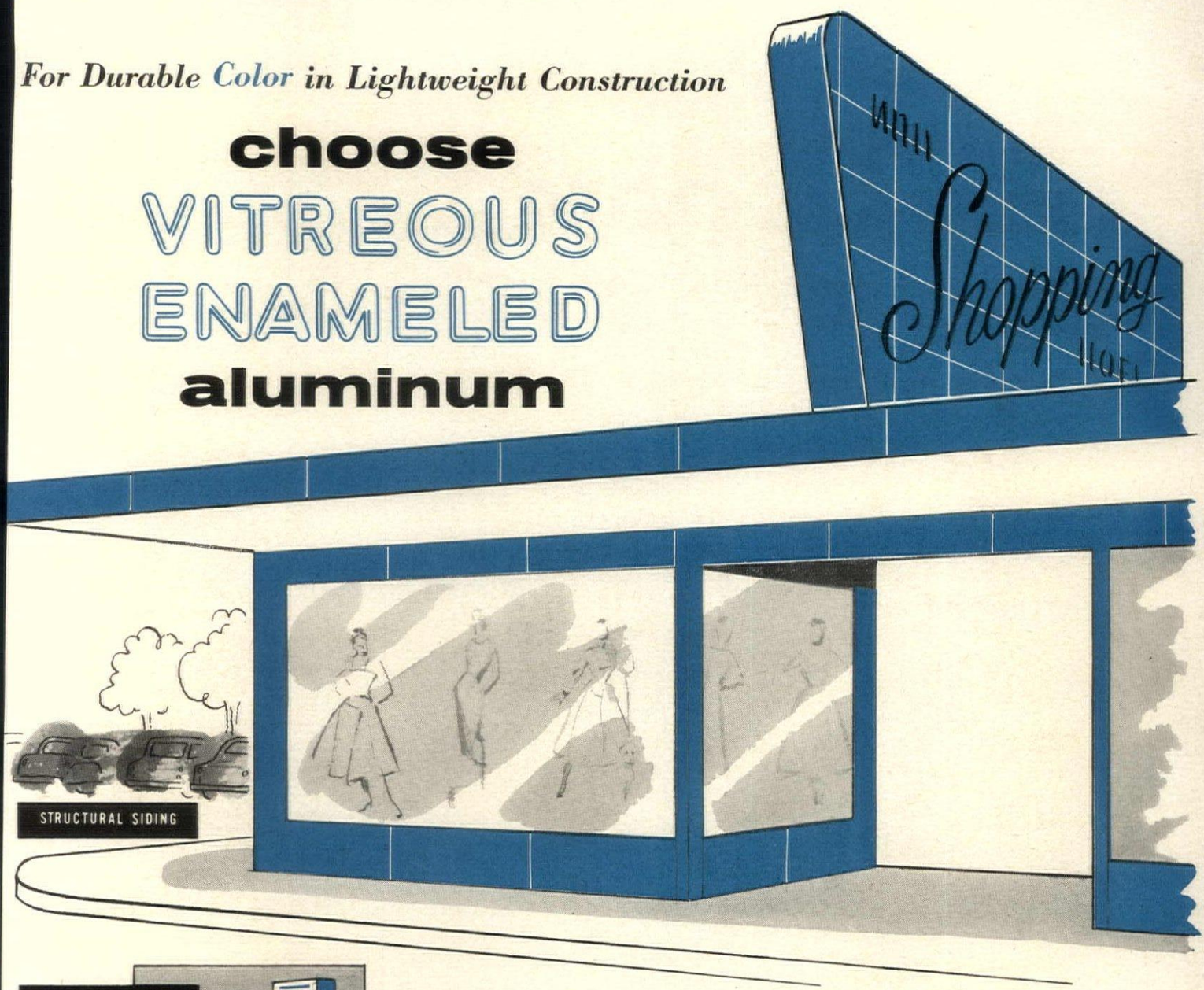
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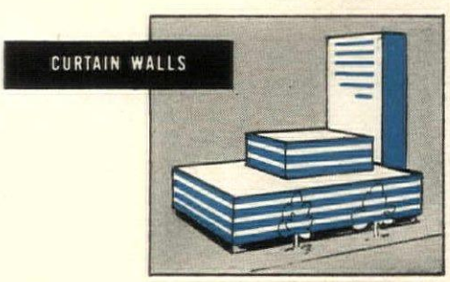
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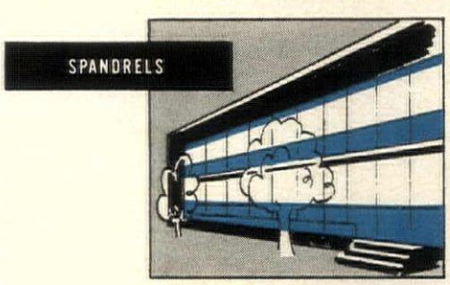
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LETTERS

Continued from p. 78

ist) could contribute to the general conf sion. Of course he would have to be a geniu especially if he wanted to juxtapose anythir "modern" to Cram's work. And of cour he probably won't be, American architectu being about half talent and half confusio the porportions differing with the individua But it would be fascinating for the FORU to publish outline drawings of the church a it now is, excluding the dome, to supply pe tinent facts, and to invite readers to send their ideas. It could easily be the most amu ing collection of drawings since the Chicag *Tribune* competition, and something wort while might come out of it. Perhaps sin Wright has set up shop in New York, h would have a go at it. He's the only perso I can think of who could perform the nece sary miracle.

WALTER C. KIDNE
Philadelphia, Pa.

● To get the ball rolling FORUM has already referr the problem to several architectural schools for sol tion. FORUM readers are welcome to submit suggest solutions based on the pictures in the December issu —ED.

MODERN FIRE HAZARDS

Forum:

"This is a daring school in many respects and "one of the best dog-gone high schools i the country," says FORUM's October issu about Keokuk's high school.

Does the daring involve disrespect for po sible fire hazards? I see no mention o sprinkles anywhere for the four-story class room wing. And what about smoke spreadin throughout, above the locker-partitions? realize that construction is mostly fire-retard ing (except the large glass areas) but th contents, clothing, furniture, supplies, etc are flammable; and there are laboratorie and shops on the lower floors. Also young sters *could* panic.

ALOYSIUS SCHUSZLER, *staff architec*
The H. K. Ferguson Co., Inc.
Cleveland, Ohio

HOPE FOR REDEVELOPMENT

Forum:

I just read your story on the Nationa Association of Housing and Redevelopmen Officials meeting (AF, Nov. '54), and couldn be more pleased. I hope that by its action and policies NAHRO will be able increasing ly to implant the idea that it is anxious an willing to work with all reasonable group to help solve the over-all housing proble and that it is not just a special interes group grinding its own axe.

What with Action (AF, Oct. '54) and th Ad Council campaign, this should be a bi year for dramatizing the problem of ba housing. Maybe in a few years we'll reall get around to solving it.

RICHARD BERNSTEIN
New York City Housing Authorit
New York, N. Y.

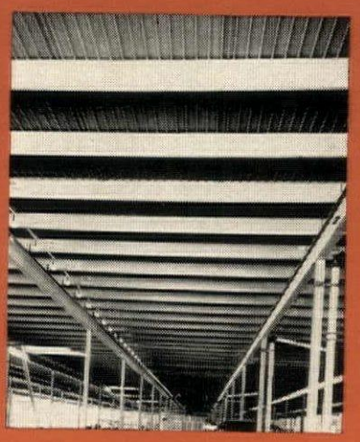
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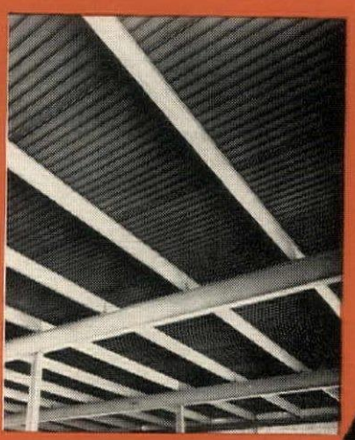
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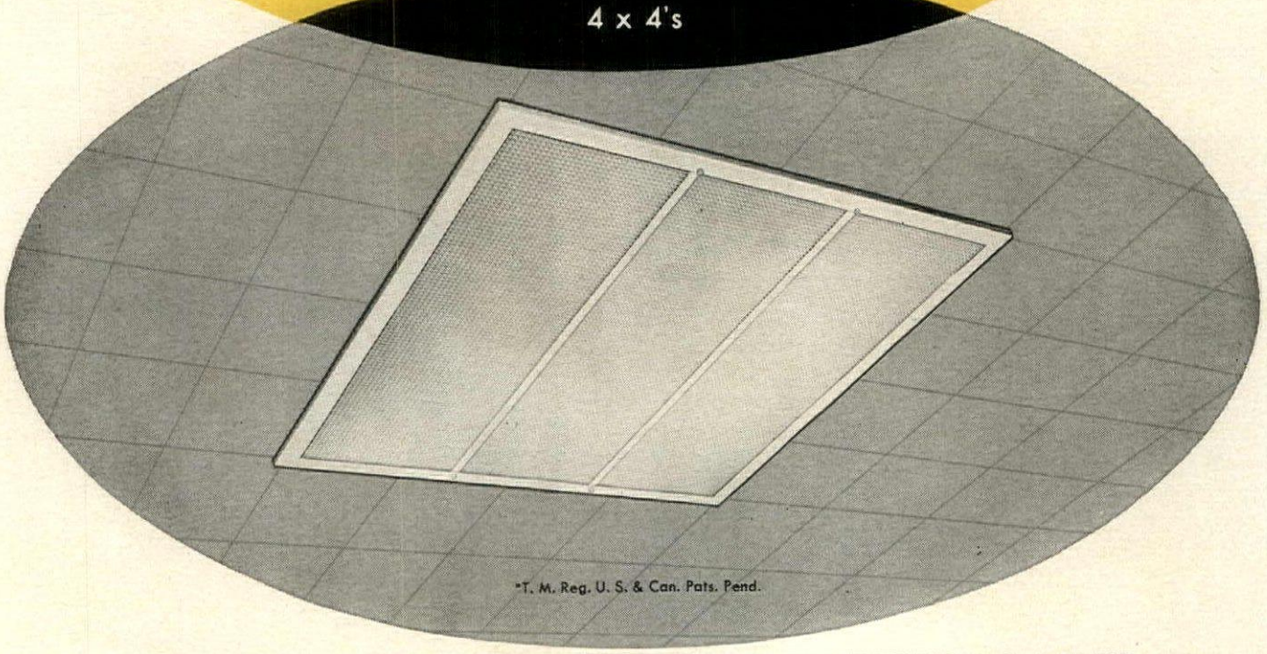
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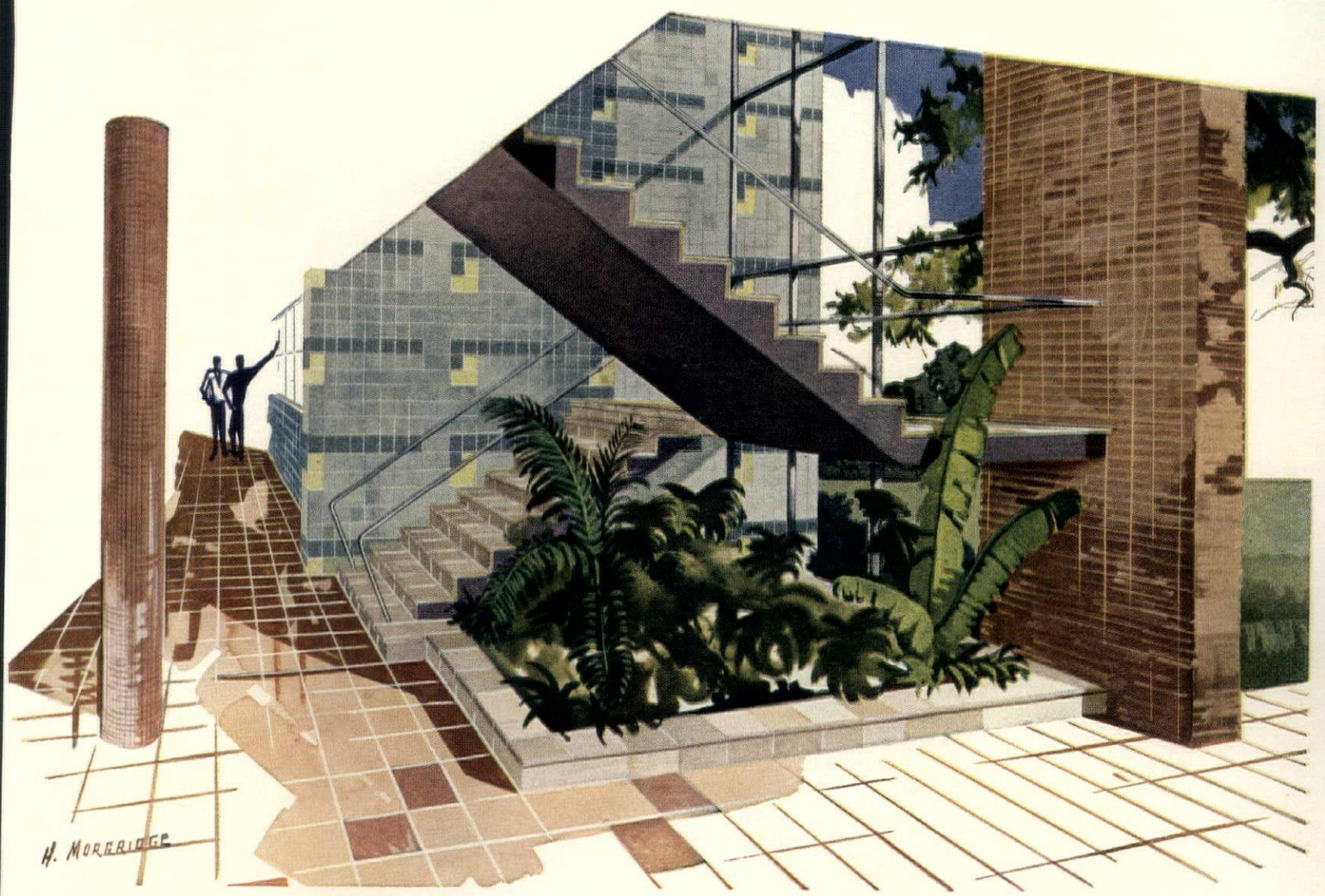
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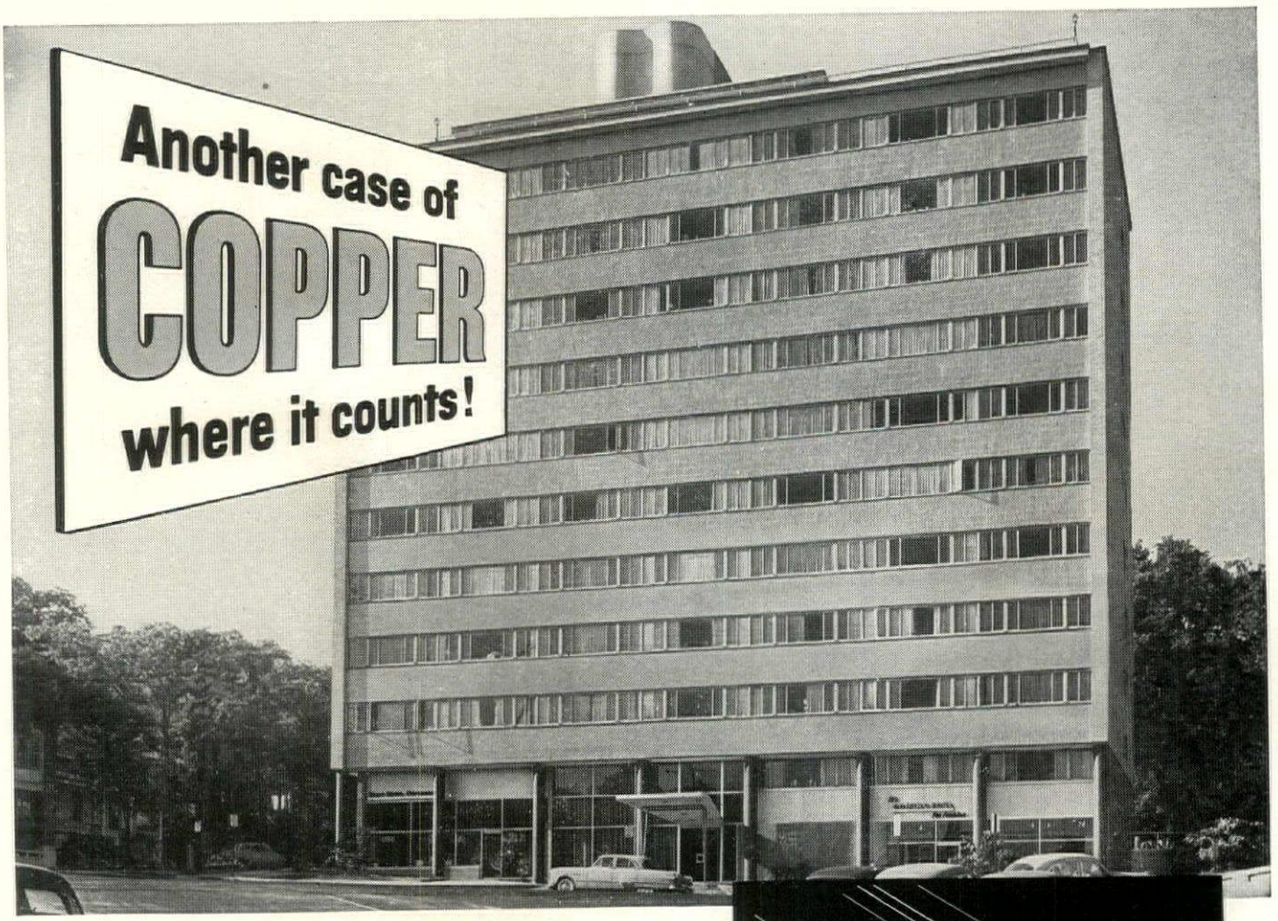
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WALTER BRAGG SMITH APARTMENTS
Montgomery, Ala.

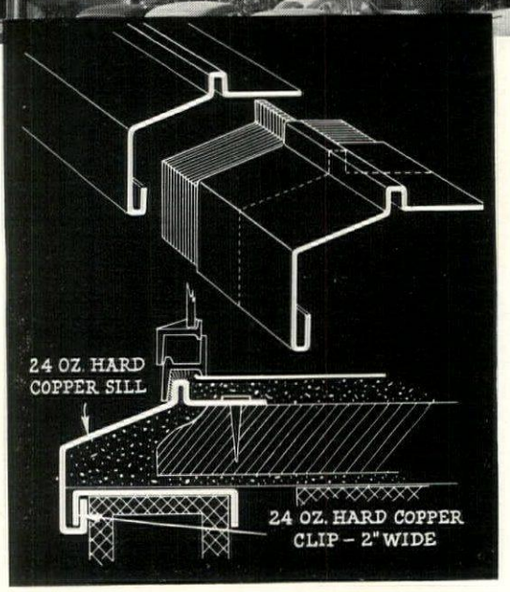
Architects: SHERLOCK, SMITH & ADAMS, Montgomery, Ala.
Sheet Metal Cont.: ACME ROOFING COMPANY, Montgomery, Ala.
Revere Dist.: HINKLE SUPPLY COMPANY, INC., Birmingham, Ala.

This modern, 12-story apartment house was awarded "Top Honors" for "Excellence of Design" in the Honor Awards Program at the Gulf States Region Convention of the A.I.A.

Said the architects, "The materials in this building were very carefully selected, as our years of experience have taught us that a building is no better than the materials which form its component parts. That's why we picked copper for the gravel guard, counter flashing, roof ventilators, penthouse beam covers, guard rail flashing, canopy flashing, downspouts, exposed window head and sill flashing. We know what copper can do . . . that we can trust it. And, although it is man's oldest metal, copper fits beautifully into the design of the most modern structure."

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APPROXIMATELY 6,000 LBS. of Revere Copper were used on this apartment house . . . from the fascia gravel stop to the exposed window head and sill flashing, detail of which is shown above. Butt joint detail in the window sills shown in top drawing occurs under window mullion.

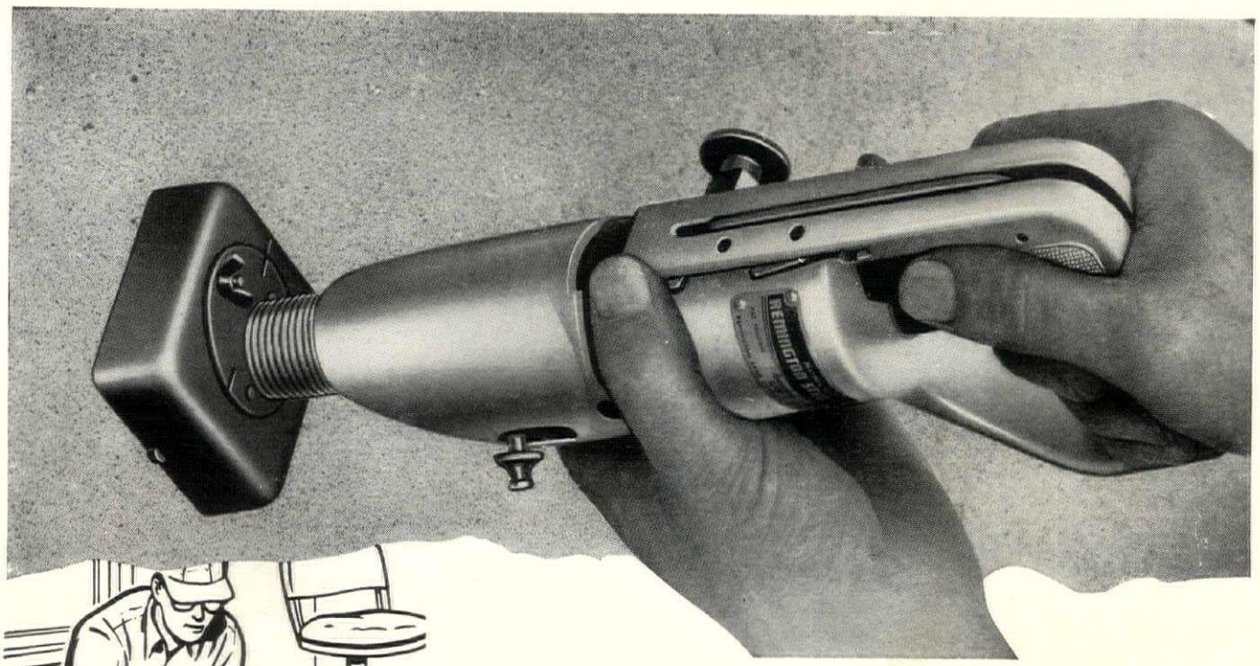
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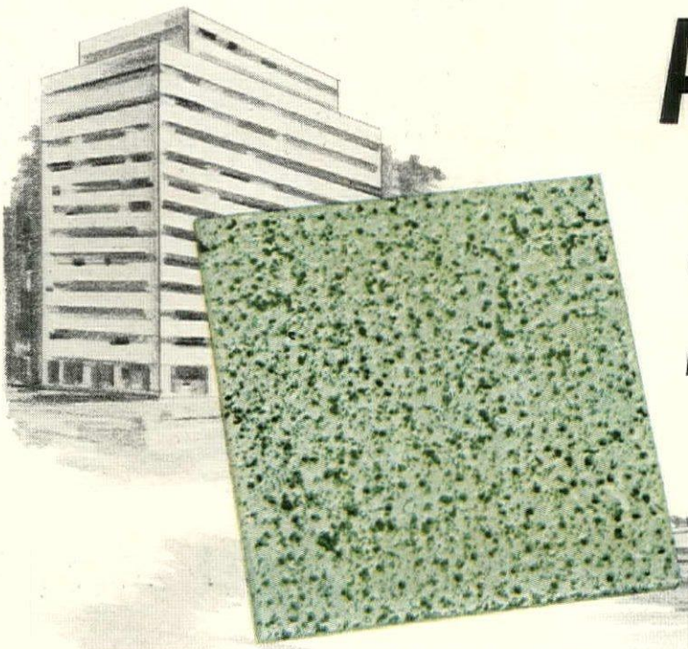
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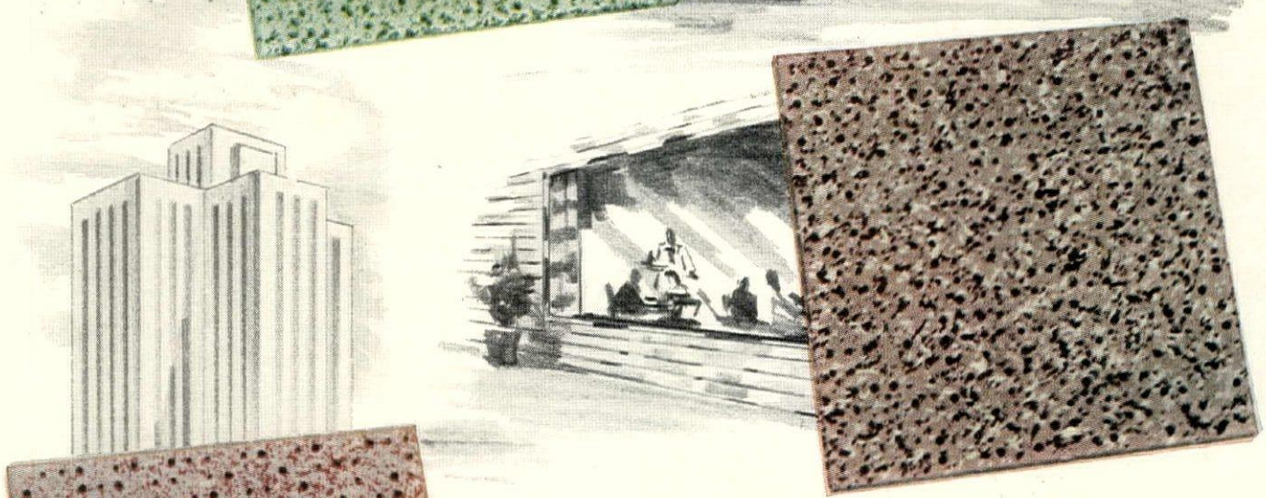
varitex

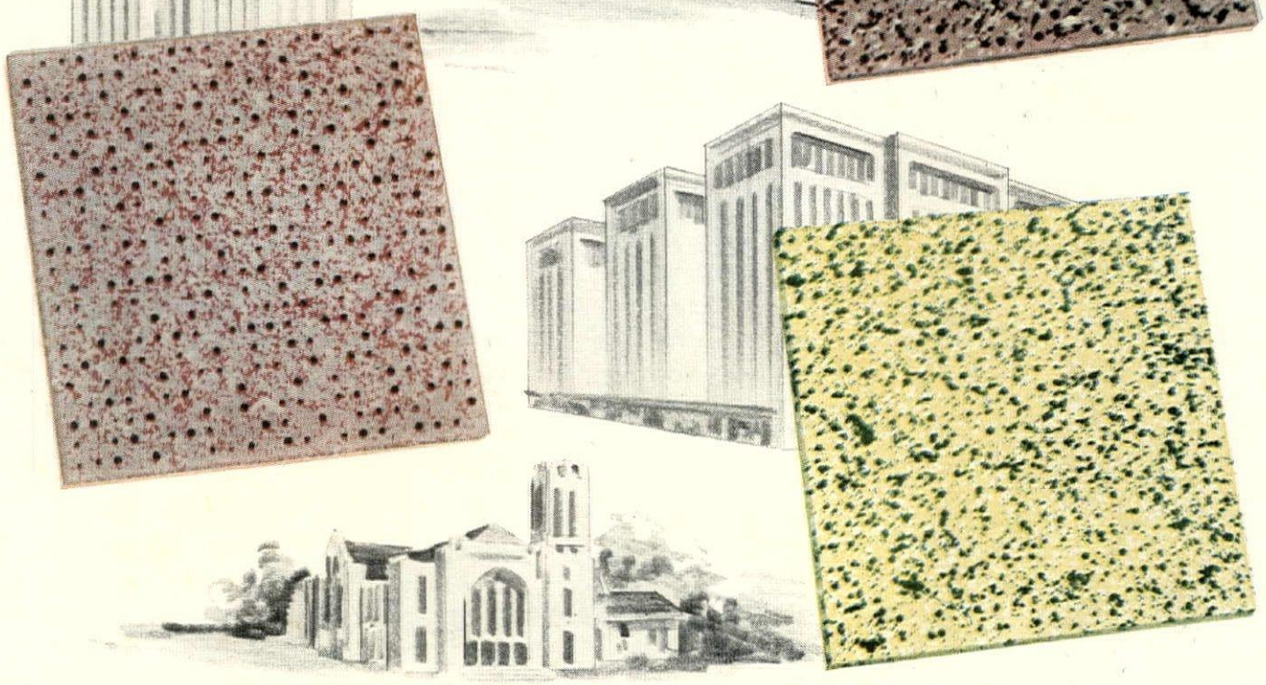
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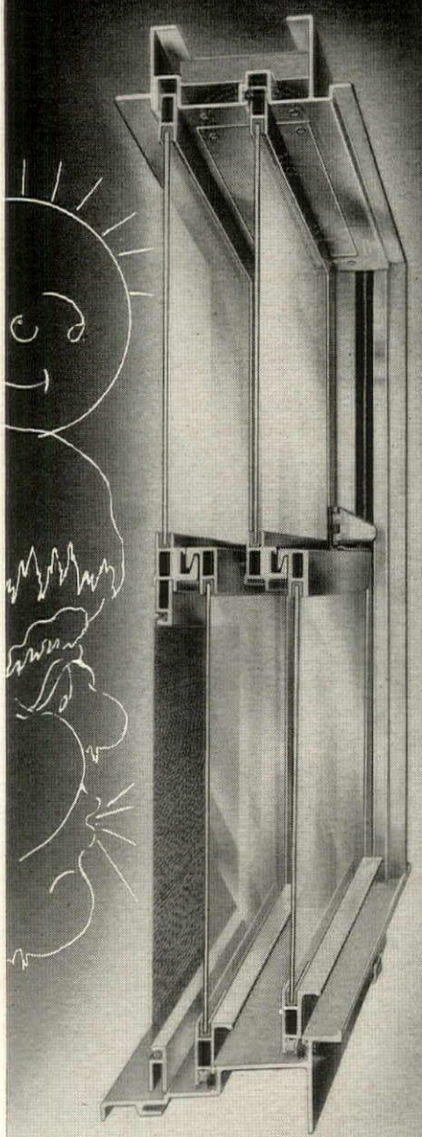
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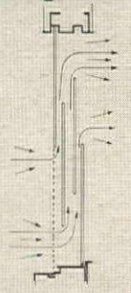
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LETTERS

Continued from p. 82

YOUNG ARCHITECTS

Forum:

One of our reactions to your presentati of the work of nine younger architects (A Oct. '54) is that you did not do so well the photography as you might have.

It is especially hard for young men now days to get started. The revolution is ov and it is hard to make news out of buildin that are really standard (not revolutionar but well built. I think we have a new ki of revolution today, and perhaps our you architects are not sufficiently aware of Why should they be? I don't think most us older ones are either.

A general concensus in our office was th most of the examples shown in the artic were fairly decent, with the Girl Scout j being perhaps the best.

CARL KOCH, *archite*
Cambridge, Mass.

NEW KIND OF PRISON

Forum:

I read with interest your article on th new Angola prison (AF, Dec. '54). I kno about the institution — especially befo Reed Cozart became the head of penal i stitutions in Louisiana—and certainly th program that is being laid out is com mendable. I feel sure it will work. Prison are everyone's business, and too little atte tion has been given them. Most priso wardens would like to be progressive bu greater funds and the education of the pub lic is necessary to promote a good program

You are traveling in the right direction.

JOSEPH E. RAGEN, *warde*
Illinois State Penitentiary
Joliet, Ill.

AROUND THE WORLD

Forum:

I have seen an article on Hartford Par in the magazine *Bouw* of Holland, whic was based on your earlier piece (AF, Feb '54). We at the office have been mos pleased—first with the excellence of you initial treatment and now to know that you magazine really gets around the world.

PHILIP D. CREER
Creer, Kent, Cruise & Aldrich,
architects & engineers
Providence, R. I.

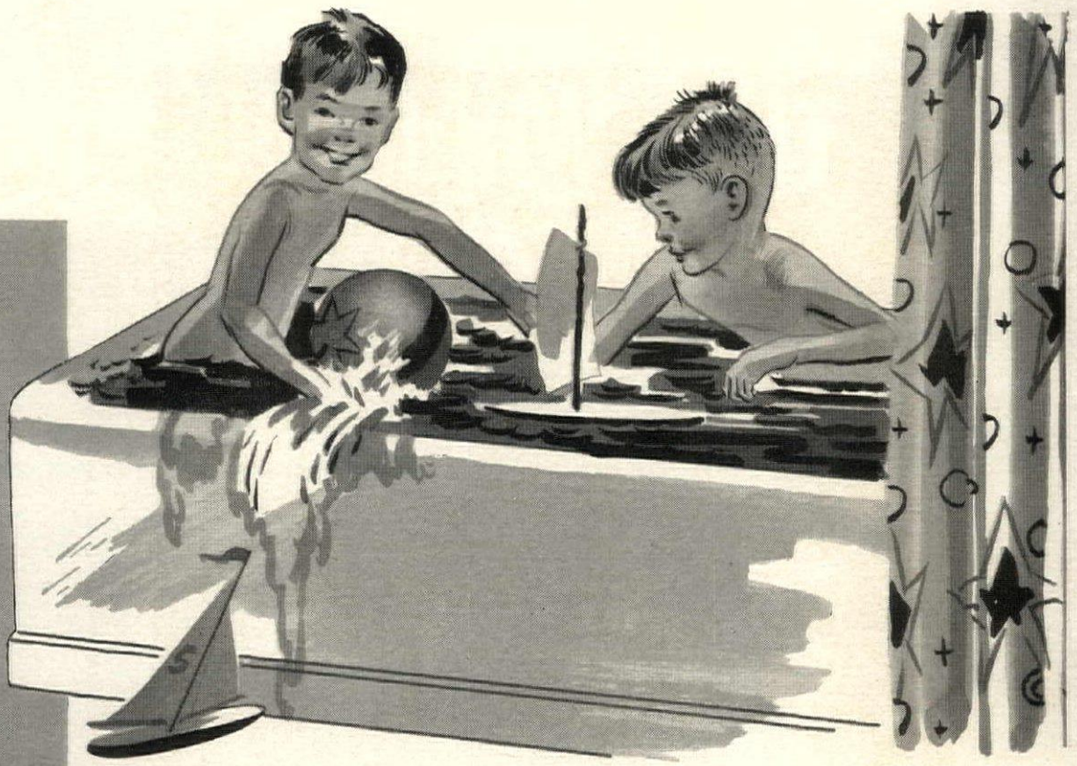
KITIMAT

Forum:

The Kitimat articles are excellent and very helpful to our students. . . .

MORTON HOPPENFELD
Department of City and Regional Planning
University of California
Berkeley, Calif.

continued on p. 94



WEAR AND TEAR THRU YEARS OF SERVICE

Won't Mar the Beauty of PERMANENT

Enameled CAST IRON BATHTUBS



A homeowner's drainage system is also a permanent investment, if it's Cast Iron Soil Pipe.

Only Cast Iron Soil Pipe offers all of these advantages:


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Bathrooms represent a permanent investment. Their fixtures should combine with charm and lasting beauty the ability to take the heavy punishment they're going to get through years of hard, daily service.

That is why leading manufacturers of smartly styled modern plumbing fixtures—and contractors, too—recommend Enameled Cast Iron. They know that the rigid one-piece construction of cast iron fixtures—the thick coating of permanently fused lustrous enamel—assures far longer life, because it resists chipping due to impact or pressure.

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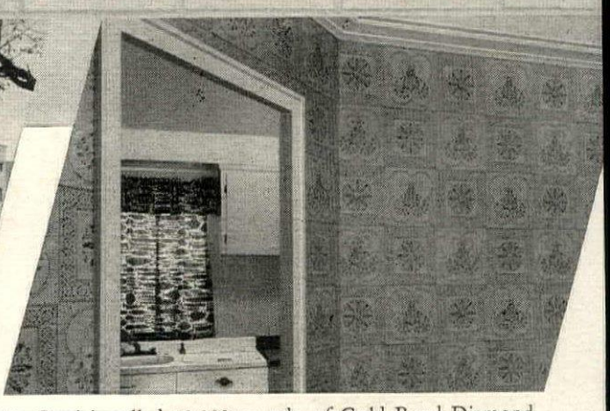
GOLD BOND PARTITION SYSTEM

in construction of fine

Mr. Berti shows his application of Gold Bond Diamond Mesh Lath furred out from an exterior wall. This same framing constitutes the skeleton for building the 2" solid partition.



Here's a typical Berti job: Detroit's Manor House Apartments. Weidmaier & Gay and Maxwell Wright, Architects; Lerner-Linden Construction Co., Gen. Contractors, Oak Park, Mich.



Mr. Berti installed 10,000 sq. yds. of Gold Bond Diamond Mesh Lath in 2" solid metal lath and plaster partitions. This is a typical interior wall in the Manor House.

SAVES SPACE AND MONEY
Detroit Apartment Houses



"We had no 'lost time' problems with this easy-to-build System"

says: **MR. REYNOLD BERTI**

Lathing and Plastering Contractor of Detroit, Michigan

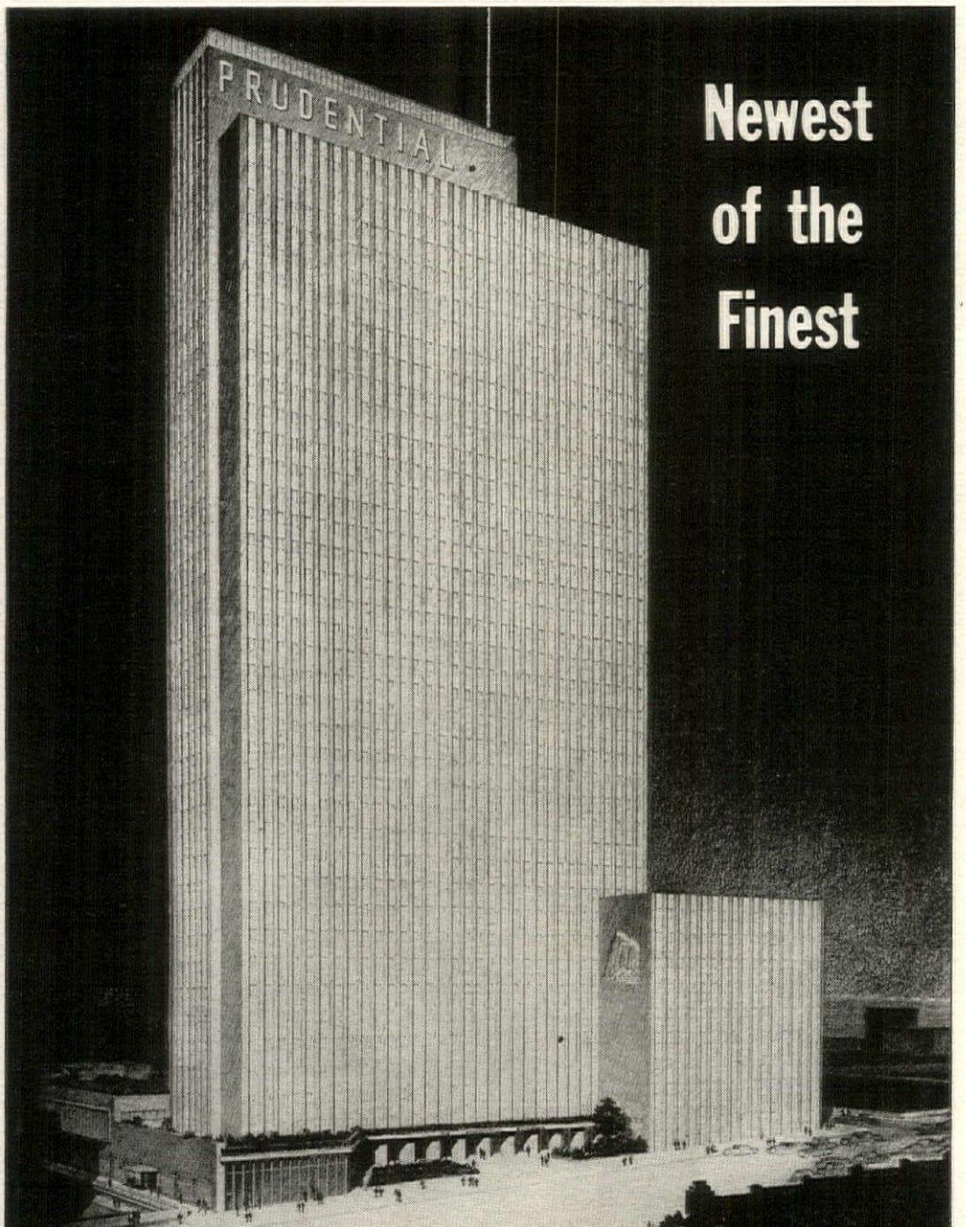
"We like the Gold Bond 2" Solid Metal Lath Partition System because each part helped us to complete this job quickly and easily. The Channel Studs were easily cut to required length and they slipped into the Ceiling Runners and Metal Base fast... in seconds, as a matter of fact! And because Gold Bond Diamond Mesh sheets have square-ends and lie flat, we got full span across studs. These features kept our handling time down to a minimum. The completed Gold Bond Partition takes up only 2 inches of floor space, and we recommend it because it has proved highly economical in so many types of building construction."

Contractors, like Mr. Berti, recommend Gold Bond Metal Lath and Plaster Partitions for practical reasons: Gold Bond Diamond Mesh is factory-cut by the exclusive "Flying Shear" process that eliminates camber and out-of-square sheets; the metal lath construction makes a rigid base for fast plaster application. For full information on this profitable Partition System, write National Gypsum Company, Architects Service Department, for Bulletin 2025.

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

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

As a building, it will take its place among our country's finest structures and is a perfect example of the features a well-informed investor is willing to put into the space he plans to use and rent. For instance, to prevent future obsolescence and to meet the increasing requirements of modern electronic office equipment, architects Naess & Murphy have prepared the new Prudential Building to handle the highest electrical load of any office building yet built. To do this job easily, and to permit layout changes and additions at minimum cost, Robertson Q-Floor construction is being used. This strong, light-weight, steel, cellular structural floor is the only construction material available which provides easy electrical access over every 6-inch area of the entire exposed floor. For more good reasons why fine new buildings all over America have turned to Robertson Q-Floor construction, see the opposite page.

Robertson

Q-Floor

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LETTERS

Continued from p. 90

CHICAGO'S PLANS

Forum:

FORUM has done its usual fine job of service by its article, "Bold Plans for Chicag (AF, Oct. '54).

We in Los Angeles can make the best pr gress by concluding a master plan simil to the ones submitted in the Carson Pi Scott competition. It doesn't make any di ference if we don't use it; the chief obje tive is to have a plan.

HARRY MORRISON, *general manager*
Downtown Business Men's Association
Los Angeles
Los Angeles, Calif.

LOWER COST STEEL

Forum:

We were interested in the article on pr posed methods of cutting the cost of ste framing (AF, Sept. '54).

Knowing full well the economic advantag of standardization of sash types in building we would also hope that the steel fabricato would be in a position to indicate low framing costs, if standard bay dimensio were used.

We were surprised to notice that none the members of your round table mentione the fact that, with structural steel framin it is possible to obtain an important "plus for the owner, that is, the possibility 100% electrification through the cells of cellular sheet steel floor attached to the ste frame. . . . We believe that investigation the advantages of standardization of fram ing details by the fabricators, coupled wit the positive advantages of electrified cellu lar steel floors, will enable steel framing t improve its position in today's competitiv market.

E. A. MILLER, *manager*
Building Panel Division
Detroit Steel Products C
Detroit, Mich.

Forum:

We are extremely interested in the Roun Table report: "How to Cut the Cost of Stee Framing" (AF, Sept. '54). It received con siderable comment in our organization. . .

PAUL E. MAGOON, *advertising manage*
Granco Steel Products Co.
Granite City, Ill.

GLASS BLOCK INSULATION

Forum:

Your article, Glass Block under Test (AF Dec. '54), commenting on recent studies a the Texas Engineering Experiment Station is of great interest. It is stated and pre sented graphically that clear glass stores up and radiates "slightly" more heat into a room than does glass block wall. This state ment might make the impression that the insulation effect of glass block is but little better ("somewhat more") than that of clear glass. Tests carried out in the past demon strate the thermal insulation of glass block

alls is considerably higher than that of lass panes, no matter whether single, double rength or plate glass of greater thickness compared.

Tests have proved that the thermal in-ulation of hollow glass blocks, whether typi-ally jointed in nonbearing walls or combined ith reinforced concrete skeleton in bearing alls, floors, domes and roofs, is much gher than that of any single-pane glass sed in the buildings.

Thermal transmittance of a wall panel (or ver-all coefficient of heat transmission U) the amount of heat expressed in Btu (Brit-h thermal units) 1 hour per sq. ft. for difference in temperature of 1° F. between he air on the inside and that on the outside. ypical U-value is usually determined for 5 mph wind blowing parallel to the outer rface. The lower the U-value, the better hermal insulation. Thermal transmittance f a hollow glass block wall averages 0.47 tu compared with the average 1.2 Btu of ear glass. This is about 2½ times as high. he thickness of the glass pane affects but ightly the U-value as can be seen in the llowing table:

1/10″ (single)	1.27
⅛″ (double)	1.26
¼″ (plate)	1.23

High thermal insulation of glass block alls, floors and ceilings (roofs) is basically ue to the enclosed air space which can be xpressed by factor of thermal resistance veraging 1.1 Btu (internal resistivity), the ighest value being attributed to a 2″ air pace. So, for example, assuming the surface esistance inside the room $r_i = 1 : f_i = 0.167$ nd outside the room $r_o = 1 : f_o = 0.606$ nd the glass thickness of the hollow block = ⅜″, the thermal transmittance is calcu-ated, considering the air space:

$$\frac{1}{.167 + \frac{2 \times 0.375}{4.8} + 1.1 + 0.606} = 0.49 \text{ Btu}$$

The insulation value of enclosed air space as been recognized and amply used for cen-uries in double windows and, in the last dec-des, in hollow glass blocks. The first glass locks were plain and thick, and it was as-umed that greater glass thickness will pro-ide sufficient heat insulation. However, this as not the right track of development. In his connection, I remember the beautiful nansion of the famous Dubonnet, producer f the very fine and healthful "Dubonnet ocktail," in the Bois de Boulogne in Paris, fabulous glass structure where a large and uxurious bathroom could not be used because f sweating of the surrounding walls. Called s consultant, I advised the replacement of he solid, thick glass blocks in the walls by ighter hollow units. For such a wall the utside temperature necessary to produce ondensation inside the room with the air at 70° F. and having 40% relative humidity would be —16.4° F., in comparison with +36° F. for solid glass blocks.

J. J. POLIVKA, *engineer*
Berkeley, Calif.



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

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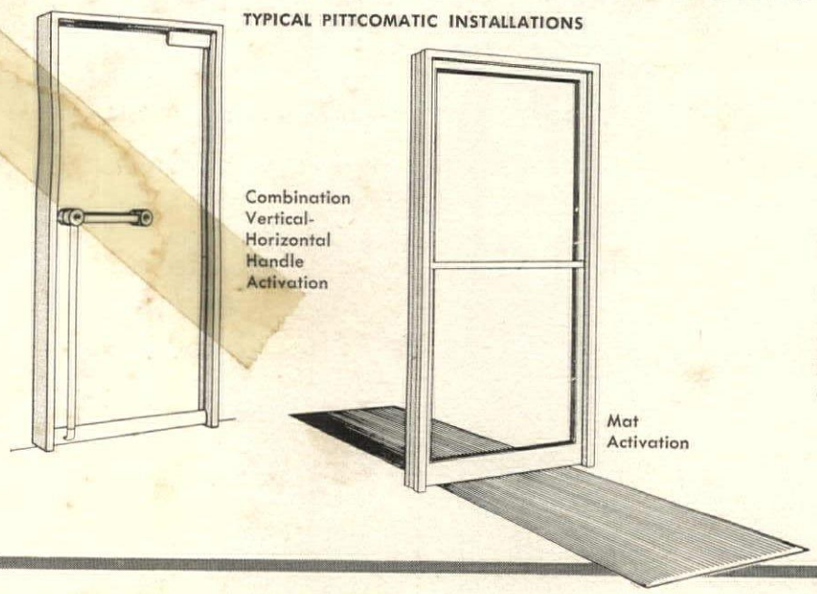
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For detailed information on Pittsburgh Doors, see Sweet's Architectural File . . . sections 15a/Pi and 15d/Pi, or write to Pittsburgh Plate Glass Company, Room 5170, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa. Ask your local Pittsburgh distributor for a copy of the de luxe Store Front Detail Book.

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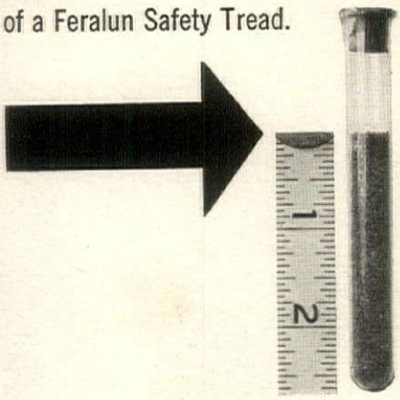
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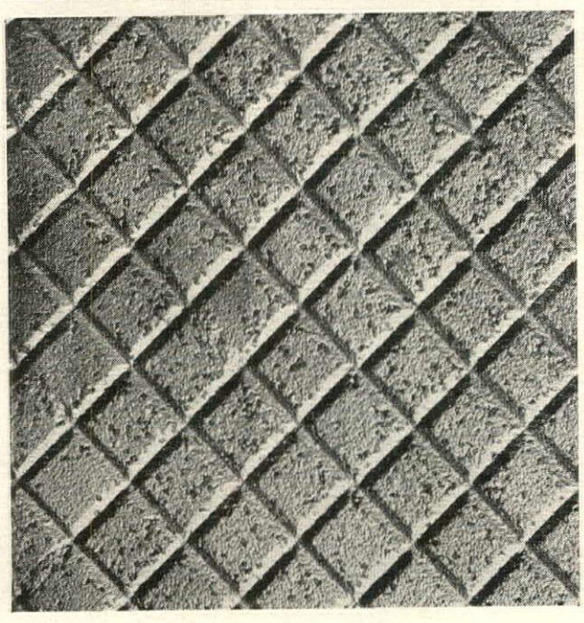
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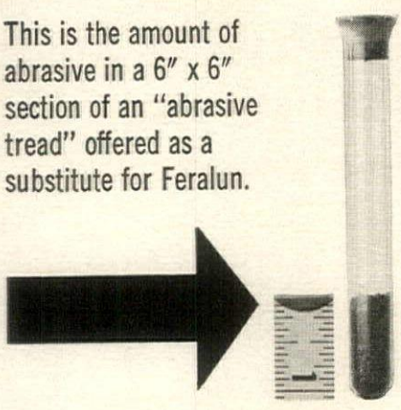


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AB116A

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the magazine of buildin

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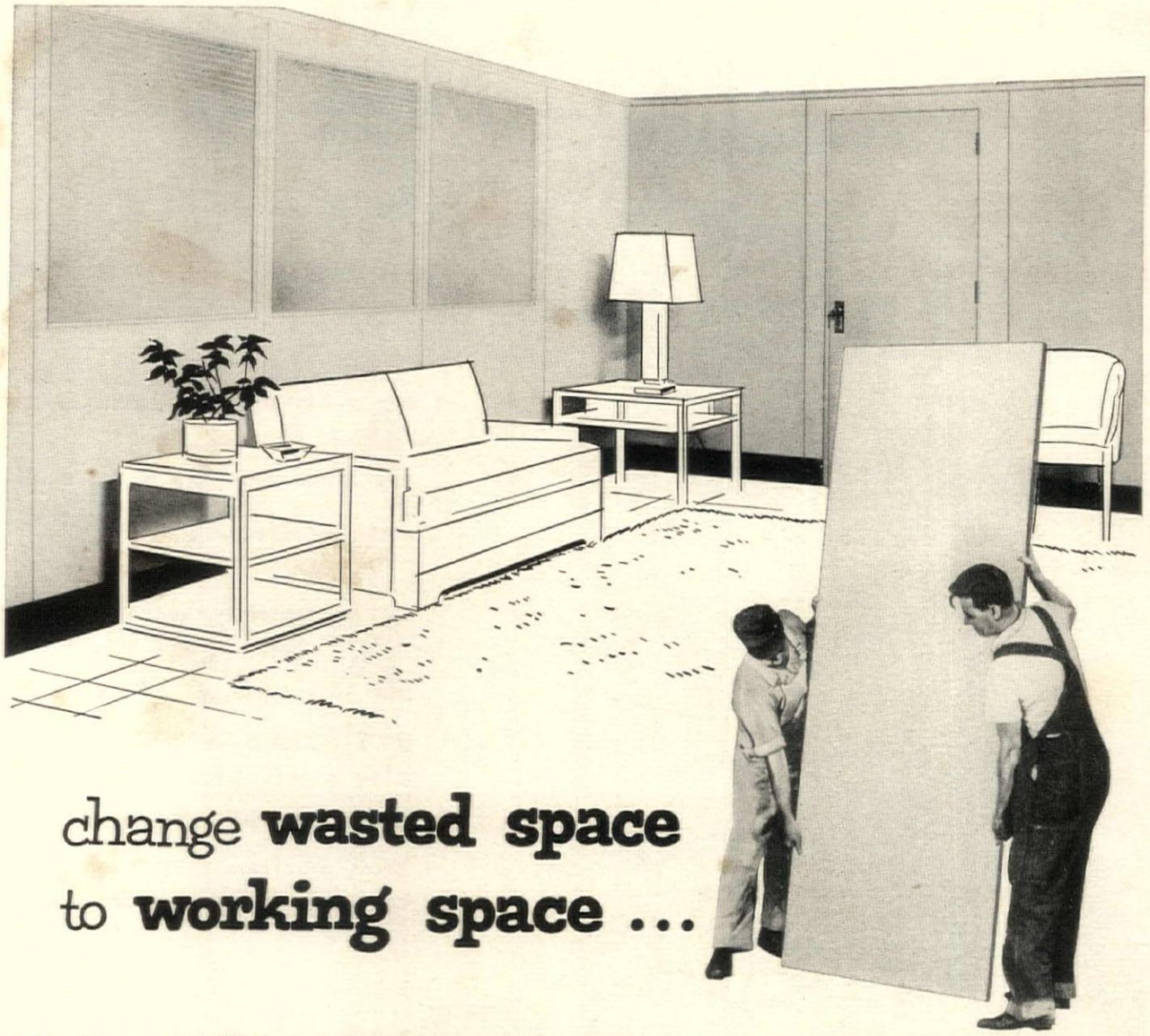
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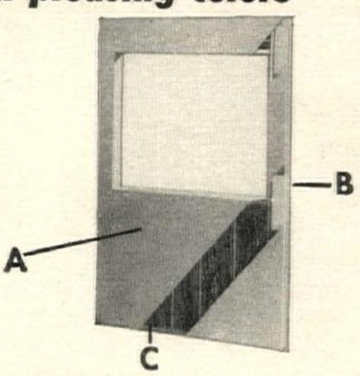
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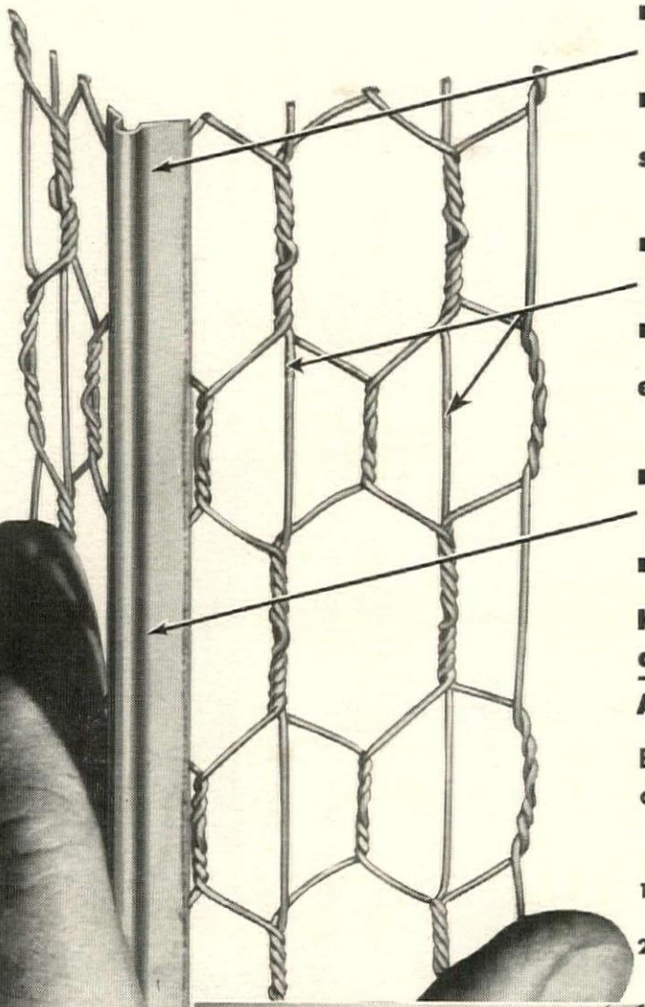
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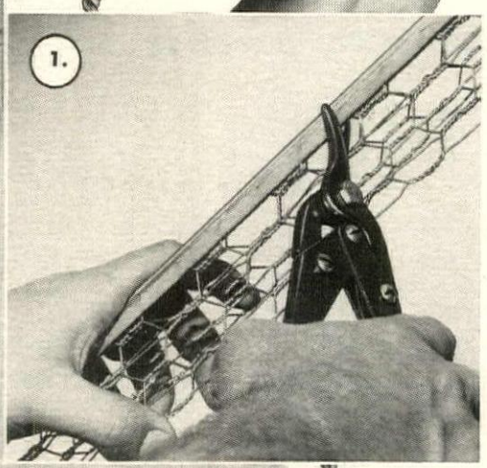
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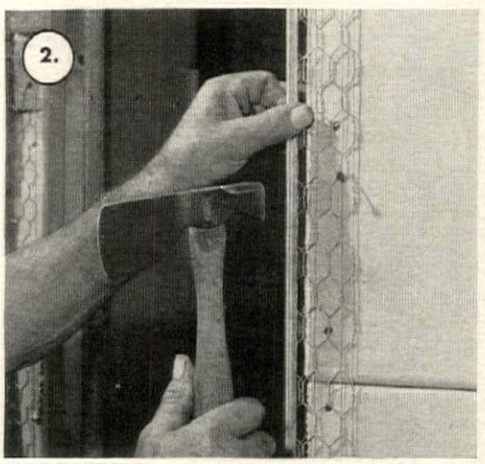
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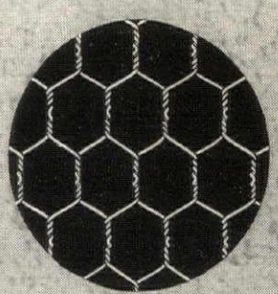
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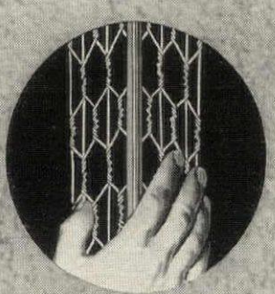
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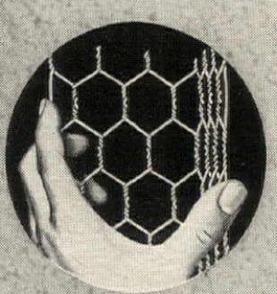
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● Magnificent new $14-million Fontainebleau Hotel, on the old Firestone ocean-front estate, 44th to 48th Streets, Miami Beach, opened its hospitable doors precisely on schedule last December.

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Construction is concrete throughout, for utmost stability and fire safety. On the basis of wide and successful experience, Taylor Construction Co., General Contractor, used 'INCOR' 24-HOUR CEMENT, 23,332 bbls., for dependable high early strength so essential in maintaining precise concreting schedules required for top construction speed at rock-bottom concreting cost.

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men behind the blueprints in this month's FORUM

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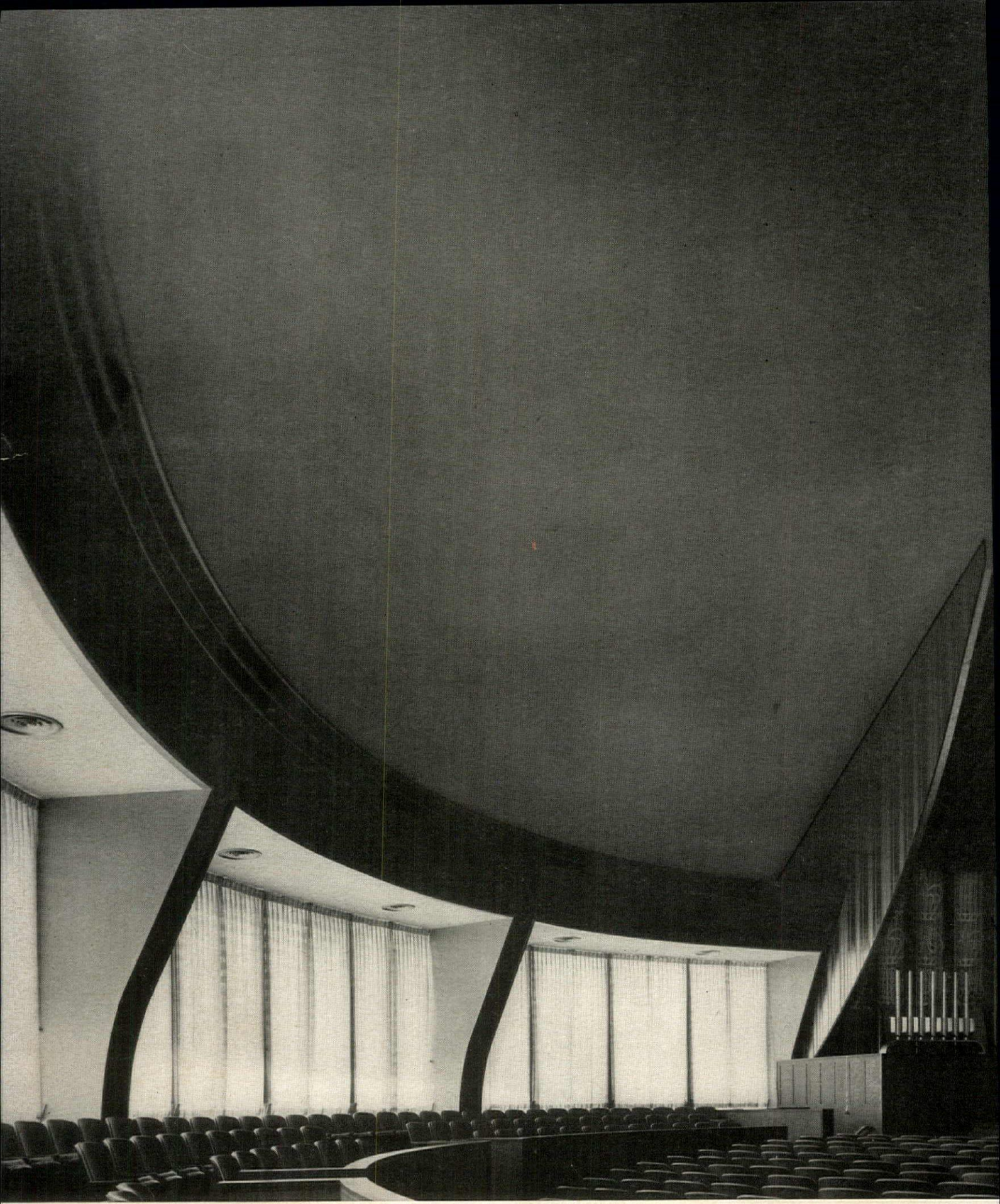
2. 
Kay Hart Studios

3. 

1. **OWNER:** Stanley Marcus, as president of Dallas' famed Neiman-Marcus, has brought to his new store some of the superb showmanship that has made him czar of women's fashions for the whole Southwest. For the benefit of his architects, DeWitt and Swank, and his interior designer, Eleanor LeMaire, he carefully specified the kind of a store he wanted: "a practical backdrop for selling with a full degree of esthetic satisfaction." He got what he wanted—particularly in the colors (p. 120).
   Marcus has had a big hand in other local building projects. In 1936 he built for himself the first contemporary house in Dallas (by Architect Roscoe DeWitt) and last year, for his nationwide customers, he helped Statler build Dallas' first modern hotel; i.e., he helped organize the syndicate which loaned Statler $1.5 million at 2½% interest.

2. **CONTRACTOR:** William C. Henger, as head of Dallas' Henger Construction Co., rounded out the team which produced Neiman-Marcus' new store. A graduate of Washington University and New York's James Stewart Co., Henger established his own company in 1917, has since played a big part in Texas' big construction industry. Comparing his early jobs with his recent ones, he notes a big change for the better in the relationship between architects, contractors and owners: "There's much less suspicion on all sides. That is because we contractors are better educated than we used to be. Contractors once worked their way up from beginnings as carpenters or bricklayers. Now men train to go into building just as they do for any other business."

3. **ARCHITECT:** The late great Eric Mendelsohn has influenced the course of twentieth-century architecture more than most of his colleagues. A German, he fled Hitler's racial persecutions in 1933 and, after some wandering, became a US citizen in 1947. Behind he left a succession of vigorous works of architecture, beginning with the Einstein Tower at Potsdam in 1925. In his last years he concentrated on the design of synagogues, several of which have already been published (AF, April '53). Now, a year and a half after his death, some of his last designs are finished in steel and stone and presented on the following pages.



TEMPLE in Cleveland Park Synagogue seats 1,000 under concrete dome

THE LAST WORK OF A GREAT ARCHITECT

When **ERIC MENDELSOHN** strode confidently into the FORUM office five years ago and reported he was finally ready to show some of his US architecture, a series of articles was planned. In the Feb. '51 issue the first appeared. In April '53, the second.

Then in Sept. '53, at the age of 66, Mendelsohn died in San Francisco.

An architect's contracts outlive him, however, so on the next ten pages we are able to publish another installment in the work of one of the really vivid architectural talents of our century: three synagogues completed recently in the Midwest and fluent drawings for two more to be built soon on the East Coast. The photographs and drawings on these pages have in them something of the gentle grace of this outwardly aggressive, impatient, sometimes arrogant man, who lived and died an explorer in modern architecture. The executed buildings do, however, reflect the inevitable losses, sometimes serious, that occur when the work of genius is carried through without his own severe will guiding them to the finish.

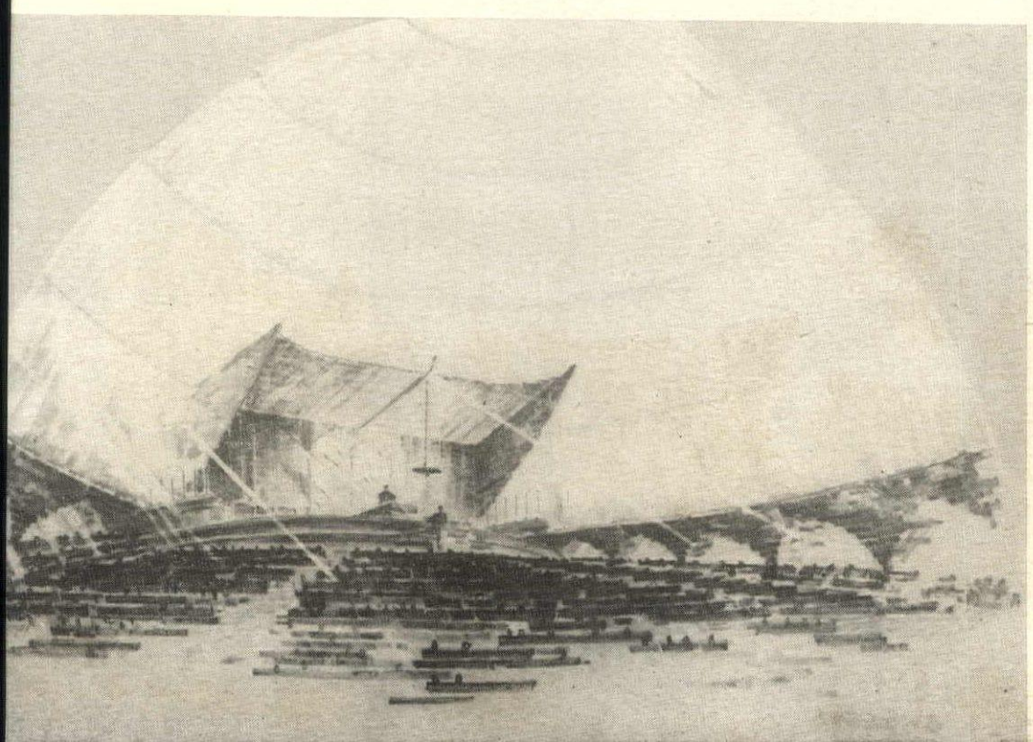
Mendelsohn practiced in Germany, Holland, England and Palestine before coming to the US in 1942, and he went through artistic periods almost as well defined as Picasso's. But he never completely outgrew the trade-mark of the impassioned sketches for concrete and glass buildings he made in the trenches during World War I, nor did he really want to: "I believe that all original artists betray their individual significance in their first works—pregnant with new ideas—offering the best clue for everything that follows. For, when the first idea is deep enough, life is too short to expound it fully."

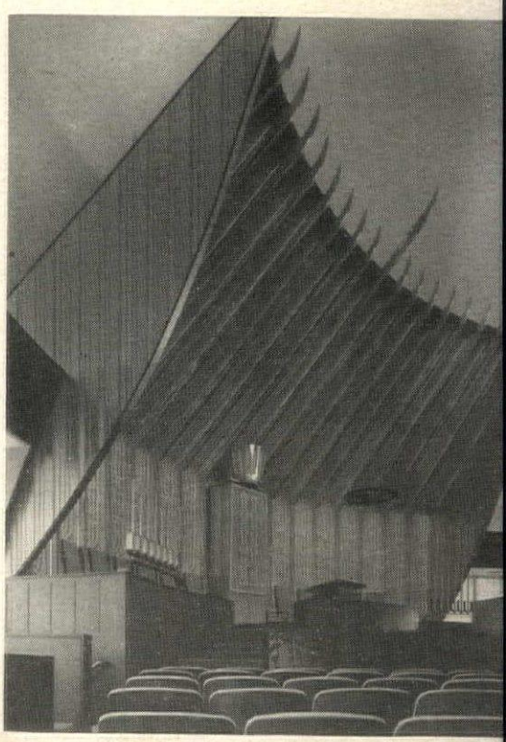
In the fifties in America he still was developing; he scorned to be content with the blankly efficient techniques of the industrial modern style he had helped develop in the twenties. He wanted lyric grace.

His last designs, the synagogues, are intended to lure men's minds into contemplation. They are characterized by the unadorned curve, the severe plane softened with joyous decoration. They also were designs which were difficult to get built; their delicacies challenged the impatience of many associates and builders, just as Mendelsohn himself did sometimes, so some of the posthumous buildings are mirrors that are fractured.

Recently Hans J. Schiller, Mendelsohn's design assistant for the last 15 years and a close personal friend of both Mendelsohn and his wife, spoke these scattered memories of the architect:

"Architecture to Eric Mendelsohn was Art, in fact, Art Supreme, to which all other arts were subordinate and component. His desire to conceive beauty was only matched by painstaking attention to the most insignificant detail in his buildings. Thus, Henry van de Velde said of the Maimonides Hospital: '. . . A great and noble gesture toward the last step, that of pure beauty





TENT over podium and ark is focal point of temple of Cleveland Park Synagogue. At left is Mendelsohn's original sketch from which he designed large domed space, keeping remarkable faith with early concept.

without which it would have remained in the glacial region of calculation and mere technique.'

"A hard taskmaster, Mendelsohn drove those who worked with him mercilessly in the pursuit of perfection, but he drove himself harder. Every detail had to bear the imprint of his hand: 'There is but one designer in this office and that is Eric Mendelsohn.' Conscientiously he would abandon scheme after scheme, laboring tirelessly for the flawless solution: 'I am used to be my own, my most severe critic.'

"The most fascinating experience was to watch him sketch: 'There is nothing more provocative to the creative architect than a blank sheet of white paper.' One short moment of intense concentration, gazing into space beyond, the 6B touched in a point, lingered for a second, then the line started flowing in quick, determined, dynamic motion, not to be interrupted—the pencil never leaving the paper—until it ended in the characteristic flourish of his initials. The sketch was his most powerful tool of conveyance of ideas, his test of ideas, the demonstration of ideas to himself and others. This was not studious drawing, line by line, but the outflowing of inspired imagination, spatial writing transcending the two-dimensionality of paper:

" 'Draw as you write.

" 'Write as you talk.

" 'Talk as you think.'

"The original sketch was the criterion against which he would check all future development of the project, his own variations on the theme, and the elaborations of those who translated its portents into working drawings, always cautioning: 'Look at my sketch, there is everything in it.' Thus in his greatest buildings all the final complexity of detail and form is implied in the original sketch. 'Only in reduction to ultimate simplicity there is mastery.'

"In his art he would not compromise, rather losing a project than be dictated how to design. To a prospective client who indicated that he would like something similar to the Park synagogue in Cleveland, he replied: 'My dear Mr. A., would you have asked Beethoven for the *Seventh Symphony* while he would create the *Ninth?* Certainly not! All I will say at this point, you'll get a Mendelsohn.'

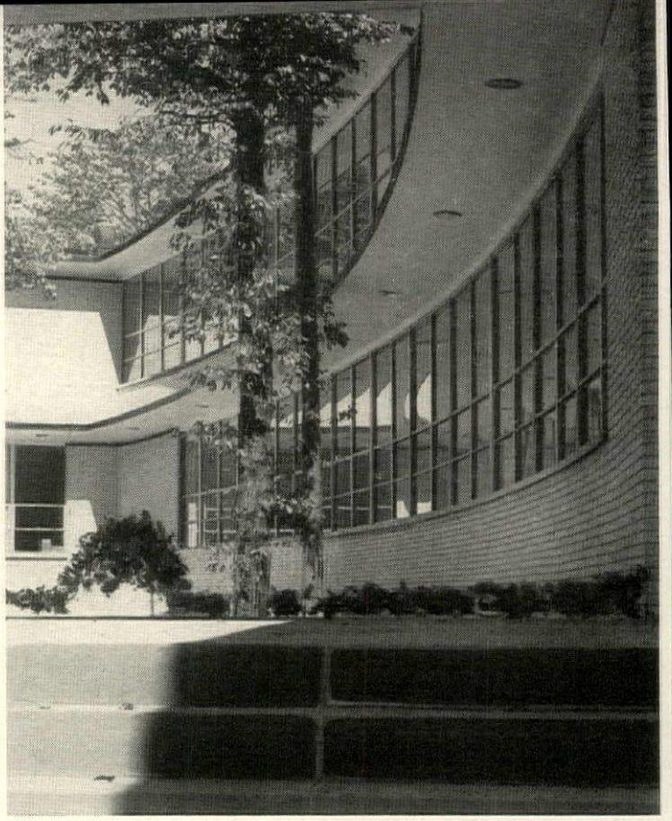
"Yet there was humility, great humility in the face of nature, great art, close friends. There was tenacity of purpose, heroism: as a young man at the very start of his career he lost the sight of one eye. Though this must have been a terrible shock to a man working in three-dimensional form, this was no handicap, rather a further stimulus to make his structures more exquisite, more beautiful.

"In spring 1953 Mendelsohn called me to his study. He was standing with his back to me as I entered, not bent over his board as he was wont to do. There was oppressive silence, not the music of Bach filling the tiny room, as was the custom while he worked. I was gripped by foreboding.

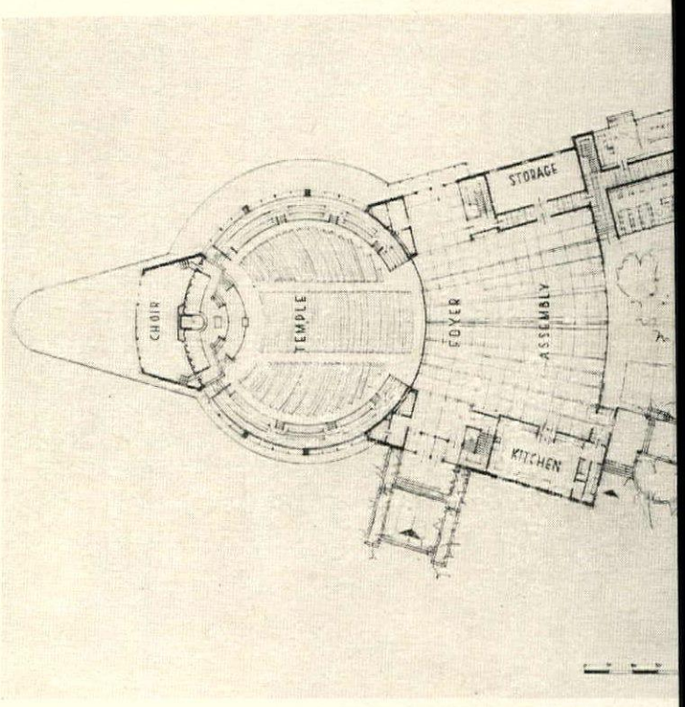
"Without turning around, he said simply: 'Hans, I have just been told that I have but a short time to live. There is still much to be done. I intend to continue to live and work as if nothing had happened.'

"Several months later, one afternoon after having completed the final design sketches for the interior of his temple in St. Paul, he asked me to drive him to the hospital. That night his main concerns were still his buildings, discussing design questions and asking me to take notes.

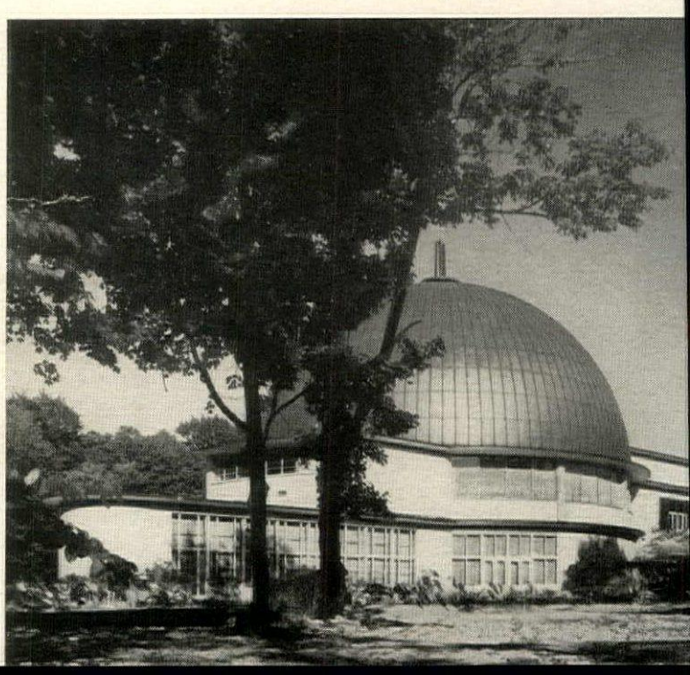
"A few days later I stood in the loft of a small flower-bedecked chapel in San Francisco and played Bach's *Art of the Fugue* as he had wanted me to do, and I paid tribute to a great spirit, my teacher, and my friend."



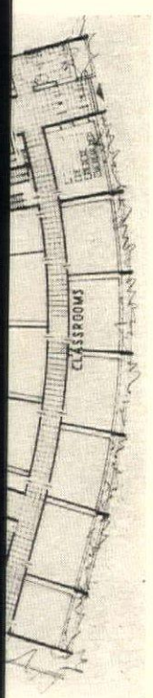
CLASSROOM WING in Cleveland synagogue encloses patio



DOME over temple is 4" shell of concrete, sprayed in place



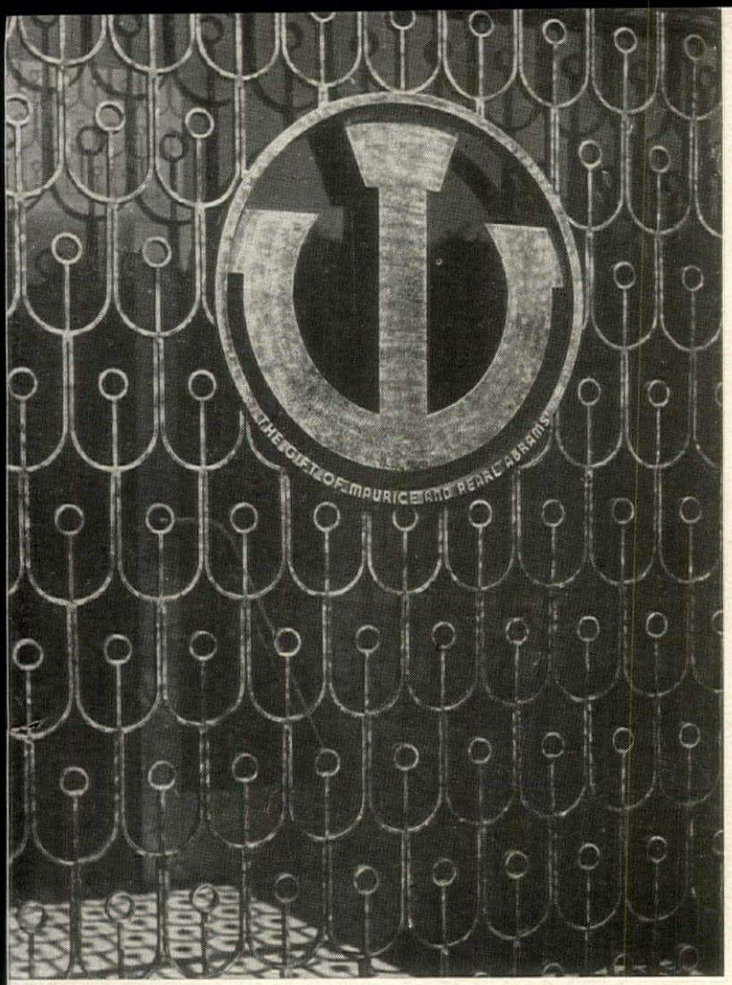
PODIUM is backed by tent, colored blue and pale gold, alternated in vertical stripes.

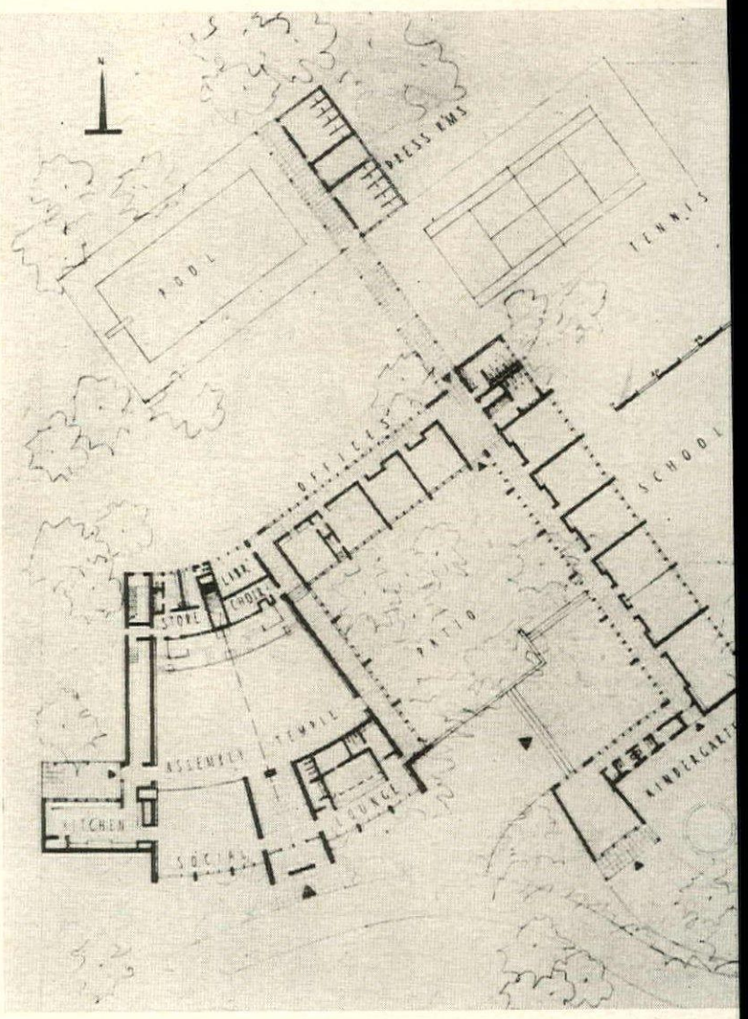


IN CLEVELAND . . . RADIATING FROM THE TEMPLE, A SCHOOL AND COMMUNITY CENTER

CLEVELAND PARK SYNAGOGUE
ARCHITECT: Eric Mendelsohn
ASSOCIATE: Michael A. Gallis
STRUCTURAL CONSULTANT: Isadore Thompson
MECHANICAL CONSULTANT: Clyde E. Bentley
CONTRACTOR: Leonard H. Krill

On 30 acres of densely wooded, undulating land, cut by the 20′ ravine of a stream, Mendelsohn set this axial design as the core of a project which is expected to grow for many years. But he made sure the further development of school and community facilities will never overshadow the symbolic religious root, the temple; he put the liturgy under a 100′ dome (interior on p. 106). And even this can grow; the space enclosed is not frozen because the horizontal stiffening ring of the dome rests on only six peripheral columns. At present the normal seating capacity under the curve of the temple is 1,000, but on high holidays the foyer and assembly to the rear can be opened to make it 3,000. Conceivably, future seating could expand still further. Structure of the wings is a reinforced concrete slab with steel supports.





MENDELSOHN'S ART: relish for decorative elements and ability to make them part of architecture are indicated in Mendelsohn's design for wrought-iron entrance grille of Cleveland synagogue (above) and detail from mural in Grand Rapids synagogue (below).



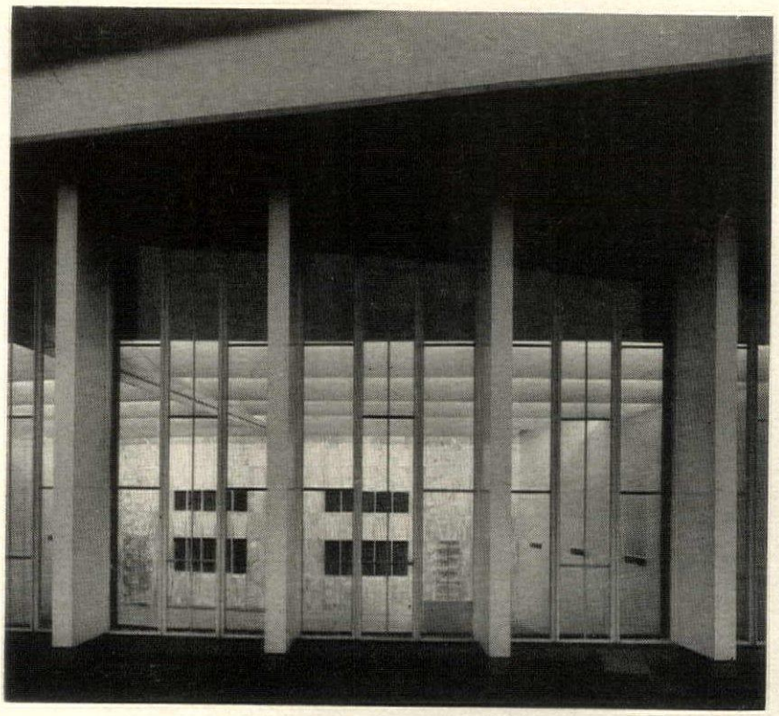
IN GRAND RAPIDS . . . A LESS FORMAL TEMPLE,

When the architect commissioned the mural which covers the most important wall of this new synagogue, the wall behind the podium in the sanctuary, he said to the artist, Lucienne Bloch Dimitroff: "It must be like tapestry, warm and tender."

Architecturally, the entire synagogue has something of that quality too. The structure is simple and direct, but Mendelsohn tried to add the human dimension with sensitive proportioning in the framing of the fenestration, with the intimate enclosure of the proposed patio beside the temple and with the use of gentle curves in plan.

Not one of Mendelsohn's expensive, imposing temples, this one called for ingenuity in use of space. He combined the three big-space functions, the assembly hall, the sanctuary and the social room, into one big room (see plan) split down the middle with a folding wall. This provides another reason for his specification that the mural have an all-over tapestry effect, for it too is split in half when the room is divided.

TEMPLE EMANUEL: Grand Rapids, Mich.
ARCHITECT: Eric Mendelsohn
ASSOCIATE ARCHITECT: Michael A. Gallis
STRUCTURAL CONSULTANT: Isadore Thompson
MECHANICAL CONSULTANT: Clyde E. Bentley
CONTRACTOR: Owen-Ames-Kimball Co.



BIG ROOM is lighted through this rear clerestory above entrance doors.

Photos: Gard

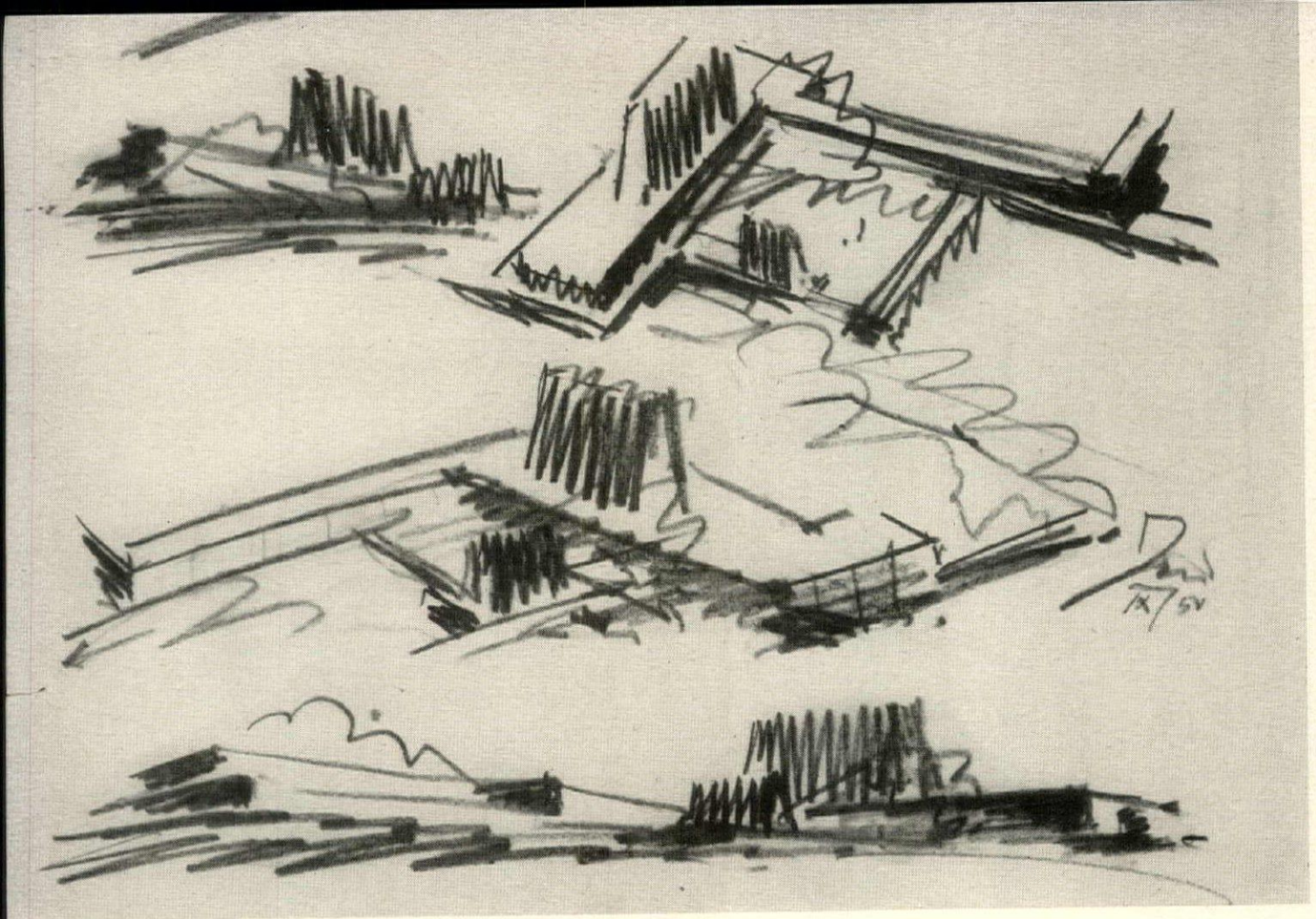


BACK WALL, gently curved, measures 50′ across and 20′ high. Note port for dividing partition in center. Mural was executed by silk-screening white oil paints on birch paneling, then brushing on other colors and applying gold leaf.

SMALLER BUT FLEXIBLE

MAIN FACADE of wedge-shaped temple is dominated by clerestory



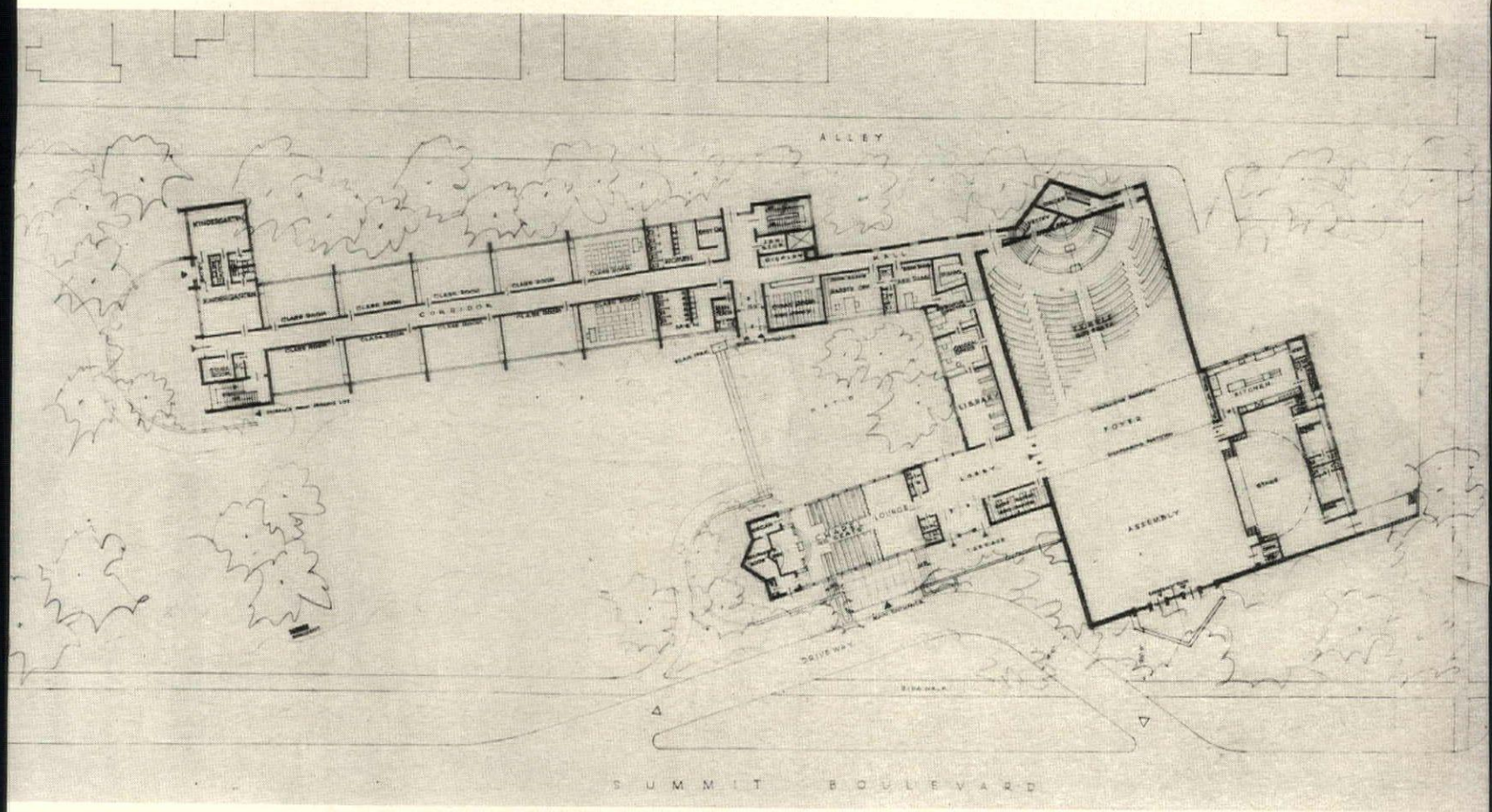


FIRST SKETCHES by Mendelsohn for St. Paul synagogue show that walls of areas which project up above flat roof plane (temple and chapel) were intended to lean inward as they rose. Their simpler vertical execution loses the concept altogether.

IN ST. PAUL . . . SANCTUARY AND CHAPEL ROOFS

Photos: Reynold





RISE SYMBOLICALLY ABOVE COMMUNITY SERVICE WINGS

The temple this building replaced was built in 1904 Byzantine style, so Rabbi Gunther Plaut had worries along the way after construction started: "It must be frankly stated that while the building was being built, and even after its exterior was finished, there was a good deal of doubt, eyebrow raising and dubious comment in the community. Some felt immediately that the sweep of the contours and the movement of the masses as one passes . . . were exciting. Others, however, could not accustom themselves to the square appearance and the long, rather austere lines. . . . However, whatever doubts people may have harbored were completely and utterly swept away when, on dedication day, they entered the building."

Mendelsohn might rather have enjoyed this apprehension and surely would have taken pleasure in the delight of the congregation when they beheld the rich interior he had designed inside the spartan façades. But he never had the pleasure of seeing this synagogue complete.

This is one of the architect's highly symbolic works, in many small, interwoven ways. One instance: the upward-projecting sanctuary and chapels are each divided into ten ribbed sections, numbering the ten commandments. The structure of these projections is steel bents, eliminating the need for columns among the seats.

CHAPEL is simpler counterpart of main temple (next page)



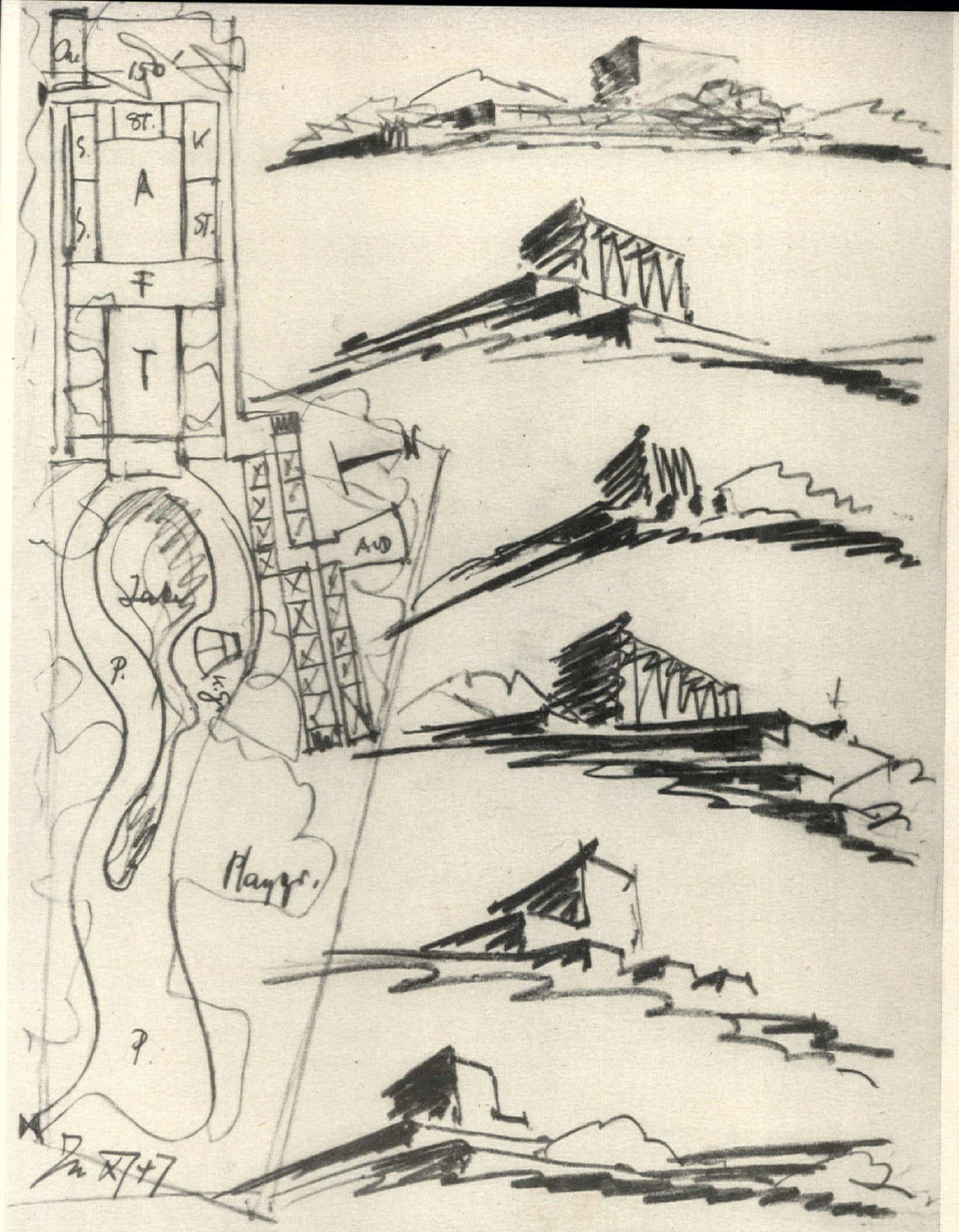
MOUNT ZION TEMPLE: St. Paul, Minn.
ARCHITECT: Eric Mendelsohn
ASSOCIATE ARCHITECT: Michael Gallis
ARCHITECTS FOR COMPLETION: Bergstedt & Hirsch
MECHANICAL CONSULTANT: Clyde E. Bentley
STRUCTURAL CONSULTANT: Isadore Thompson
INTERIOR DESIGN CONSULTANT: Morris Pleason
GENERAL CONTRACTOR: Naugle-Leck

Photos: Reynolds

SANCTUARY in Mount Zion Temple in St. Paul has 12 symbolic steps rising to ark; they represent 12 tribes of Israel. Left, sanctuary from exterior.



FUTURE SYNAGOGUE to be built in Washington, D.C. is shown in one of Mendelsohn's last sketches. Executed quickly with stenographic genius, these sketches are from the same fount which produced his famed Einstein Tower.


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GRAND CENTRAL'S OUTDOOR CONCOURSE

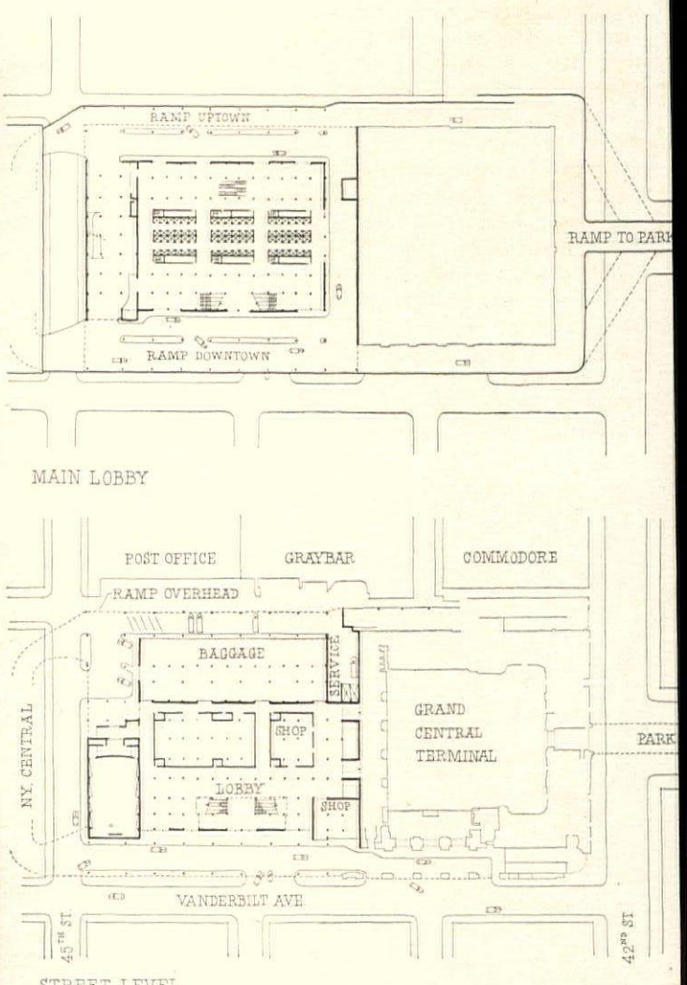
1. A suggestion for preserving the big room
2. An exploration of the room outside

Three months ago, 235 prominent architects from all over the US sent a round letter, through ARCHITECTURAL FORUM, to Robert R. Young and Patrick B. McGinnis, proprietors of Grand Central Terminal in New York, pleading with them to save the concourse no matter what else they built on the midtown site. The architects' argument was based on the conviction that this magnificent interior space was irreplaceable and that it *could* logically be saved without freezing history.

This month it is possible to show one tentative solution which reveals how practical it might be to put up a big building, yet still retain the magnificent room (below). Meanwhile, however, let us also look from the magnificent interior space of the concourse to the almost equally magnificent space around the Grand Central Station.

Photos: (below) Adolph Studly; (opp. p.) Ben Schnall; Walter Daran





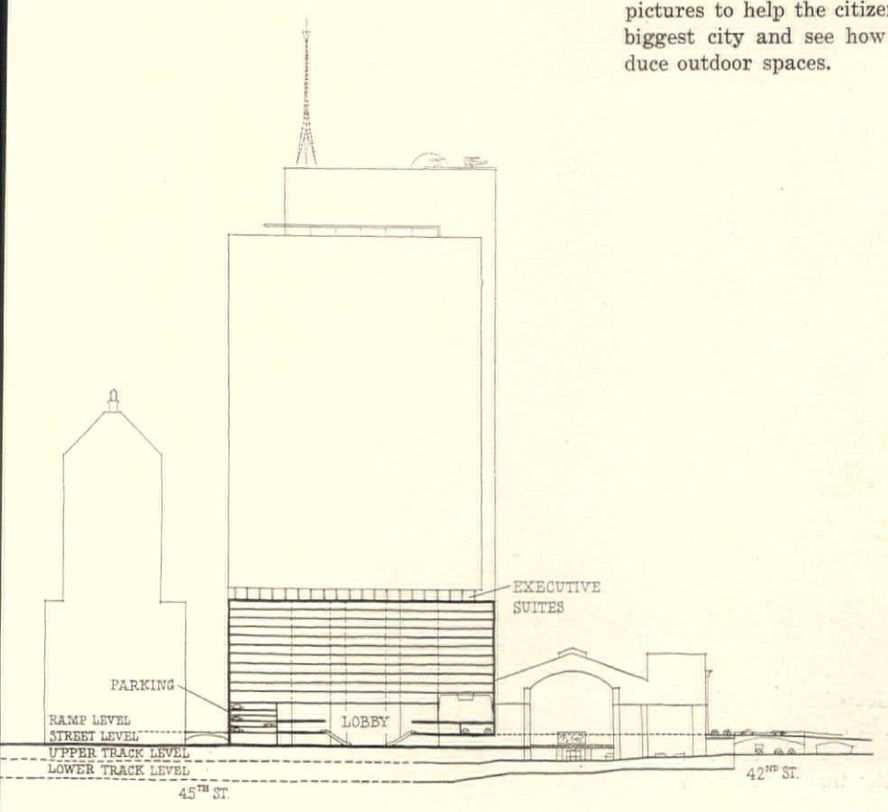
NEW OFFICE TOWER would sit between old concourse (rendered, left, from across 42nd St.) and old office tower to north. Traffic still would flow through whole complex. Autos would drive in on street level from Vanderbilt Ave., would approach lifted lobby floor on ramps from Park Ave., and could then circle the new office block to head either uptown or downtown again. A further improvement suggested by FORUM, and dotted in on plan above: split the bridge over 42nd St. into a Y to eliminate one sharp turn.

One proposal to save Grand Central—by adding to it

As sketched below, Richard Roth of Emery Roth & Sons (retained by Developers Erwin S. Wolfson, Herbert Scheftel, Stuart Scheftel and Alfred G. Burger) has developed a scheme which would preserve New York's great room, the concourse. In the rendered view from 42nd St. its fervent old carved stone façade is contrasted with a backdrop of plane new surfaces. Uptown, the intricately crowned Grand Central office building also would remain. In between would rise a new 65-story tower of glass, sitting on the broad, 16-story base. On top: a broadcasting spire.

The street level of the new office block would be given largely to baggage facilities for Grand Central. The main-lobby floor for the new office building would be one story up off the street, served by escalators from street level. The present ramps which now lift Park Ave. traffic up and around Grand Central would be preserved and widened somewhat, and the crosstown street, 45th, would also survive. On the upper traffic-ramp level a new road would be cut east-west to permit circular traffic around the new office block.

Tentatively titled Grand Central City, the building would contain three legitimate theaters, restaurants, a private club with terrace, and TV studios, besides vast office space. The Roth scheme, originally evolved four months ago, is part of an over-all study being made for all the Central System properties in the whole metropolitan area.



2. A camera look at outdoor spaces around Grand Central

Most Americans think of exterior space as nothing but air into which buildings project. If there are no walls, what is there to look at or use, except at football games? But if ever there was an object lesson for the multitudes in the significant ways empty space actually can be shaped and used out of doors, it is the Grand Central area.

At nine and five a flood of commuters from Westchester and Connecticut flows in and out of Grand Central like the tide through the East River's Hell Gate. Unlike Hell Gate, Grand Central is small menace to navigation. The studied intricacy of its approaches—by ramps and passageways, sidewalks and elevated lanes, under arches and over streets—divides and comforts the horde of people, making the masses a little less massive and a lot more reassuring to each person. But even if you were never to enter Grand Central Terminal, but just wander around it, you could observe a few of the things that can be done with exterior space in cities:

- How buildings can be used to close an endless perspective (right).
- How a low building can be used as a piece of furniture that lets the tall buildings around it compose themselves as if in a big outdoor room (next page).
- How the use in multiple of arches, arcades, ramps, etc., can shoot holes through the cold walls of city blocks—and open up city *neighborhoods* for business.

A city should be something more than buildings at random; it is high time that planning got up off the map in America and took account of these outdoor rooms we all enjoy (whether we always know what is causing our enjoyment or not). Here are pictures to help the citizen see his country's biggest city and see how buildings do produce outdoor spaces.

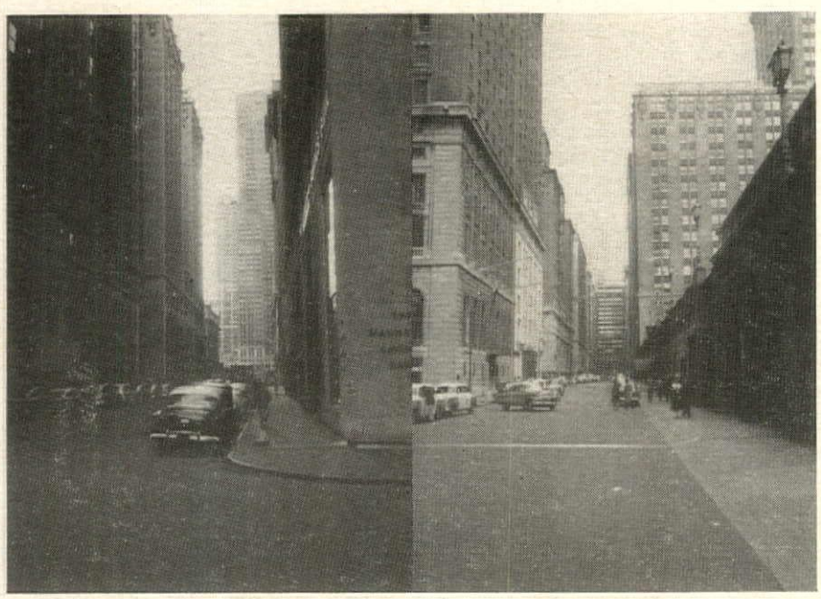


LOOKING UPTOWN on Park Ave. above Grand Central, the eye and the camera see an endless vista, much like the unhappiness symbol recognized and used by surrealist painters. The eye has nowhere to stop.

LOOKING DOWNTOWN on Park Ave. (south), Grand Central is a terminal for the eye, containing and dignifying its surroundings, keeping the city from being endlessly impersonal and terrifying.



City architecture is not entirely for the pedestrian



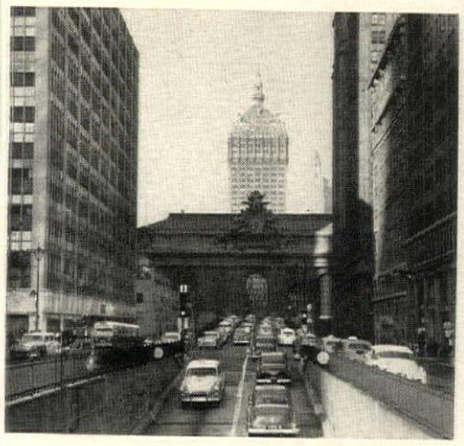
Grand Central's concourse is low and opens a view for several thousand windows around it. But the pedestrian benefits too; at left, compare the canyonlike gloom of upper Vanderbilt Ave. where it is walled on both sides by high buildings, with the relatively airy pleasantness of lower Vanderbilt Ave. beside Grand Central's recumbent form.

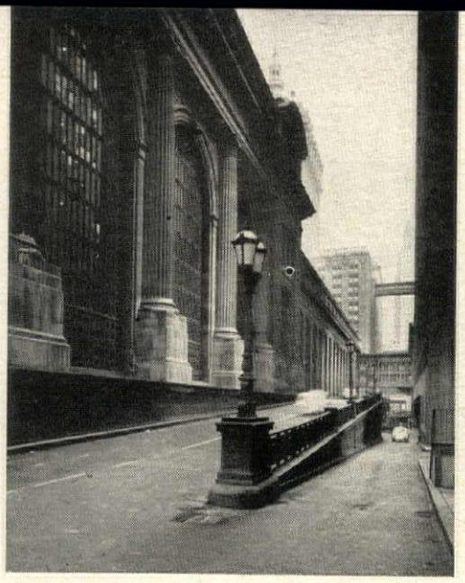
Photos: Ben Schnall

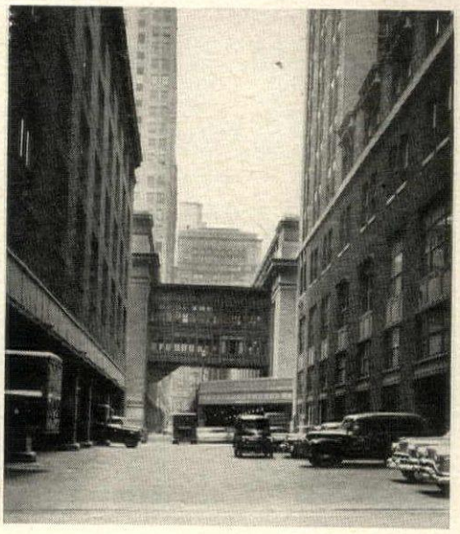
The big outdoor room complete with baldachin



It is one of New York's characteristic spaces today. It is in a class with Rockefeller Center's mall, with the difference that here the group is better than the individual buildings.









Civics

A few weeks ago one of the principals of the railroads controlling Grand Central asked a FORUM editor what Architect Paul Rudolph meant in his AIA speech last summer when he lauded the Grand Central area. He meant this: the ramps, bridges, tunnels, passageways, elevated roads, connecting arches and organized courtyards in the area are deeply satisfying to their users, helping make the city more than a collection of separate, coolly efficient buildings.



What a solid new cliff of offices would mean in added congestion

The new congestion which would be added to the Grand Central area by building an office building over the entire site was estimated at a recent N.Y. symposium on the subject by Architect Giorgio Cavaglieri:

". . . A volume of 40 or 50 floors, over and above the terminal, extending from 42nd to 46th Sts., may give space to an additional mass of 25 or 30 thousand office workers. . . . Lined up ready to enter the building all at one time, at the military rate of 5 sq. ft. per person, shoulder to shoulder, these 30,000 may need a space of 150,000 sq. ft. Counting the 100′ width of 42nd St., this would mean a parade of an army occupying from building line to building line the space from Vanderbilt Ave. to 3rd Ave., just enough to leave the remaining part of 42nd St. down to the East River ready for occupancy by the similar army of employees who may come out of the now-under-construction Socony-Vacuum building. And this is as if the Chrysler building or the other ones did not exist at all, and nobody else but these office workers had to pass on 42nd St.!"





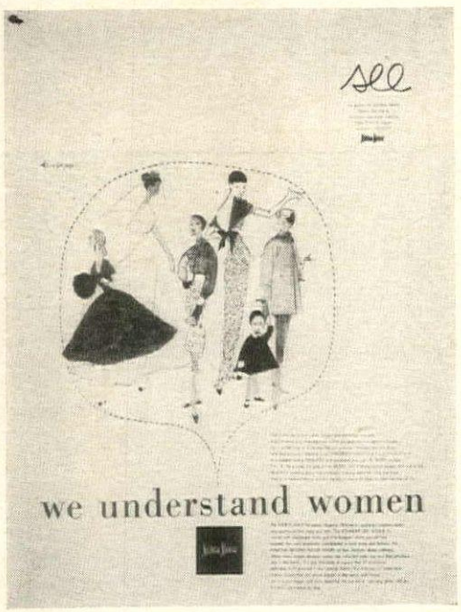
1914: business, $1 million



Photos: Wm. Langley

1926: business, $4 million

DISCREET EXPANSION OF A FAMOUS STORE



NEIMAN-MARCUS AD layout reflects store's use of design in selling, without making a toy of design. Like the remodeled building, ad has lively approach but emphasizes merchandise in the end.

OWNER, Neiman-Marcus, Dallas, Tex.
INTERIOR DESIGNER, Eleanor LeMaire
ARCHITECTS, DeWitt & Swank
GENERAL CONTRACTOR, Henger Construction Co.

Since its beginning in a 50′ frontage store in Dallas in 1907, the financial progress of Neiman-Marcus has been an accurate graph of the zooming southwest. But a Neiman-Marcus label also has as high a currency in the merciless prestige scale at New England girls' colleges, for instance, as any Fifth Ave. equivalent; a full 40% of N-M business comes from out of town. The basic reason for this satiny glint of reputation is that Neiman-Marcus has stubbornly refused to grow from a discriminating specialty shop to a full-scale department store—this despite the N-M quantitative boast: "under one roof . . . merchandise that could only be obtained by shopping 27 different stores in New York."

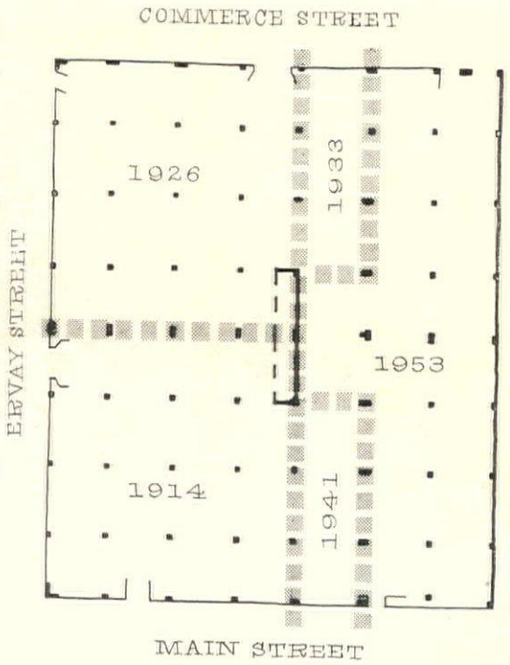
Expansion had to come to N-M, however; even a store which wanted only the icing from the Texas cake had to expand in a big way postwar. The problem was to keep the big expansion looking small, to keep the old customers from getting uneasy.

A partial solution to the problem was the addition of a swank new station-wagon store in a Dallas suburb (AF, Jan. '52). But the full solution did not happen until President Stanley Marcus decided to build a new warehouse and service building between downtown and suburbs to which he could move most of downtown's service functions. That freed a lot of new space for selling, but that was not enough; in addition he pushed the roof up two floors and slid a new eight-story building quietly in behind the old one, to complete a full doubling of downtown space almost imperceptibly to the pedestrian. Then he made his most crucial demand. He asked Interior Designer Eleanor LeMaire to do two things: make the entire store as luxurious as its reputation, and, even more important, keep it looking small and intimate, as always.

Miss LeMaire's success is attested by Stanley Marcus' present relaxed satisfaction. She suffused the store with rich surfaces, colors and textures, but retained and extended the compartmented "salon" atmosphere, creating a specialty store which includes that staple element of the mass department store, escalators, yet maintains an unwavering reputation. For every dollar of merchandise on display downtown, there are four dollars in reserve stocks. Store turnover is about 4½ times a year, with all departments in Neiman-Marcus paying their way except the new restaurant. With a $25 million annual business, still growing, Neiman-Marcus is enjoying not only the icing now, but is nibbling at the cake.



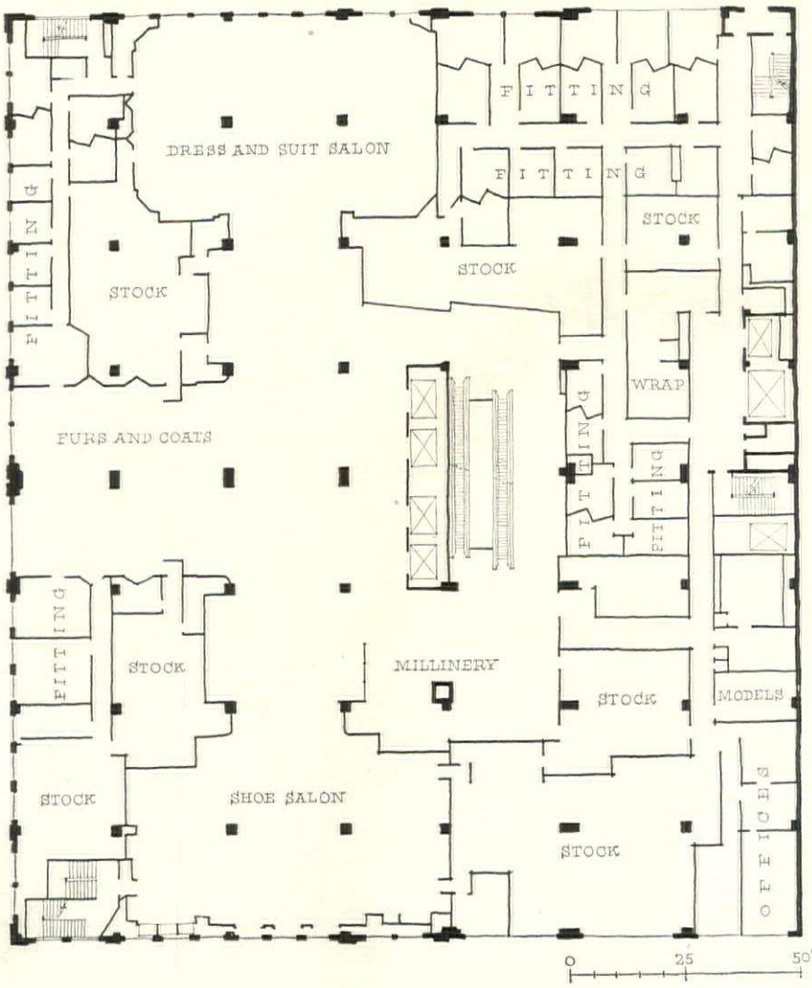
1954: business, $25 million (incl. suburban branch)



OLD STEEL FRAME BUILDING was extended by concrete frame structure (steel deliveries were a worry when building was in design). Original four-floor structure had two full floors added; parts of rear section go up to eight floors. Cost: $4½ million plus $1 million service building and $2 million suburban store.

SHOW WINDOWS of new section display whole store interior

©Ezra Stoller



A rich palette and some invisible partitions

"The customers can't take one quick look and feel they have seen this store," says a Neiman-Marcus executive. "They have to come back several times in order to absorb the subtle use of color and woods."

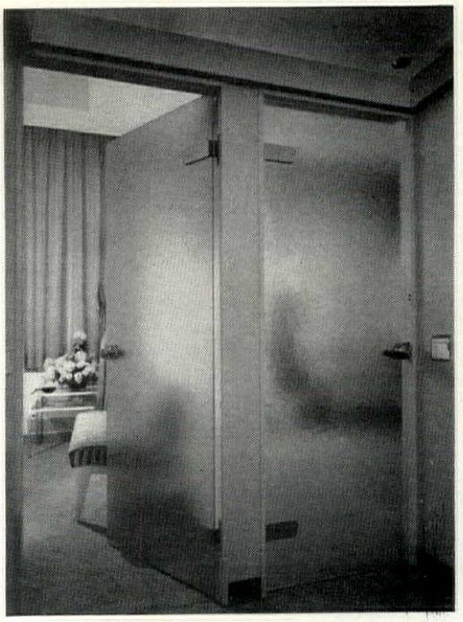
To encourage this slow osmosis of the environment and to observe the dictum that Neiman-Marcus was selling merchandise, not a flashy paint job, the interior designer used a sophisticated range of colors, such as cactus, absinthe, neutral chartreuse, pewter, taupe, deep nutmeg, blue pearl, gold stone and greige—esoteric to the ordinary ear, but just plain technical English in the trades of interior design and decoration.

The effect of the mixed hues remains strong, however, because there is definite color change from one department to the next. This change in colors is keyed to form good backgrounds for the specific merchandise displayed in each nook, of course, but it has another function which may even be more important to the client. Neiman-Marcus is a salon store, which needs the intimacy of strongly defined selling areas, yet their principal customers, Texans, like wide-open spaces. In this interior design, both demands frequently could be met by using a strong change in color between departments—in effect, building an intangible partition which could provide both definition and openness.



JEWELRY DEPARTMENT, on first floor, is cooly colored to set off glint and glitter of merchandise. Walls are covered with shantung; case interiors are lacquered or covered with velvet; counter fronts are leather covered. Private selling room adjoins salon; its walls are finished in blue leather.

Photos: ©Ezra Stoller



FITTING ROOMS are very important in selling N-M's costly lines of clothing. Their illumination level, softer than in old brightly lighted rooms, now is 50 foot-candles.



MILLINERY DEPARTMENT on the second floor is defined by glass screens. Beige silk gauze curtain can be pulled across to set space off more definitely. Virtually all lighting in store is incandescent, with fluorescents only in coves.

MEN'S SHOP has own entrance from street. Travertine-floored, it has one wall covered with natural ash boards; other walls are painted pewter, taupe and deep nutmeg. (Another men's shop is on third floor, with walls in dark buckskin and bronze burlap.) Colors inside showcases in first-floor men's shop show how carefully over-all effect was composed; interior colors of perimeter cases are in gray blue and smoke blue lacquers, but center island cases warm up with thrush, sandlewood, nutmeg and adobe.





LINGERIE DEPARTMENT. Aim here was "a watery feeling" achieved with shades of turquoise green, aqua accented with green gold. Other colors in department are pale chartreuse and gold metallics.

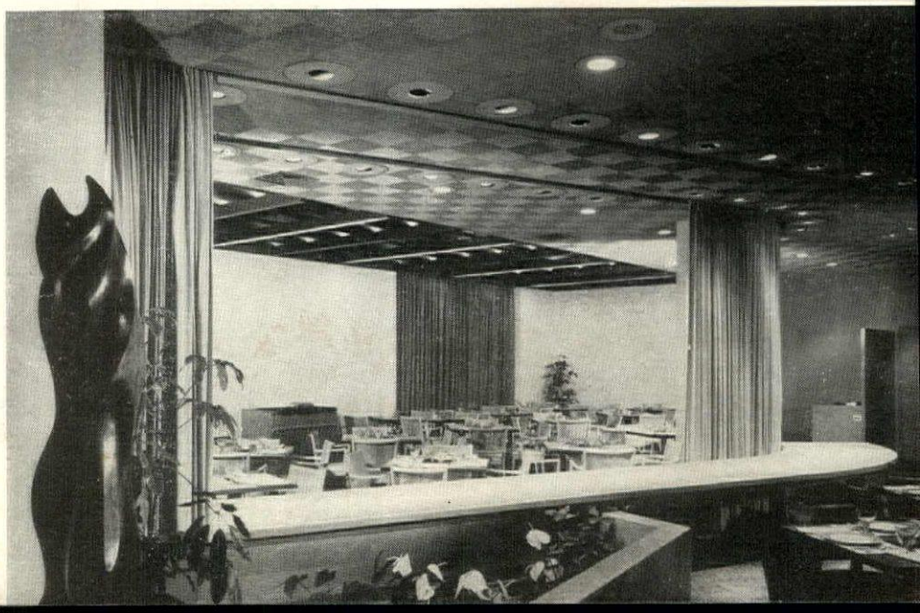


MEN'S SUIT SHOP uses lengths of actual suitings as hangings. Customers could order their suits right off wall. Over-all in this shop, dark shades in neutral hues predominate, with a few bright colors inside the display cases. High level of artificial illumination from recessed ceiling spots keeps general atmosphere from getting somber, however. Instead, it is serious, tailored to mood of men selecting suits.

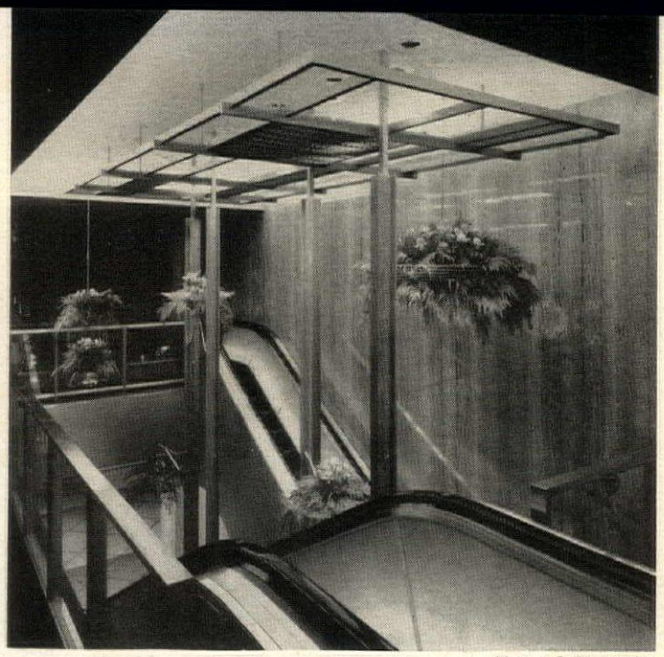


DRESS SHOP. When spaces are open, they are wide open, not cluttered with furniture. Although few plants happen to appear in photos, there actually are 39 interior planting beds totaling more than 1,300 plants.

TOP-FLOOR RESTAURANT is designed also for fashion shows, with runway meandering out through center of room. Curtains on either side of walkway can be closed, if fashion show is not using entire restaurant.







Photos: © Ezra Stoller

How to hide an escalator

Neiman-Marcus, like all other specialty stores, long had a deep-rooted distrust of the impersonal efficiency of escalators. Says Stanley Marcus: "I was against them too, for years, but then I woke up one morning and saw we were crazy. We believed in airplanes, didn't we? And cars and fast trains and other modern transportation? Why not escalators?

"It was just because no other specialty store had ever had them before. But no specialty store has ever had our traffic!"

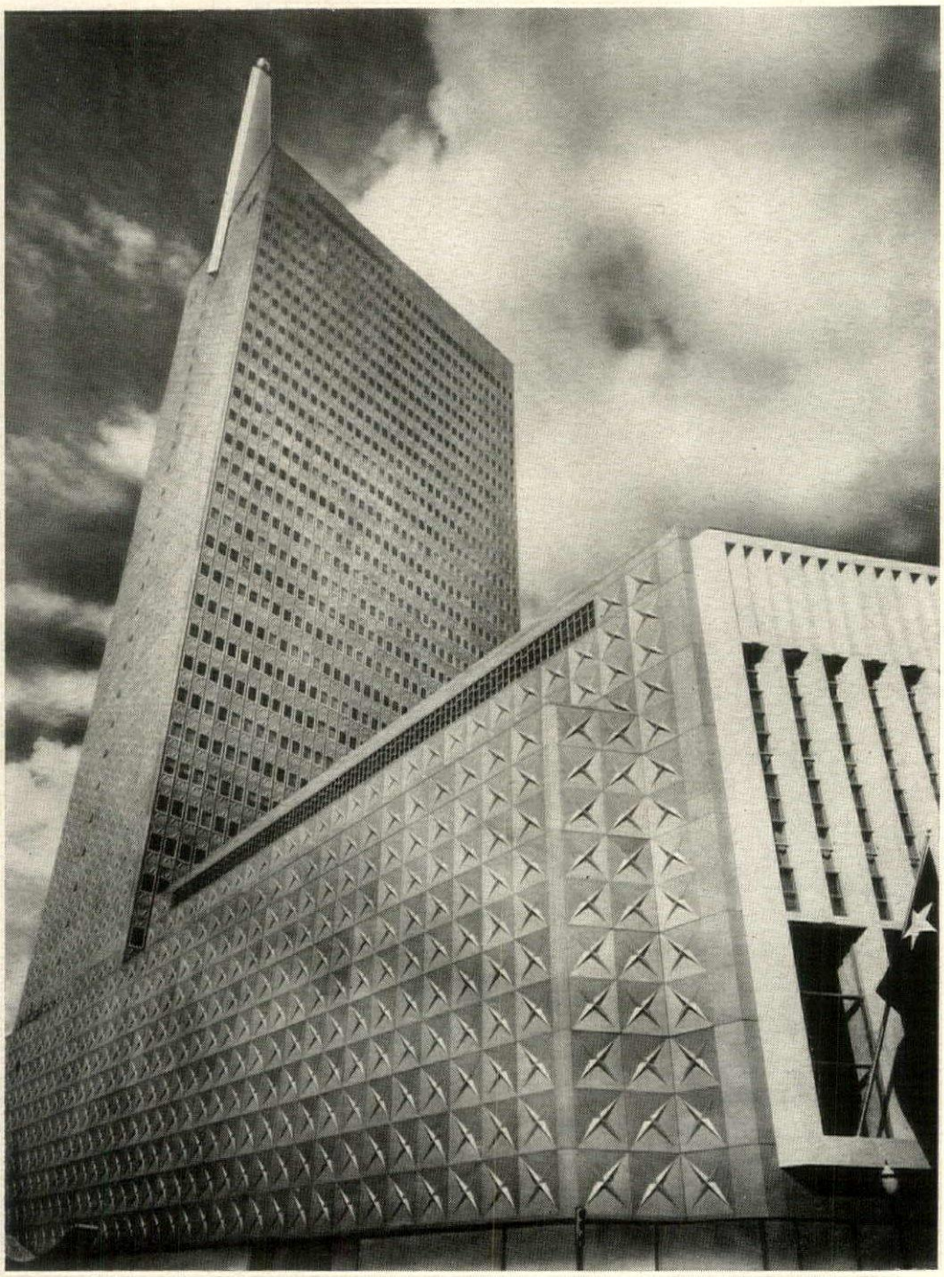
Marcus argued the point with other executives of the store, and won; then he went ahead and put in what probably are the most understated escalators in a US store, deliberately treated as he thought a specialty store should treat them. Instead of being planted to rise out of a sea of merchandise counters, giving the usual department-store panoramic views en route, these escalators are tucked in behind the elevator shaft. "We did not want someone riding on the escalator to intrude on the privacy of someone who might be buying a mink coat below."

Eleanor LeMaire, a specialist at making escalators look exotic, gave the full treatment to this one, with hanging ferns, perforated anodized aluminum balustrades illuminated from within, and framed ceilings to soften the usual barren well. And, by leaving out the back wall and separating the runs, she was able to make the criss-cross arrangement seem less bulky than the usual escalator. The well is open from the first to the third floor.



BUILDINGS IN REVIEW

An office building with a split personality. . . . A small bank with television as its heart. . . . A cemetery with an unusual concept of memorial design. . . . A department store with a new line of display fixtures.





PATTERNED WALL of embossed aluminum squares is metallic-like battleship but more glittering. Squares look best on simple tower; are bound to look confusing on multiple angles of building offsets (foreground).

←

Bank front of white marble, red granite, is handsome in itself but looks pasted on.

SCHIZOPHRENIC BUILDING

Dallas' Republic bank takes prize for height but not for interior design —comment by Professor Thrugg

"Showing off," said Professor Thrugg, "is just about the main object of architecture. There are some buildings that show off like lovers, some like philosophers, some like men of affairs. A very few show off by *not* showing off, like great gentlemen or saints. And some show off in a youthful sort of way—which, incidentally, brings me to Dallas."

His students dutifully whipped out their notebooks.

"The youthful approach is interestingly the oldest," went on Thrugg, "and it looks usually to getting up the tallest structure with the most beacons and electrical display on top. In Dallas, for example, there was an insurance building which was the highest. The new Republic Bank tower may not be quite as tall, but by adding a taller and fatter illuminated mast or beacon, its president has been able to claim the height record.

"The bank has of course a lot of other new things to show.

"One is a fine new aluminum curtain wall, the contribution of its architects, carrying forward a new kind of design exploration. It glitters handsomely in the sun far across the cotton lands, and on gray days depends on its repeat pattern of embossed squares, like a fancy waistcoat.

"Another is that special marble trim over the entrance, an experiment which I find less successful. You know, in older days no banker was happy except behind a range of marble columns. Here the architects have reduced them to a mere gesture, hoisted them off the ground, and applied them to the main front as trim. Finding a stone applique hung on a metal building is disconcerting, as if the admiral's bridge had been dressed in stone on a battleship. It makes you wish that the admiral of the bank had been content to break out in not quite so many directions. After all, he had his illuminated drum major's baton, and he had his bright metal waistcoat: why try at the same time to look back and be a Roman senator?

"But it's when you get inside that you see how really far our energetic banker—or his decorator—has ranged down the sands of time, not to mention direct air flight. There are rooms where you can play Geor-



CHECKERED CEILING over second-floor "officers' platform" makes monumental impression on visitor as he rides escalator up to banking floor. (First floor is stores.) Carpet is golden; moderne desks are walnut.



CHECKERED FLOOR of employees' cafeteria looks like banking floor upside down, and overwhelms lighter furniture. (Checkered ceiling consists of recessed lighting panels; checkered floor is of vinyl tile.)

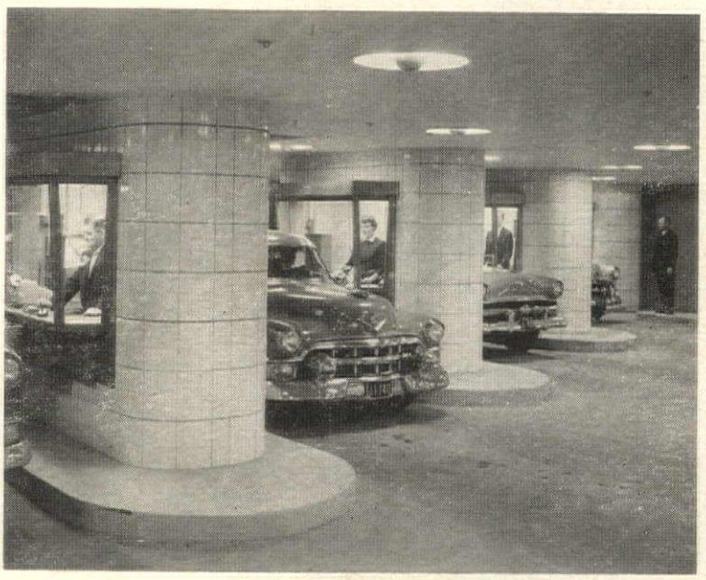


MODERN MACHINES, 58 strong, keep track of bank's big business in fourth-floor bookkeeping department. Pneumatic tubes provide interdepartment communication. Bank handles 225,000 checks daily.

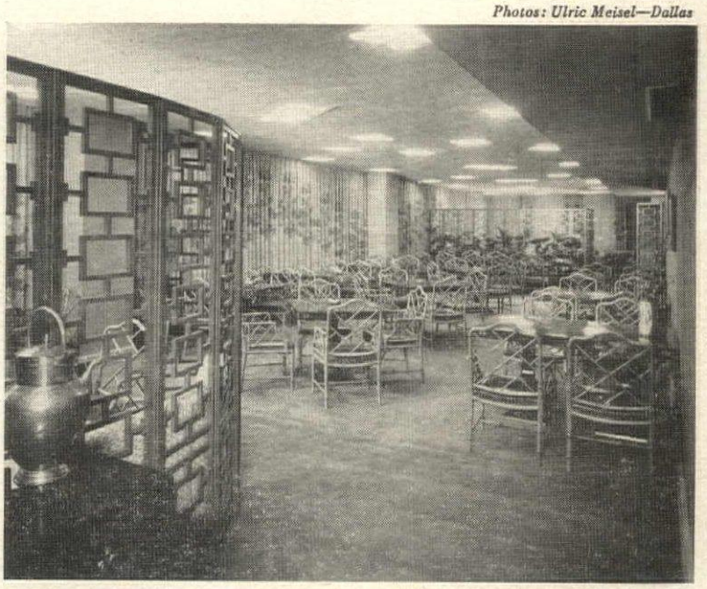


ANTIQUE FURNITURE, paneled doors and brass chandeliers create markedly different (and incongruous) atmosphere in long reception room outside row of executive offices on third floor of bank.

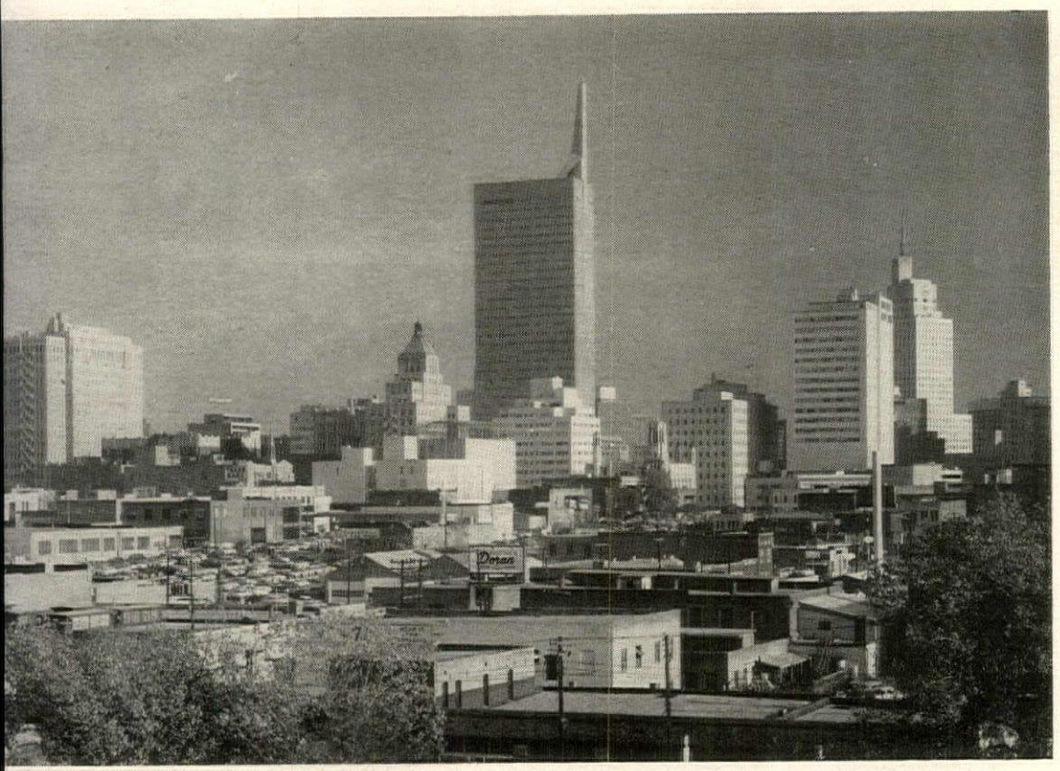
Photos: Ulric Meisel—Dallas



BASEMENT BANKING is conducted busily from autos at tellers' stations on first level below grade. Vaults are also on this floor. Garage is one level below.



ROOFTOP DINING for bank's officers on 35th floor of office tower is busy with rattan rococo. Curtained windows (in photo above) command splendid view of Dallas.



BEACON TOWER of Republic National Bank building dominates Dallas' growing skyline

gian gentlemen, others where you can play Chinese lady, and yet others where you can make yourself up in fantastic garb, like combination Pompeian-moderne. . . ."

"Well, now, what's wrong with that?" challenged an irritated student. "You'll have to admit that even Frank Lloyd Wright has taken themes from the Mayans and ideas from the Persians. Aren't all ideas, past and present, rightfully ours?"

"Ours only if we digest them," quietly replied Professor Thrugg, "ours only if we really work them through, in terms of our own clear purpose—assuming that we have one. Otherwise they're just fancy dress. They strike you like the getup of an African chieftain wearing an assortment of bright handouts that do not really belong to him. . . ."

"And how would *you* change this bank?" asked a serious thinker.

"I couldn't," said Professor Thrugg. "For such immaturity there is only one cure—growing up, so we play our innocent little games with greater sophistication."

Architects: Harrison & Abramovitz and Gill & Harrell; engineers: Edwards & Hjorth, John Mann, Jaros, Baum & Bolles, Zurnwalt & Vruthers; contractor: J. W. Bateson.

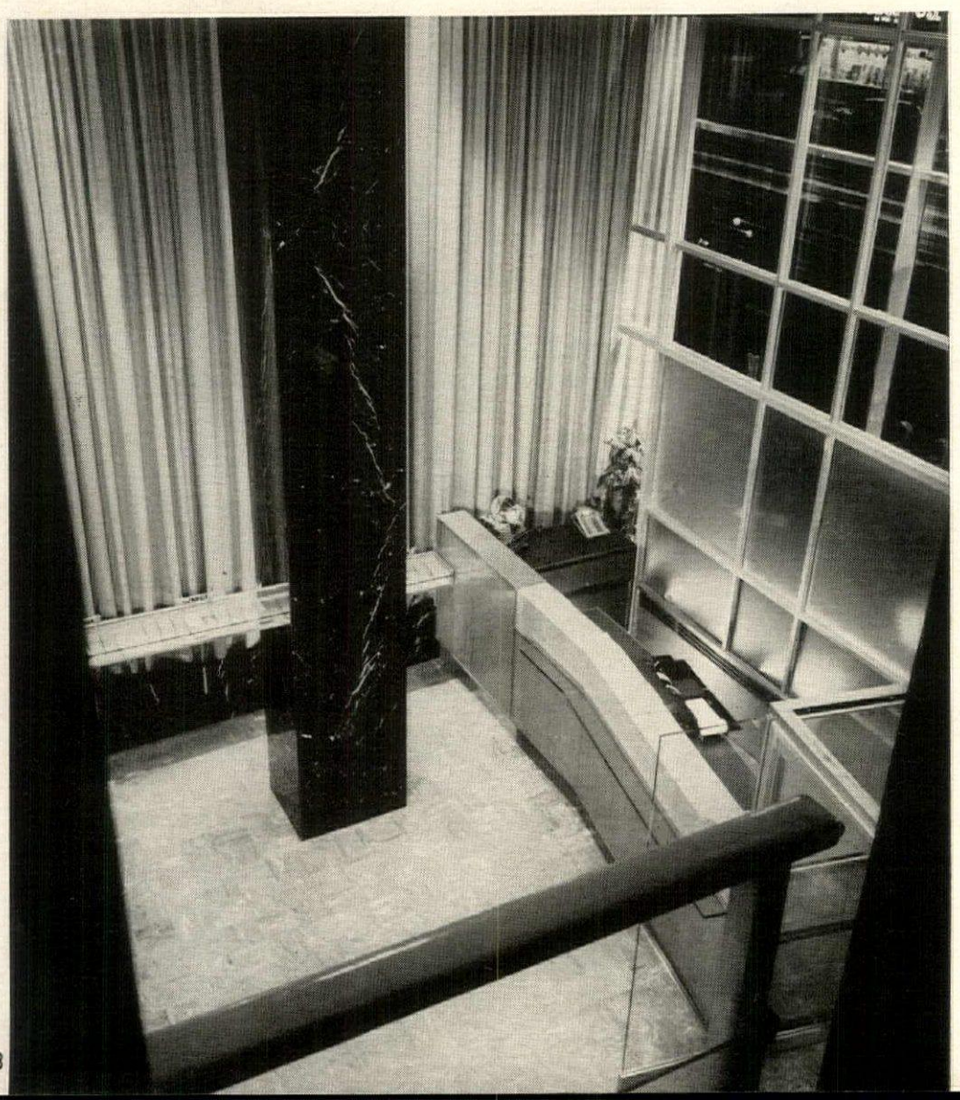
TELEVISION BANK

Small branch office attracts 14,000 new accounts with bright colors, communicates with main office via TV

Television, tight planning and bright colors have helped this little branch of the New York Savings Bank build up a $32 million business with 14,000 new accounts in little more than a year. Thanks to three closed-circuit television receivers and an autograph transmitting device, this branch has visual access to all the main office records and can compare signatures in either direction. Result: customers with main office passbooks can make deposits and withdrawals in the branch office—and vice versa—and the branch can do with fewer executives, clerks, file cabinets and square feet.

Another of the bank's attractions is color—color as gay as the Neiman-Marcus color (by the same designer, p. 120) is soft—and color clearly visible from the street. The color scheme is a patriotic red, white and blue trimmed with black marble and bronze.

Designer: Eleanor LeMaire; architect: John R. Weber; general contractor: E. S. McCann & Son, Inc.



BANK FRONT, viewed from balcony, shows money-order counter in front of big double window. Drapery and floor are red.

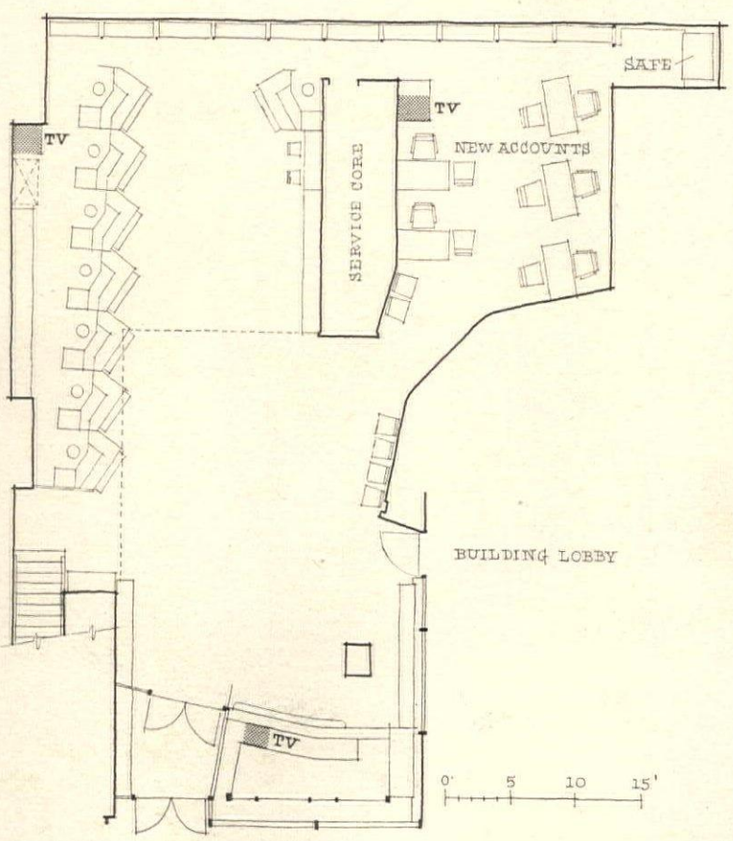


Photos (except top opp. p.): © Ezra Stoller

BANKING FLOOR: saw-tooth tellers' counter helps get customers into lines for quick service. Floor is red rubber tile; walls are red, white and blue; ceiling is bronze acoustic tile. Balcony is manager's office.

TV RECEIVER with built-in signature transmitter occupies corner of new accounts area. "Squawk box" atop cabinet provides oral communication with savings bank's main office, 35 blocks away.







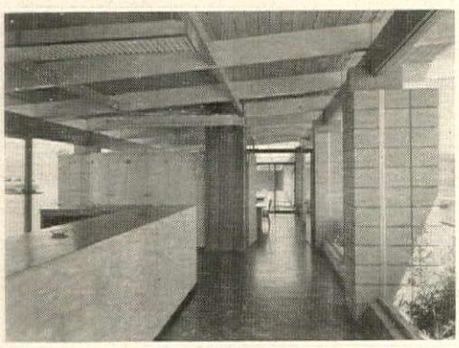
Photos: Roger Sturtevant

ADMINISTRATION BUILDING sets architectural character for future buildings (two mausoleums and crematory) and for monuments. Shallow reflecting pools are made blue by addition of copper sulphate. Driveway passes through building.

MODERN MEMORIALS

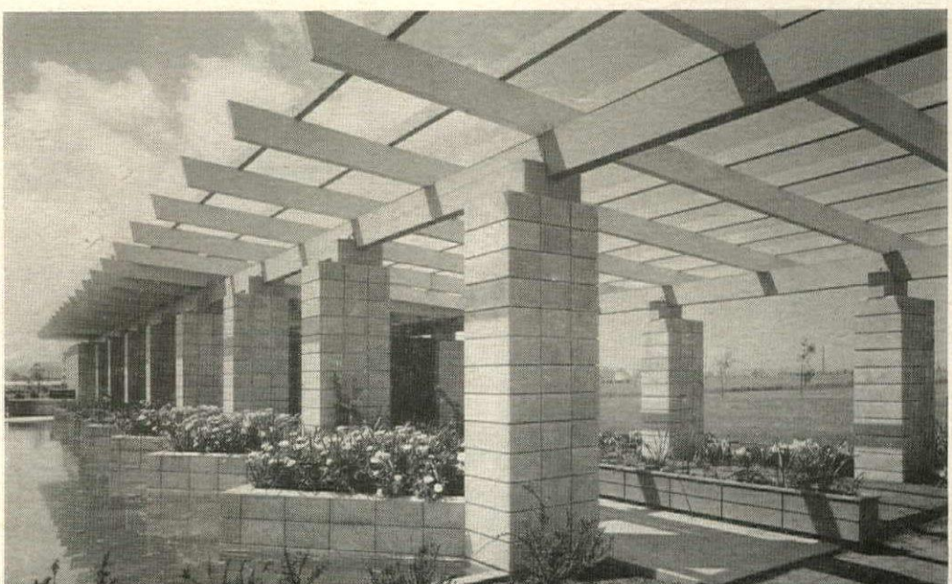
New cemetery has no tombstones; its gardens are dominated by architectural monuments of modern design

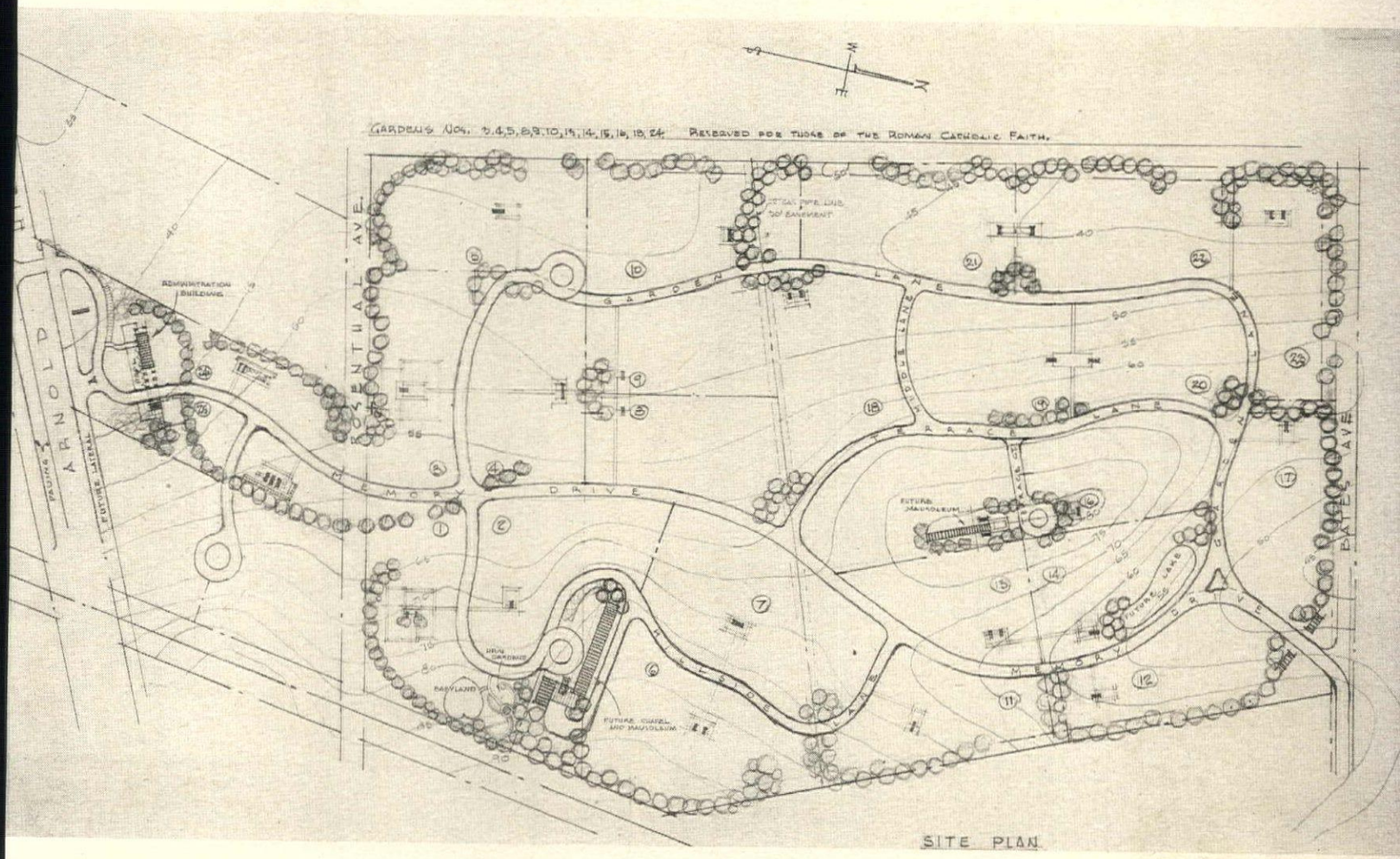
Although seldom regarded as such, a cemetery is a business venture. And in this age of high-cost labor, the difference between profits and bankruptcy may well be tombstones. A cemetery without tombstones need put only one gardener astride a power mower, instead of putting several gardeners on their knees with hand clippers. That is one reason Memory Gardens of Contra Costa, Calif., has no tombstones. Its graves are





OFFICE INTERIOR is informal and friendly, finished in redwood and concrete block. Cost: $33,500.





marked with small stone or bronze plaques set flush with the ground and offering no obstruction to the motorized gardener.

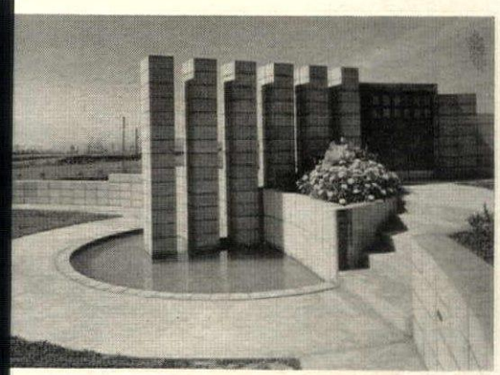
This so-called memorial park-type of cemetery is not new, but Memory Gardens has carried the concept well beyond that of its prototypes. Credit for this goes to Architects Anshen & Allen, who did the site planning, designed the buildings and monuments and directed the execution of the entire project.

To assure orderly development, the 70-acre tract was divided into 25 "gardens" (1½ to 2½ acres each), three or four of which will be developed and opened at a time. Each garden has as its focal point an architectural monument of somewhat abstract design—a refreshing change from the figure statuary of questionable merit which marks so many cemeteries.

Commenting on their unusual design commission, the architects note that "the most important consideration was that the design of the elements in the initial stage should establish an appropriate character to be carried through the development of the whole cemetery. Perhaps the most important single factor in this respect was the administration building at the entrance. Actually a gateway, this building with its beamed roof and pergolas has an informal garden-like, almost residential character which is given a quality of permanence by the masonry walls and piers. The same pleasant informality was sought in the design of the garden monuments. This whole concept is in opposition to the solemn and pompous monumentality often associated with cemeteries."

In a lighter vein, FORUM's reporter commented on the operation of this modern cemetery: "Along with physical modernity to combat maintenance costs is a modernity of attitude of the staff. At one moment they are as sanctimonious as the traditional undertaker and at the next moment as colloquial, backslapping and wisecracking as Babbits. But in either phase they never forget to be salesmen. For a while I felt sure I would never get out of the place without arranging to come back feet first."

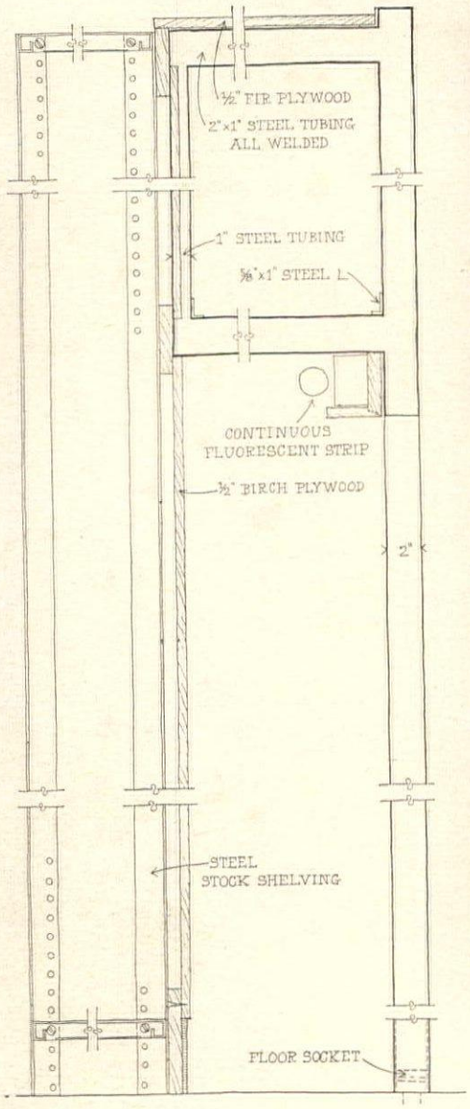
Architects: Anshen & Allen; landscape architect: Douglas Baylis; engineers: Earl & Gropp; contractor: Hugo Miller Jr.







TYPICAL MONUMENTS, located in centers of "gardens," echo design of gateway administration building





ONE-WAY FIXTURES are backed by stock cabinets to form storage-display partitions. Photos show design variations to accommodate shoe-fitting chairs, sporting goods and glassware. Note wide variety of materials used with standard hollow metal framework.



DEPARTMENT STORE DISPLAY

Standardized frames accommodate wide variety of goods, give Macy's suburban subsidiary a uniformly handsome look

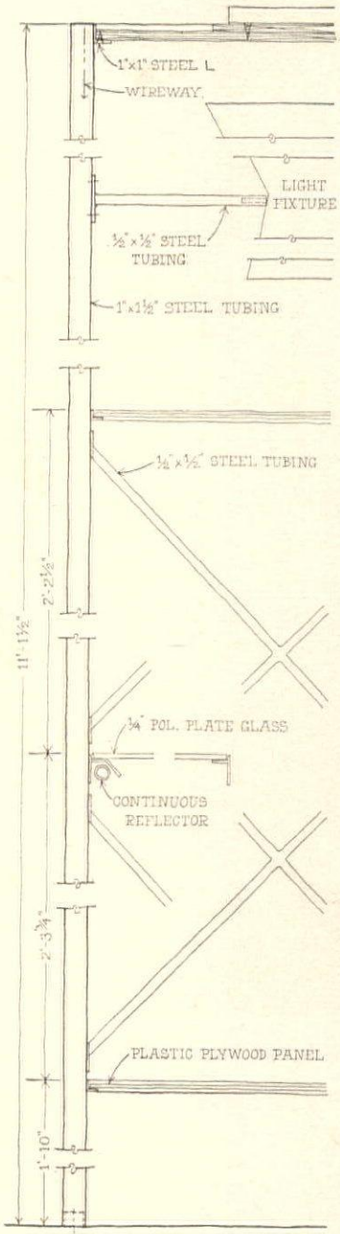
Camouflaged behind a "modern colonial" red brick front, Bamberger's new store in Plainfield, N.J. puts interesting new display techniques to work. Modular fixtures with standard skeleton frames are varied to suit different display problems and are finished with various decorative materials. They give the interior a feeling of spaciousness and orderliness, provide the management with considerable display flexibility and save money without sacrificing quality.

The basic materials are hollow steel sections coated with plastic paint and assembled into two broad classifications of fixtures: those which are combined with stock storage facilities to take the place of customary partitions (this page), and those which are freestanding and transparent (opposite).

Owner: R. H. Macy & Co.; interior architect: Office of Meyer Katzman, Richard Katzman, in charge.



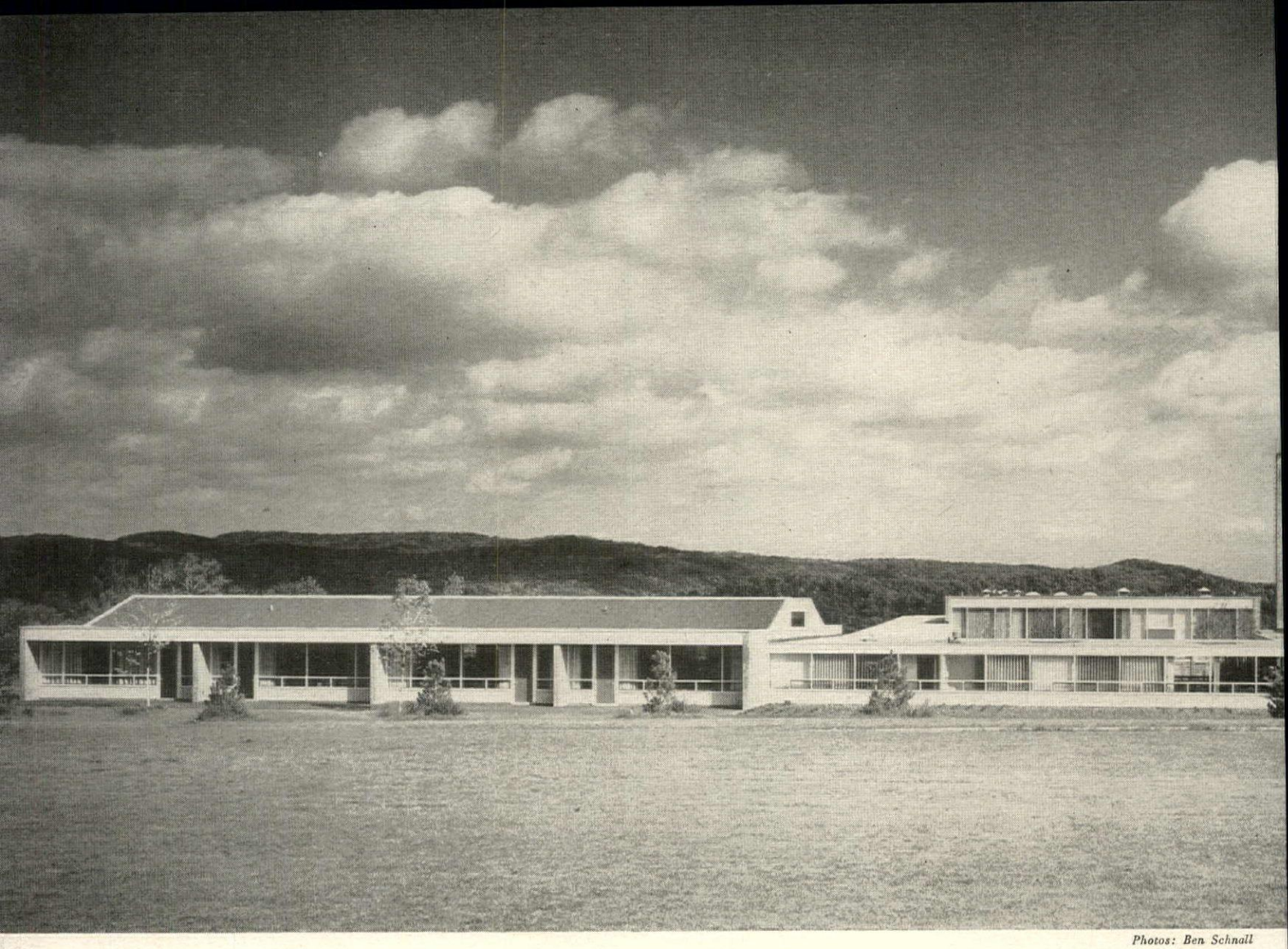






TWO-WAY FIXTURES of various sizes and shapes incorporate shelving, panels of wire mesh, cross-bracing and built-in lighting. Both wire mesh and cross-bracing are used decoratively as well as structurally. Frame is usually sprayed a dark color; other elements are light colored. Open fixtures help define departments and establish continuity between departments. Because they are relatively light and not permanently fastened to floor and ceiling, fixtures can be rearranged to meet changing requirements.





Photos: Ben Schnall

THREE SCHOOLS . . . THREE APPROACHES

1. AN ARTICULATE SCHOOL OF GLASS

It opens out toward the changing seasons, in toward a friendly court of flowers

SALISBURY CENTRAL SCHOOL (elementary), Salisbury, Conn. ▲ 12 classrooms; 360 pupils (avg. 25, max. 30 per classroom).

FEATURES: Articulated plan separated into child-scaled units of varying heights according to function. ▲ Center court for views, circulation, informal gathering. ▲ Upper and lower grades separated and controlled by central administrative unit. ▲ Separate circulation under cover to gym-cafeteria unit. ▲ Multiuse lobby for waiting, exhibits, dancing, minor circulation. ▲ Self-contained classrooms with toilet, basins, lockers outside door and paved apron for outside play and classes. ▲ Cafeteria doubles as assembly-theater with chairs left standing, folding tables stored under stage. ▲ Gym located on downhill side to gain ceiling height, easy accessibility from old school. ▲ Large glass areas for sun and view with sills low enough for children to see out. ▲ Crisp, white New England trim and red brick.

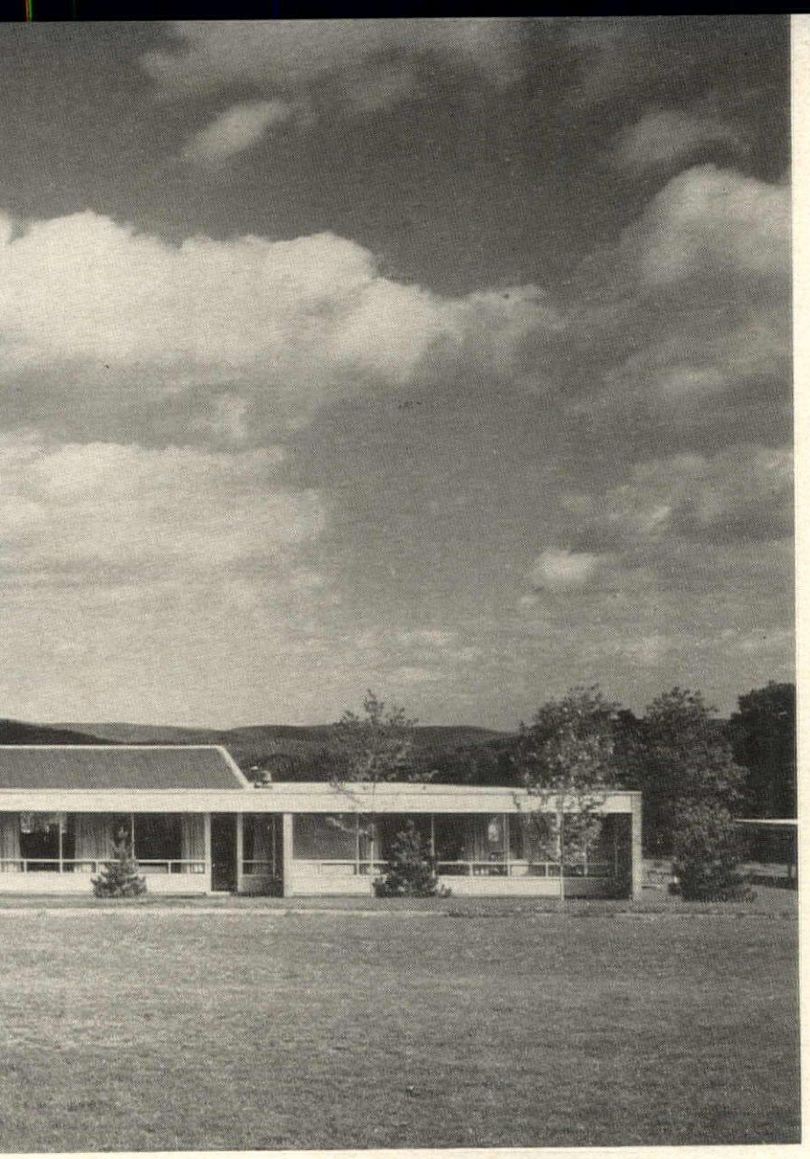
CONSTRUCTION: Slab on grade, asphalt tile (reinforced slab on concrete frame in gymnasium wing). ▲ Walls: concrete block faced with brick both sides (or chalkboard, tackboard, glazed tile, paneling). ▲ Under-window panels: 2′ x 6″ studs, ½″ rigid insulation board inside, ¾″ plywood outside. ▲ Roof: pipe columns supporting open-web joists, poured gypsum, 1″ insulation board, built-up roofing. ▲ Acoustical tile ceilings throughout. ▲ Heating: two low-pressure steam boilers, oil-fired; two-pipe vacuum system.

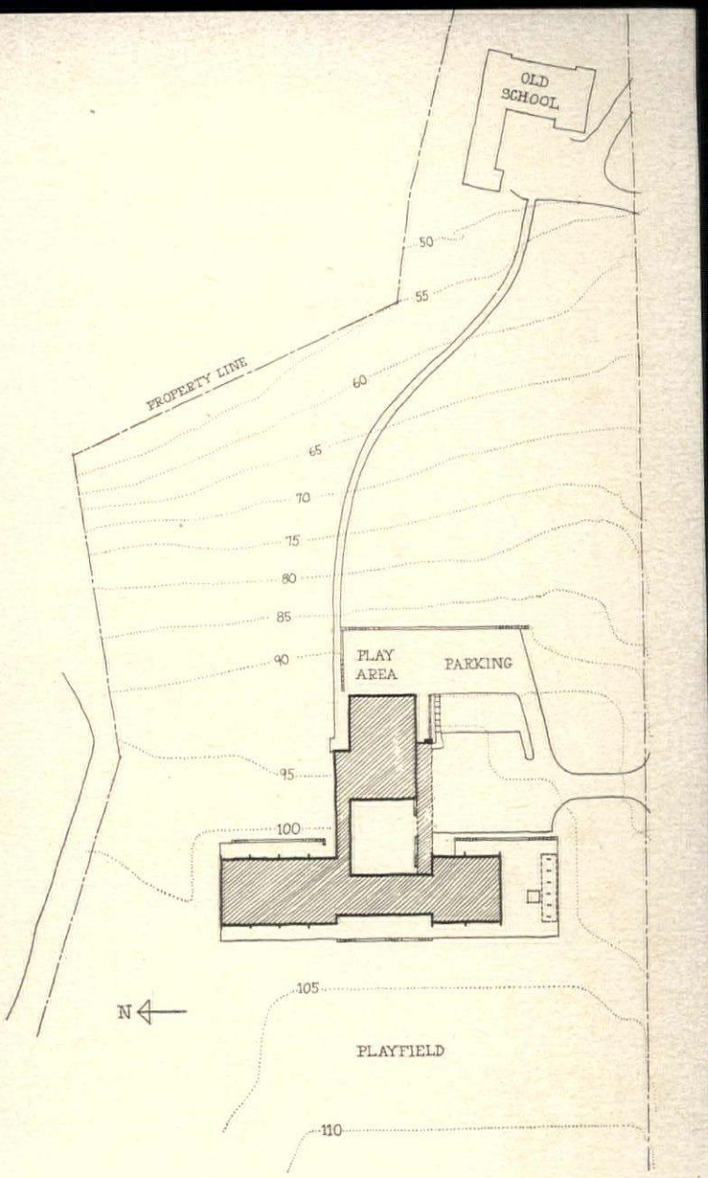
COST: $598,500 contract, plus equipment, land, landscaping, fees (see breakdown overleaf). ▲ Total building cost: per sq. ft., $17.40; per classroom, $49,800; per pupil, $1,660.

"When it is spring you can see the mountains glittering in the sunlight. . . . When it is fall you can see leaves fall as though they were a storm of leaves. It is fun to see these things."

When a Salisbury fourth-grader wrote this about her new school, she reflected the deep human need for the kind of design that goes beyond mere organization of shelter and equipment at low cost. It was a tribute to parents who started ten long years ago to get a school, particularly the parents who, in the end, would not settle for anything less than a good one (see p. 138). It was also a compliment to the architect, and the landscape architect, who succeeded in bringing out the best qualities of nature, color, light and space, all scaled and framed in ways to reach a child. Their design both welcomes Connecticut's soft and distant hills (above) and turns inward to create another kind of nature: a courtyard as important as the building itself to separation, circulation and the need for pleasant inner space (right).

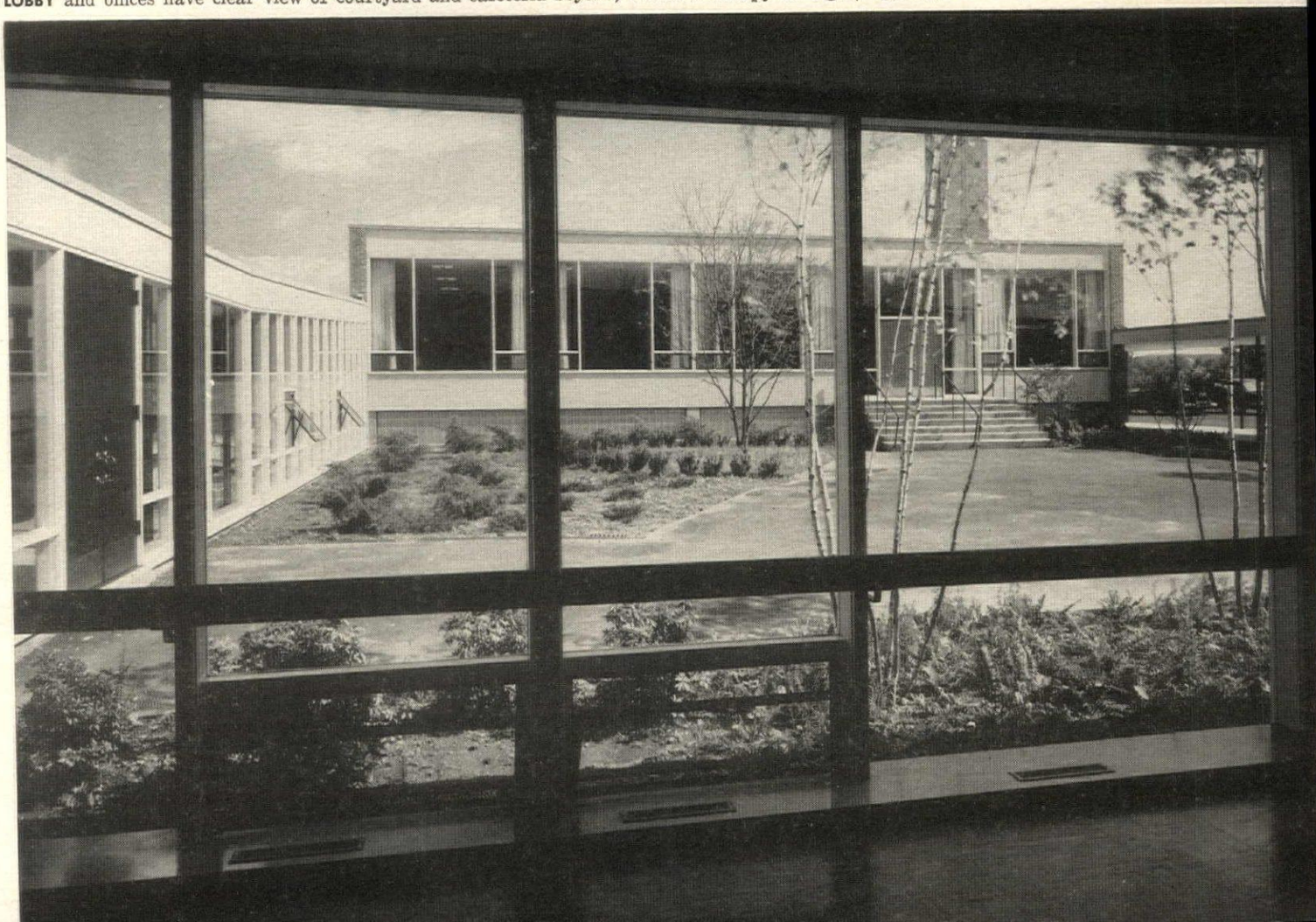
ARCHITECTS: Eliot Noyes & Associates; Perkins & Will
LANDSCAPE ARCHITECT: Dan Kiley
GENERAL CONTRACTOR: New England General Contracting Co.

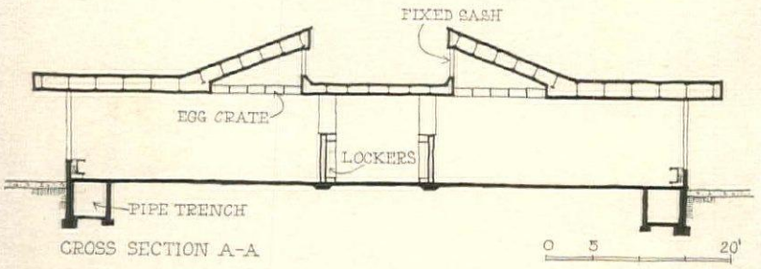




WEST FACADE (left to right) : grades 2-4, offices, first grade, kindergarten

LOBBY and offices have clear view of courtyard and cafeteria beyond, entrance canopy at right, upper-grade entry and ramp at left





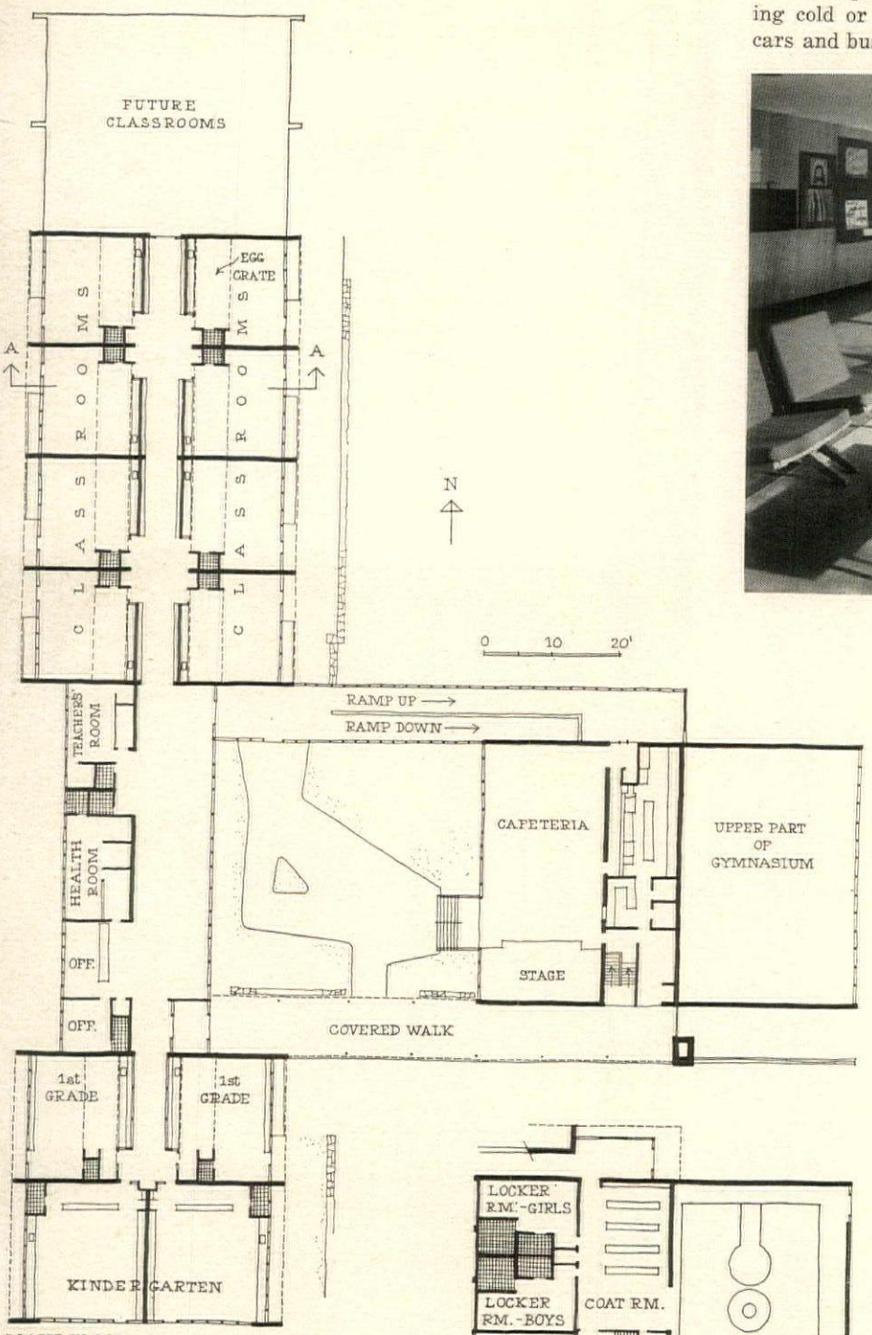
ROOF MONITORS give classrooms even, bilateral light. Large grids baffle direct sun and sky glare, conceal electric light fixtures. Glass above 5' height on corridor, too high to distract children, adds spaciousness and light to classrooms and corridor. Long work-counter cabinet, classroom toilet and teacher's closet simplify clean-up.



Photos: Ben Schnall

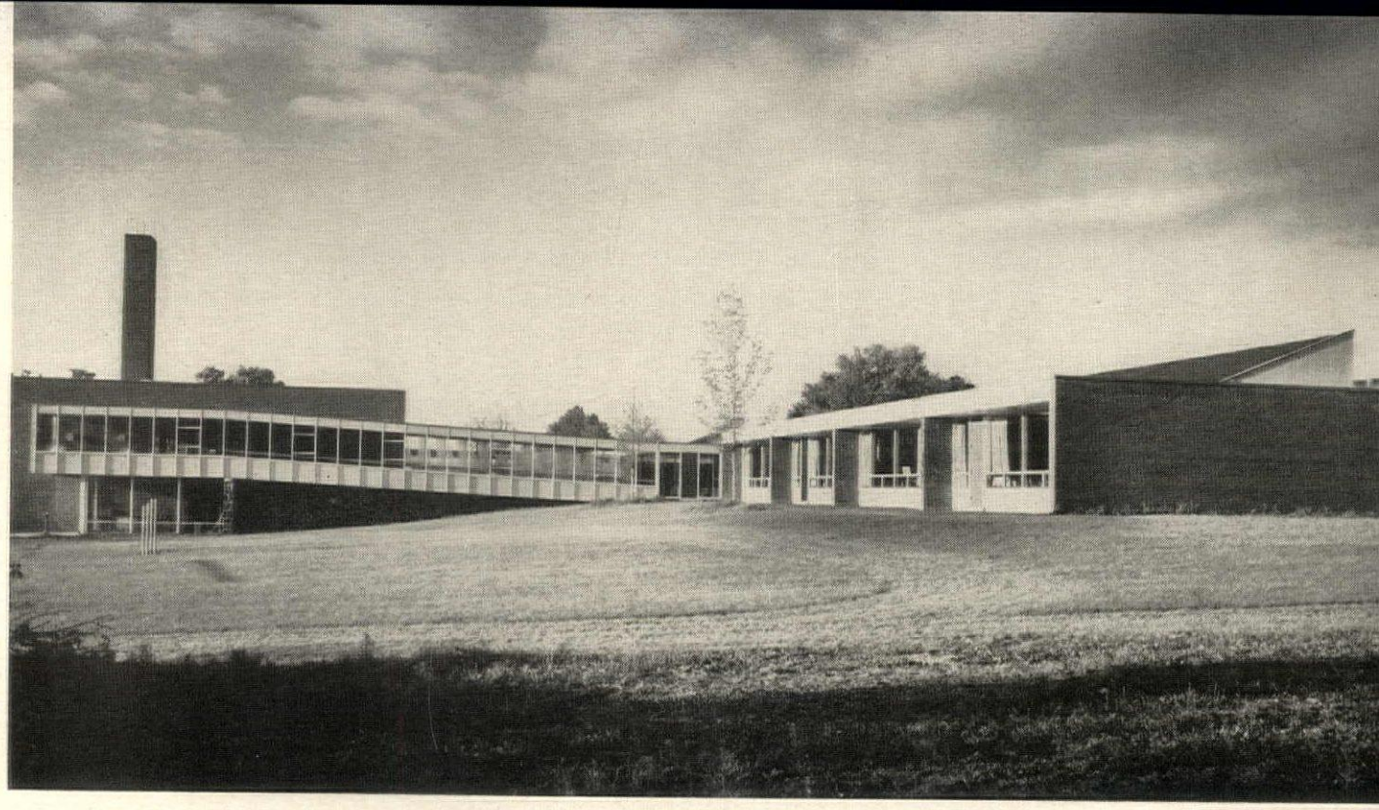
CENTRAL GALLERY (below), as seen from main door, serves as reception room for parents, space for student exhibits and square dancing. During cold or rainy weather, children may use it as a hall or wait for cars and busses in full view of turnaround (beyond court at right).



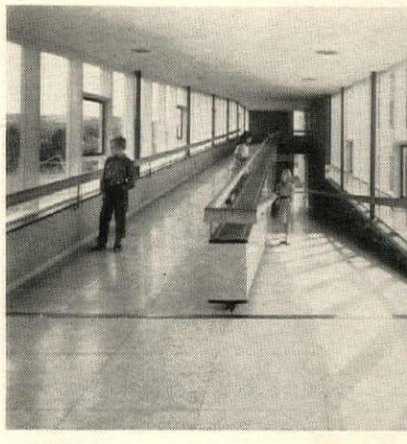


COST BREAKDOWN

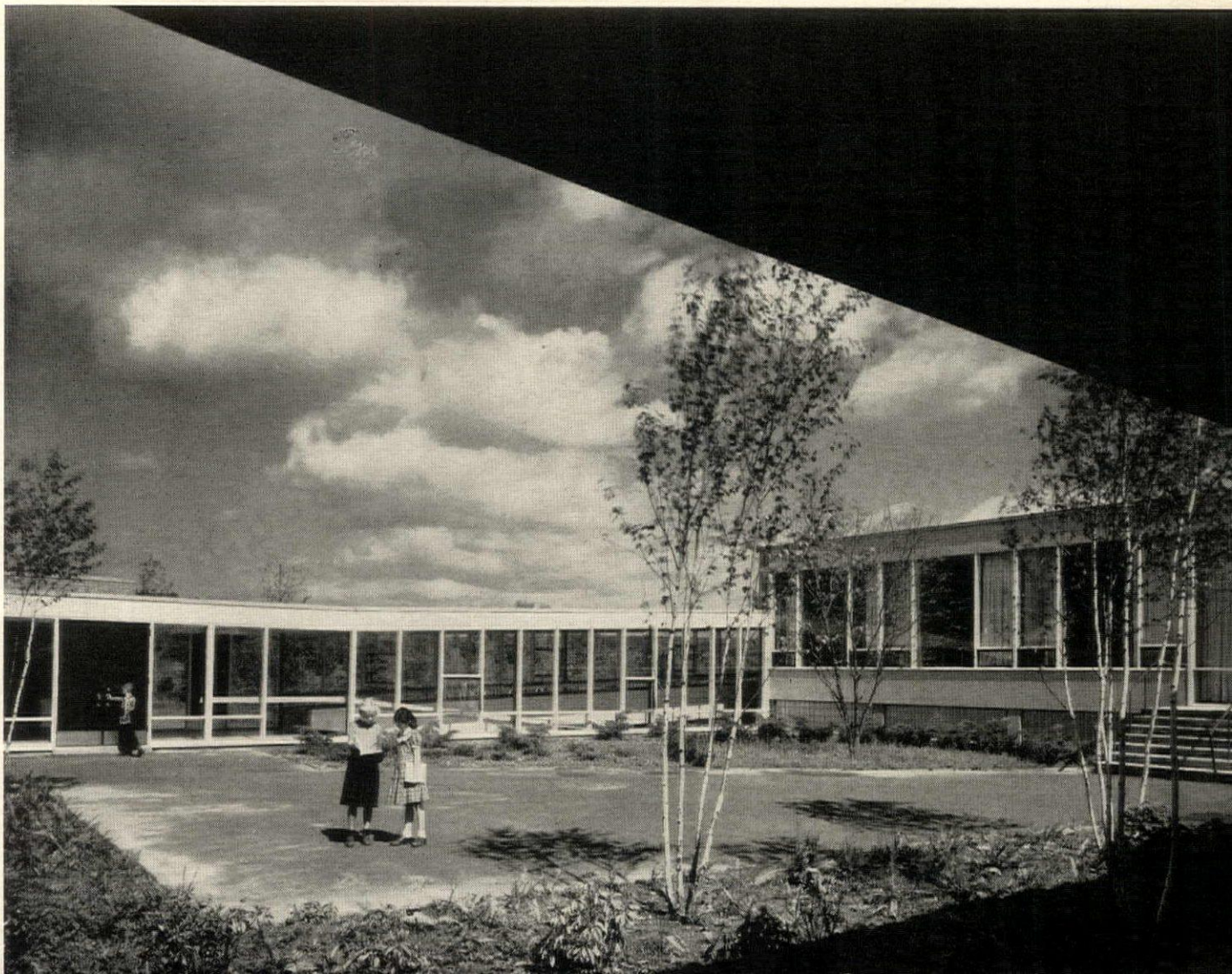
Bond	$ 5,985
Preliminary work, excavation	18,000
Concrete, reinforcing	83,700
Blocks and bricks	55,000
Lumber and framing	19,500
Acoustical	17,000
Asphalt tile, rubber, linoleum	6,000
Interior wall finishes	4,865
Electric	44,100
Glass, glazing, steel sash	11,700
Gypsum roof slab	19,000
Hardware and labor	11,000
Millwork and erection	69,000
Misc. metal erected	11,100
Painting	13,000
Roofing, sheet metal, waterproofing	19,500
Structural steel	34,500
Tile, marble, slate	13,000
Wood flooring	6,000
Plumbing, heating, ventilating	121,550
Miscellaneous	15,000
Contract	$598,500
Equipment (allowance)	50,000
Site development (allowance)	35,000
Architects' fee	35,910
New floor for old gym	2,000
Legal and misc. fees	6,000
Contingency fund	15,000
Total budget	$742,410
Total cost	$720,000



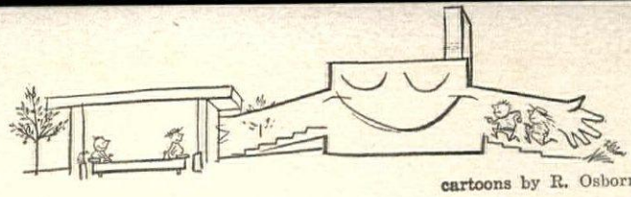
TWO-LEVEL RAMP (above and right) has terrazzo surface, provides safe, exciting way for children to move from classrooms to cafeteria-assembly hall above, gymnasium below. Heating convectors are concealed in casing that supports center handrail.



FLOWERING COURT is heart of everyday school life, used and seen from all rooms and walks except actual teaching areas. Paving follows natural circulation pattern between entrance canopy, cafeteria steps (right), entry (left). Doors are bright red, blue.



How Salisbury gots its friendly new school



cartoons by R. Osborn

his is the story of a small New England own that tried twice to build more school pace for its postwar wave of children. he first try foundered, for lack of com-unity participation and a good proposal. he second try succeeded: on good design, ood public relations and good hard work y a patient building committee:

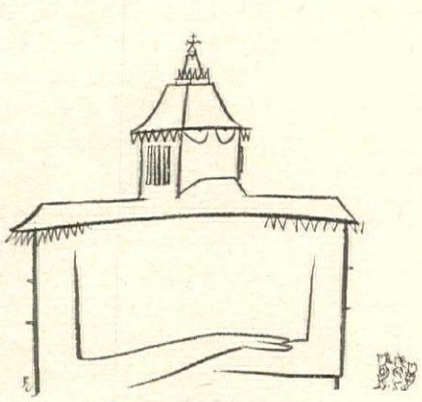


UILDING COMMITTEE (left to right): Irwin Patch-, builder; Elodie Osborn, parent; Douglas Griffiths, usinessman; Antoinette Fowle, parent; Chairman ndrew Arnott, businessman.

As far back as 1944 it was becoming bvious to some of Salisbury's citizens and o the State of Connecticut that there were ar too many children for the town's 1928 olonial schoolhouse, even with the new ving added in 1941. In 1946 a special town neeting agreed that some sort of new con-truction was needed. A building committee vas appointed, an architect selected, and he town went about its business.

Not much was heard from the committee ntil three years later, when preliminary rawings suddenly appeared in the local *ournal*. The proposal: a series of stiff-ooking additions to the existing building, vith the same small windows, the same vasted hall, stair and attic space, the same ostly trimmings—all forming two-story ourtyards that could send sounds echoing hrough the school besides presenting a real naintenance problem. Estimated cost: $750,-00. The committee asked for $35,000 for vorking drawings and specifications and vere turned down cold.

At this point it occurred to the *Journal*'s nanaging editor, Ann Hoskins, that a sur-



STERN OLD SCHOOL

vey of what other towns had got for their chool dollar might help, and a committee f ten women was formed to make a sur-vey. Gradually the committee lined up 21 chools of different styles built during the previous two years, 20 in Connecticut and one in nearby New York. Then they split into groups to visit the schools, interview superintendents, principals and local building committees. When the survey was completed in mid-December of 1949, the *Journal* carried a special four-page section: pictures, plans, a complete report on each school, an editorial by Mrs. Hoskins interpreting the findings, and a summary of what to look for in new elementary school design. The latter was written by a member of the survey committee who was to play a leading role in the school campaign: Elodie Osborn, wife of Cartoonist Robert Osborn and former associate at New York's Museum of Modern Art, where she had helped prepare an exhibit of modern US schools.

None of the other nine women had any previous experience with design or building, and most of them had started out openly prejudiced against "modern." But during the course of their trips they were impressed with the way the more advanced schools fitted up-to-date educational programs. They liked the treatment of each classroom as a complete, self-sufficient unit with its own lockers, sink, toilet, drinking fountain and outdoor entrance; the separation of older and younger children; the flexibility of classroom arrangements under bilateral lighting; the economy and convenience of one-story plans.

Their logical, point-by-point presentation struck home: at a special town meeting in Feb. '50, the monumental addition was defeated 234 to 106. The architect was paid for his time, the building committee dissolved with a vote of thanks and a new committee of five was appointed.

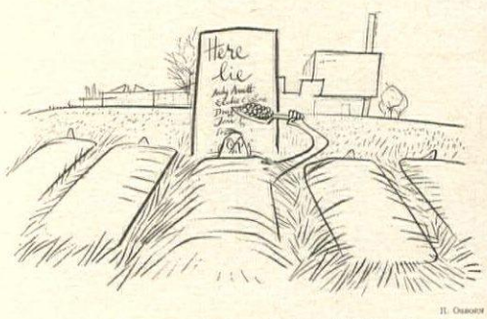
To get support for any proposal, first from the town and then from the state, the new committee knew it had to obtain broad community participation from the very start. This was something the old committee, to their later chagrin, had never done. At their first meeting the five decided to pick an advisory committee of ten to discuss the educational program, also arranged for the director of the State Building Commission and other state experts to talk to the town at open meetings. Meanwhile Wilmer Shultz, district supervisor of education, suggested enlarging the advisory group to 50, including representatives of all interests whose ultimate cooperation would be needed: school board, teachers, selectmen, businessmen and community members known to be in various degrees of opposition to a new school. At first the building committee thought this would slow things down and make the town impatient for action, but finally agreed. The 50 were split into smaller groups so that people would speak freely, and each group was given a discussion leader and secretary. When the smaller groups reported back in detail after several meetings, the full committee was able to piece together a realistic, all-inclusive picture of what Salisbury wanted, which was published in the *Journal*.

To check its decisions, the committee invited State Architect Richard Howland to visit the old school site. Howland recommended putting as little money as possible into the old school in the hope that it could eventually be abandoned, also emphasized the flexibility, economy and safety of a separate one-story plant. Other meetings, trips and consultations with state experts consumed four months of study and an average of two evenings a week for the building committee. Information on almost every one of these and subsequent moves, no matter how small, was given to the newspaper.

During June of 1951 five leading architectural firms were interviewed and the Noyes-Perkins combination chosen. When the new architects came to Salisbury to talk before the committee of 50, they found the program already worked out would save some four months of conferences between parents, teachers and the many other parties involved. Before long another town meeting authorized preliminary plans and estimates, which Noyes was able to present for budgeting in January. Then came six agonizingly slow months for the building committee: producing working drawings and getting them approved by all concerned.

The turning point of the battle came that fall. The critical town meeting had been well advertised in the paper and in handbills in which Bob Osborn cartoons suggested that townspeople could pay the added taxes by simply giving up a couple of cartons of cigarettes or a few bottles of Bourbon for their children. Before a town hall packed to overflowing, the committee, the architects and the finance board presented the issues: 1) a new $680,000 school, 2) a new $65,000 attached gymnasium, with state aid estimated at $200,000. A detailed scale model was prominently displayed in the lobby to show everyone exactly what the new school would look like. The remaining opposition made a few last lunges, grumbling that someone should look into some other kind of economy makeshift. Whereupon a minister arose and, in a clear, quiet voice, said he would not like to live in a town that was so mean to its children. That did it: a week later the town voted three to one for the new school.

By July of 1952 final drawings had gone through Hartford with minor changes, and bids were solicited. The committee accepted the lowest of ten bids ranging from $575,-000 to $749,000 and work started in September. They hovered over the job through a mild winter and a muddy spring, urging speed and suggesting economies that brought in the cost $20,000 under budget.



BUILDING COMMITTEE FINISHED



Ulric Meisel

THREE SCHOOLS . . . THREE APPROACHES

2. PERISCOPE CLASSROOMS

Novel design lets a compact plan enjoy light, breeze and outdoor space on a limited site

SENIOR HIGH SCHOOL, Guymon, Okla. ▲ 14 classrooms; 275 pupils.

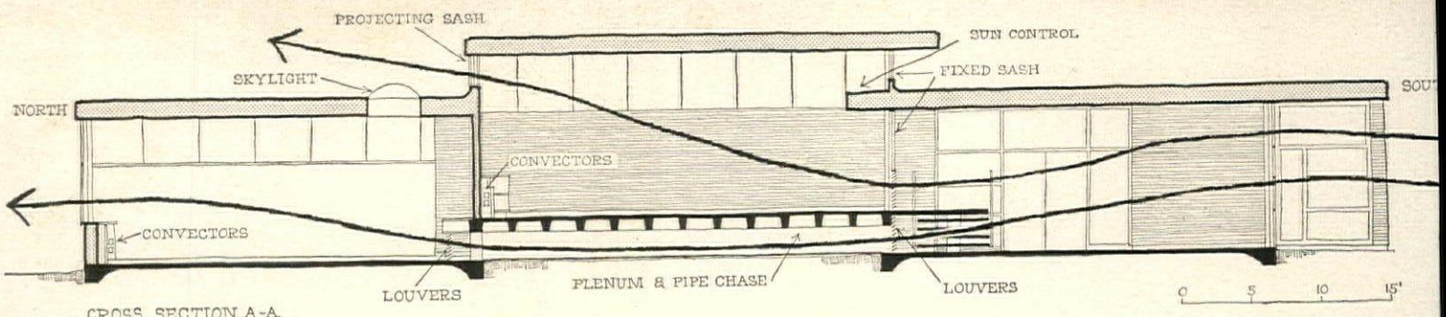
FEATURES: Compact L-shaped plan, leaving outdoor space on small lot. Wide social corridor facing landscaped court and prevailing breeze. ▲ Raised interior classrooms permit breeze to pass under, cooling leeward classrooms. ▲ Finger halls off social corridor serve leeward classrooms.

CONSTRUCTION: Slab on drilled bell-bottom and dug footings. ▲ Face-brick cavity walls, wood-frame partitions with sound insulation. ▲ Wood-frame roof over classroom section; acoustical ceiling hung from large steel trusses in auditorium. ▲ Steel architectural projected sash. ▲ Asphalt tile floors. ▲ Low-pressure hot-water heating (auditorium has evaporative forced-air cooling).

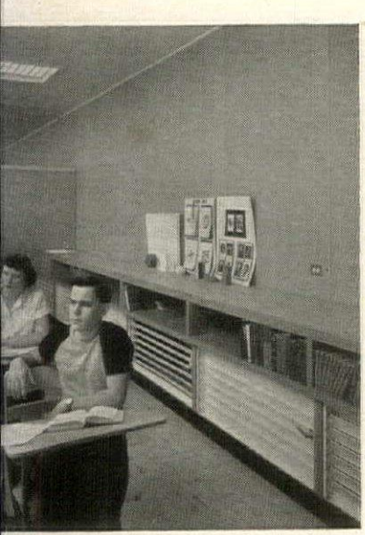
COST: $426,649, excluding land, landscaping, fees (see cost breakdown, next page). ▲ Overall cost per sq. ft.: $11.70; per student: $1,550 (including large auditorium for town use).

Never before have two rows of classrooms been put on the same side of a single corridor, with the inner row pulled up to let in light at the top and breeze underneath. But Architect Bill Caudill had good reason to do so: he had to fit a 14-classroom high school on a 250′ x 300′ site, too small for an open finger plan. And most important, he wanted to make his classroom corridor wide and light enough to serve as a pleasant gathering place for students, who spend as much time in the halls as they do in any one classroom or laboratory. By placing both rows of classrooms on the north side he was able to open up the full length of his double-loaded corridor to a breezy terrace on the south. The resulting classroom wing is so compact that Caudill could add a large auditorium needed by the town and still have enough land left to make the outdoor space really adequate (see photo above). When the landscaping is in, this terrace will become a natural extension of the indoor social hall and a spacious, friendly introduction to the whole school.

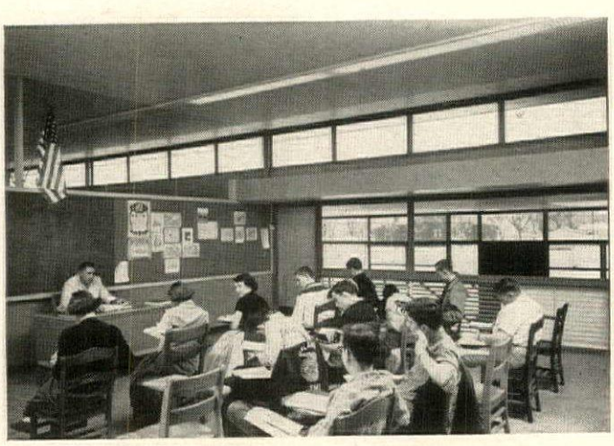
ARCHITECTS & ENGINEERS: Caudill, Rowlett, Scott & Associates
ACOUSTICAL CONSULTANT: Wayne Rudmose
LIGHT-VENTILATION CONSULTANTS: Texas Engineering Experiment Station
CONTRACTOR: Hoke Construction Co.



CROSS SECTION A-A



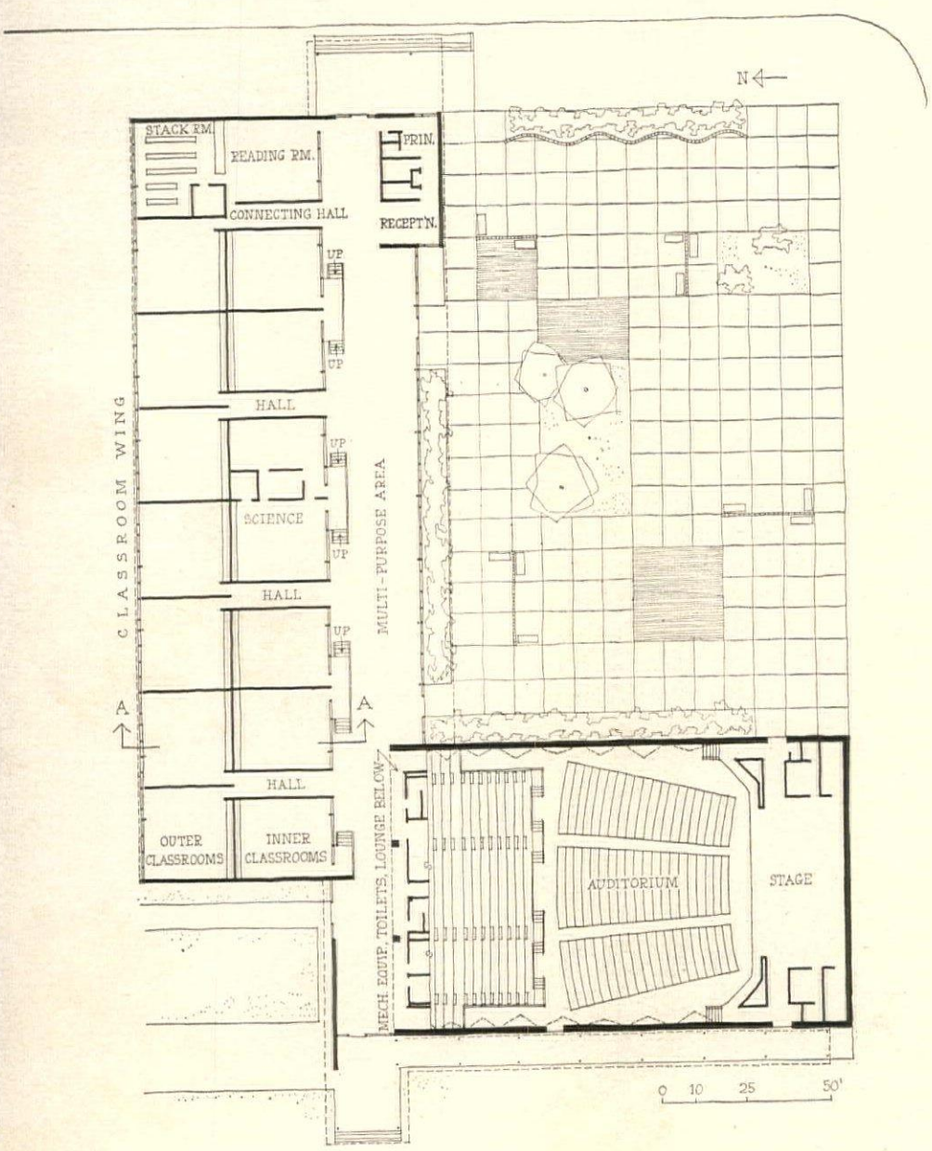
OUTER CLASSROOM



INNER CLASSROOM



CONNECTING HALL



CLASSROOMS are placed back to back on one side of economical double-loaded corridor. Breeze enters this corridor from the south (opposite page), enters interior classrooms through upper set of adjustable metal louvers (above) and flows out through clerestory projecting sash. Breeze also enters plenum through lower set of louvers, passes under interior classrooms and ventilates outer classrooms on leeward side.

COST BREAKDOWN

Bond and insurance	$ 7,568
Site preparation	10,789
Concrete	36,349
Masonry and labor	71,103
Roofing, sheet metal, waterproofing	16,843
Structural steel, misc. metal, steel sash	57,529
Carpentry and labor, millwork, chalkboards, corkboards, misc.	71,676
Lath and plaster	6,821
Roof deck	6,042
Glass and glazing	7,286
Acoustical tile	2,868
Asphalt tile, linoleum	5,979
Painting and finishing	7,909
Finish hardware	2,562
Science lab. equipment	1,537
Electrical	34,392
Plumbing and heating	75,155
Change orders	4,241
Total	$426,649



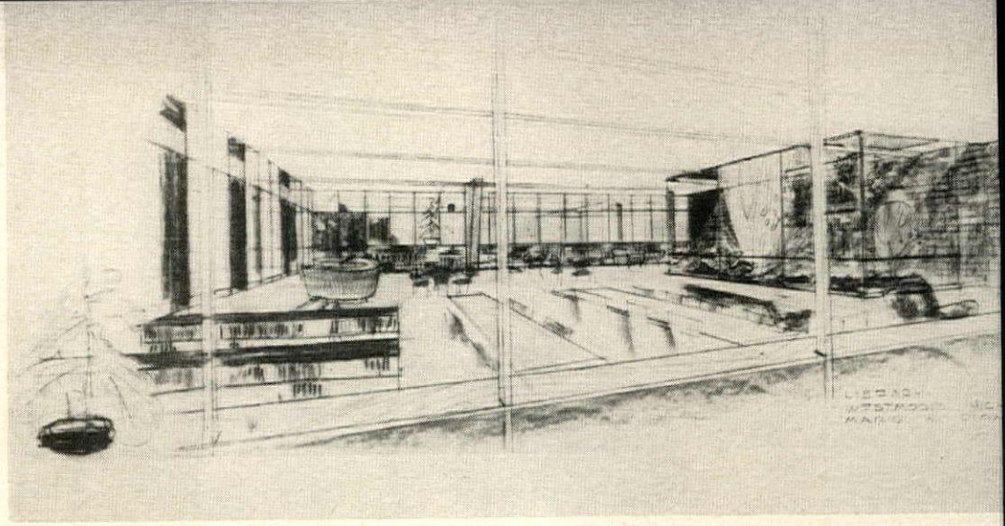


MULTIPURPOSE HALL (left and above) is for between-class relaxation, exhibits, activities. Freestanding storage units (not shown) serve as lockers for clothing and books, can be moved out of the way when desired. Says Superintendent George Spenner: "The large hall provides a meeting place for all students as they pass from one room to another. It gives them the feeling of being together many times a day, the feeling of belonging to a student body."

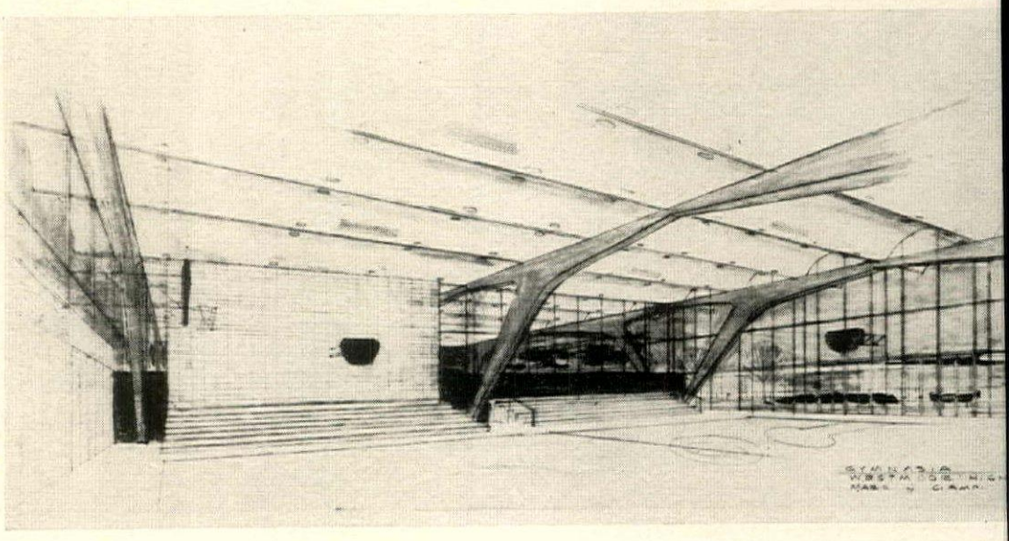
Photos: Ulric Meisel



AUDITORIUM has 1,100 seats, a sloping "stadium" balcony that does not separate the audience sharply in half. Acoustical "pyramids" of varying sizes and depths were introduced to break up reverberations between parallel walls, conceal indirect background lighting. Roof and hung acoustical ceiling is carried on 84′ steel trusses.



READING ROOM, at center of classroom block, has glass walls facing corridors, planted area open to sky at right. Twice as deep as standard 30′ classroom, room is roofed with low-rise arch of thin-shell concrete poured in place.



GYMNASIA open toward landscaped central court at right, have clerestory light from left. Precast barrel vaults 3½″ thick rest on three hinged arches of precast concrete spanning 90′. Estimated cost is less than half standard slab-and-beam construction with poured arches.

THREE SCHOOLS . . . THREE APPROACHES

3. WINDOWLESS CLASSROOMS

Big loft plan aims at new efficiencies in climate control and audiovisual education

WESTMOOR HIGH SCHOOL, Daly City, Calif. ▲ 50 classrooms. ▲ 1,500 to 1,750 students.

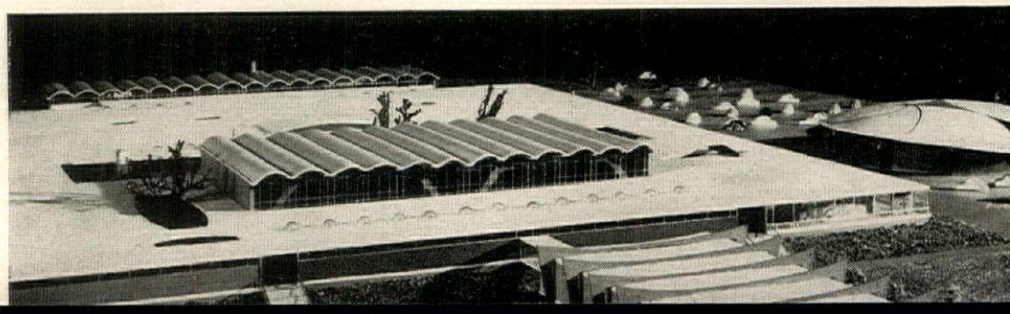
FEATURES: Compact plan with minimum outside area, double-loaded corridors (saved two acres over conventional spread-out school). ▲ Classrooms back to back on utility walls with forced-air units for heat and ventilation. ▲ Removable partitions for flexibility of curriculum. ▲ Glass walls facing corridors, with opaque panels at eye level. ▲ No architectural devices needed to control natural light and breeze; classrooms easily darkened for visual education.

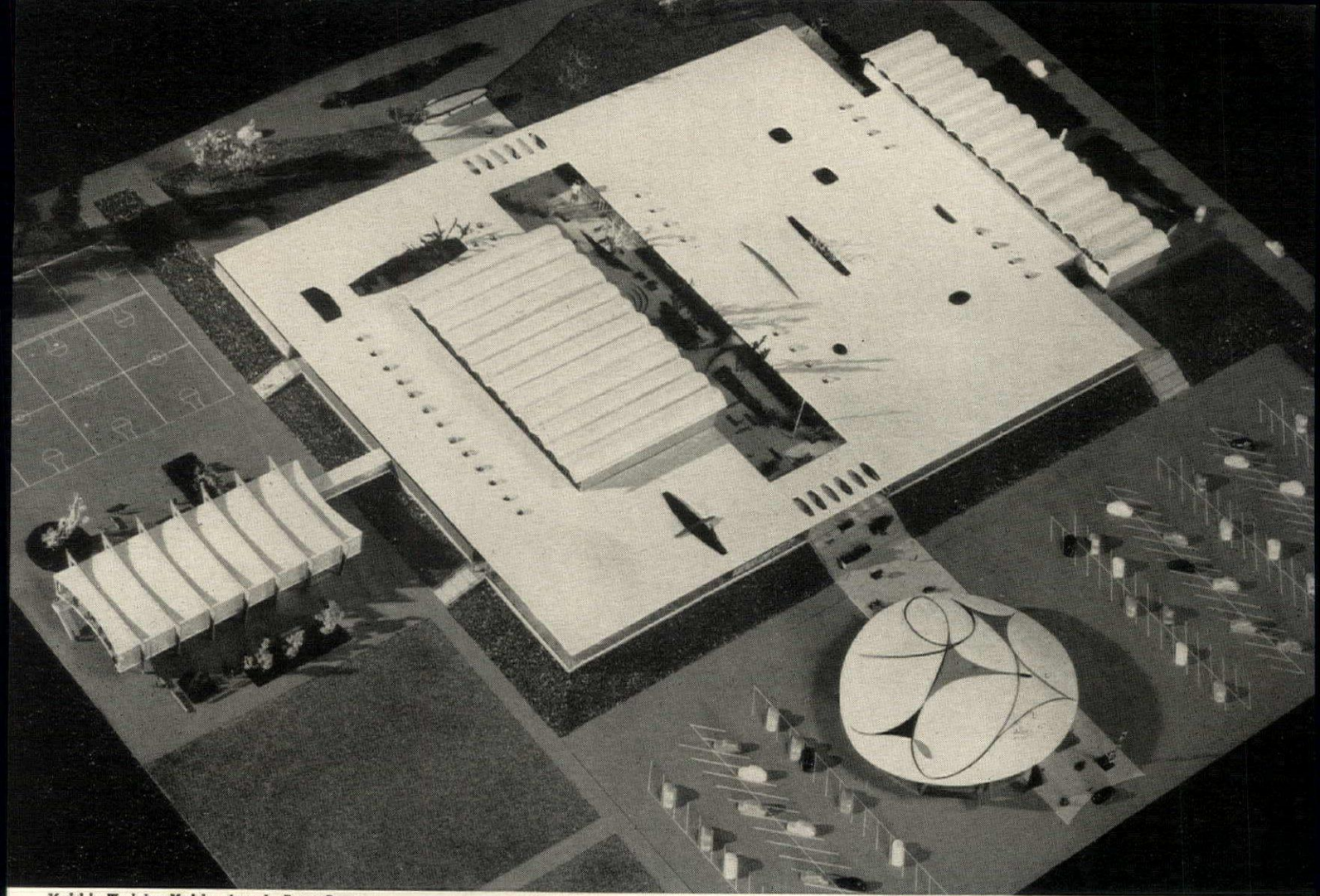
CONSTRUCTION: Slab on concrete friction piers (sandy soil). ▲ Slab roof poured in place (estimated cost: $1.85 per sq. ft. of roof, cheaper than lift-slab estimates). ▲ Exterior walls: concrete block, high strip of aluminum sash. ▲ Partitions: metal lath and plaster, mineral-wool sound insulation; corridor partitions of steel sash and glass. ▲ Gymnasia and shop building roofed with precast barrel vaults. ▲ Precast struts help structural walls take earthquake forces from roof to ground.

COST ESTIMATE: First stage (1,000 students): $1,901,715. ▲ Second stage (500 students): $520,861. ▲ Sitework: $344,543. Total: $2,767,-119, including architect's fee, excluding land, landscaping, furnishings. ▲ Cost per square foot: classrooms, $12.72; gymnasia, $14.10; shops, $14.35; cafeteria, $15.20; over-all average, $14. ▲ Cost per classroom (with dependent facilities): $48,000. ▲ Over-all cost per student: $1,600.

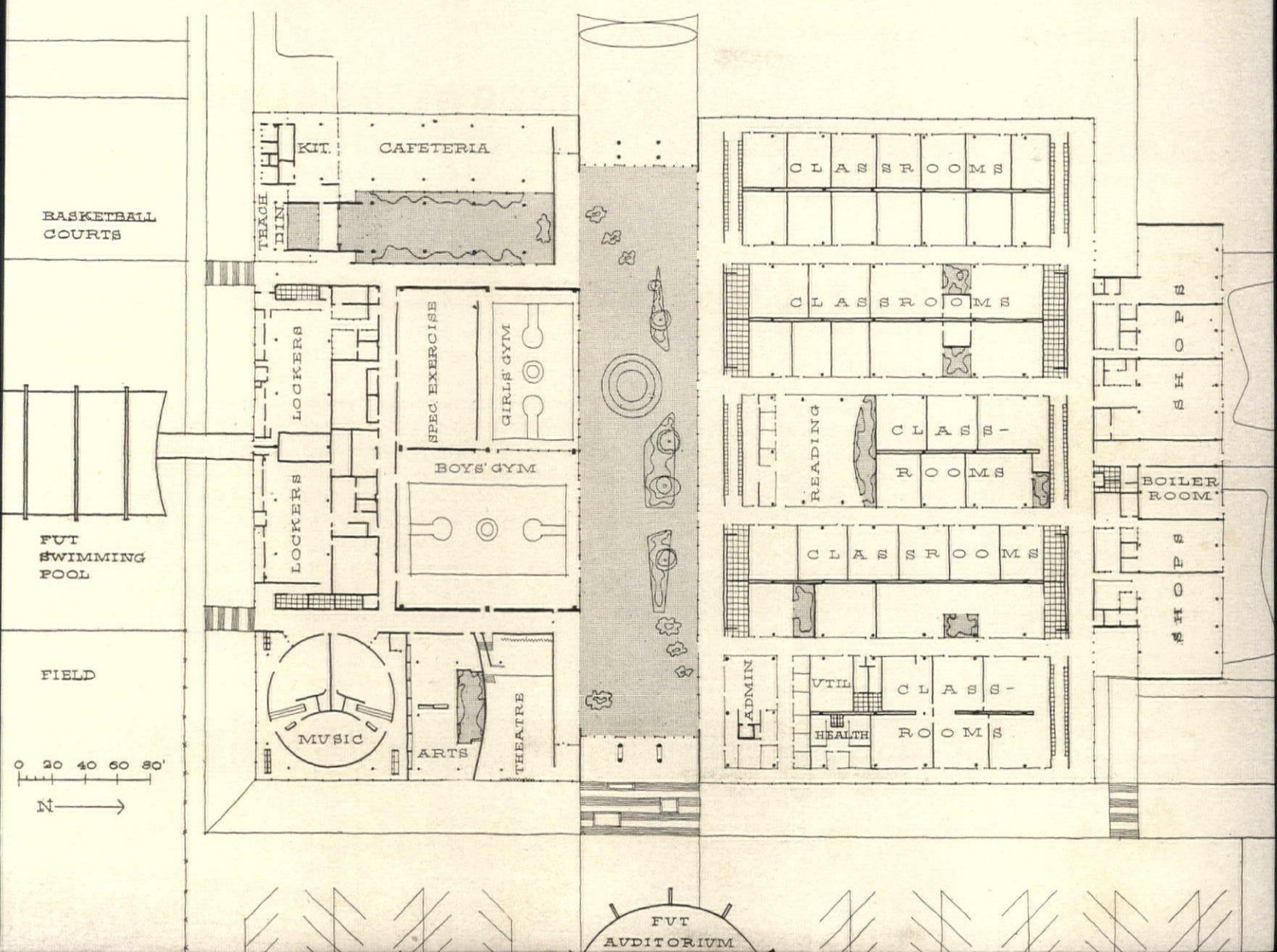
The loft plan for schools, which was brilliantly drawn by Matthew Nowicki for the so-called FORUM "School for the 1950s," has been brilliantly expanded since then, with its economical standard bays, minimum land coverage and outside area, short communication lines. John Lyon Reid made a big checkerboard out of it, in which a great many skylighted rooms face the interior (Hillsdale, Calif. school, AF, Oct. '53). It was to be hoped that somebody would pick up this checkerboard and convert many more indoor squares into open, planted courts. Now Mario Ciampi does introduce a few but not many. He makes classrooms into small interior theaters tailored to California's increasing use of slides, films and television and protected against San Francisco's windy, foggy winters. Ciampi notes that lights are on 85% of the time anyway in some of the area's best bilaterally lighted schools. With minimum exterior surface, few openings and day-long electric light, his engineers figure that heating requirements will be 45% less, more than paying the higher electricity bills. But, alas, the views have gone out with the windows.

ARCHITECT: Mario Ciampi
LANDSCAPE ARCHITECT: Lawrence Halprin
CONSULTANTS: James McConnell and staff, School of Education, Stanford University





Model by Workshop Models; photos by Ernest Braun

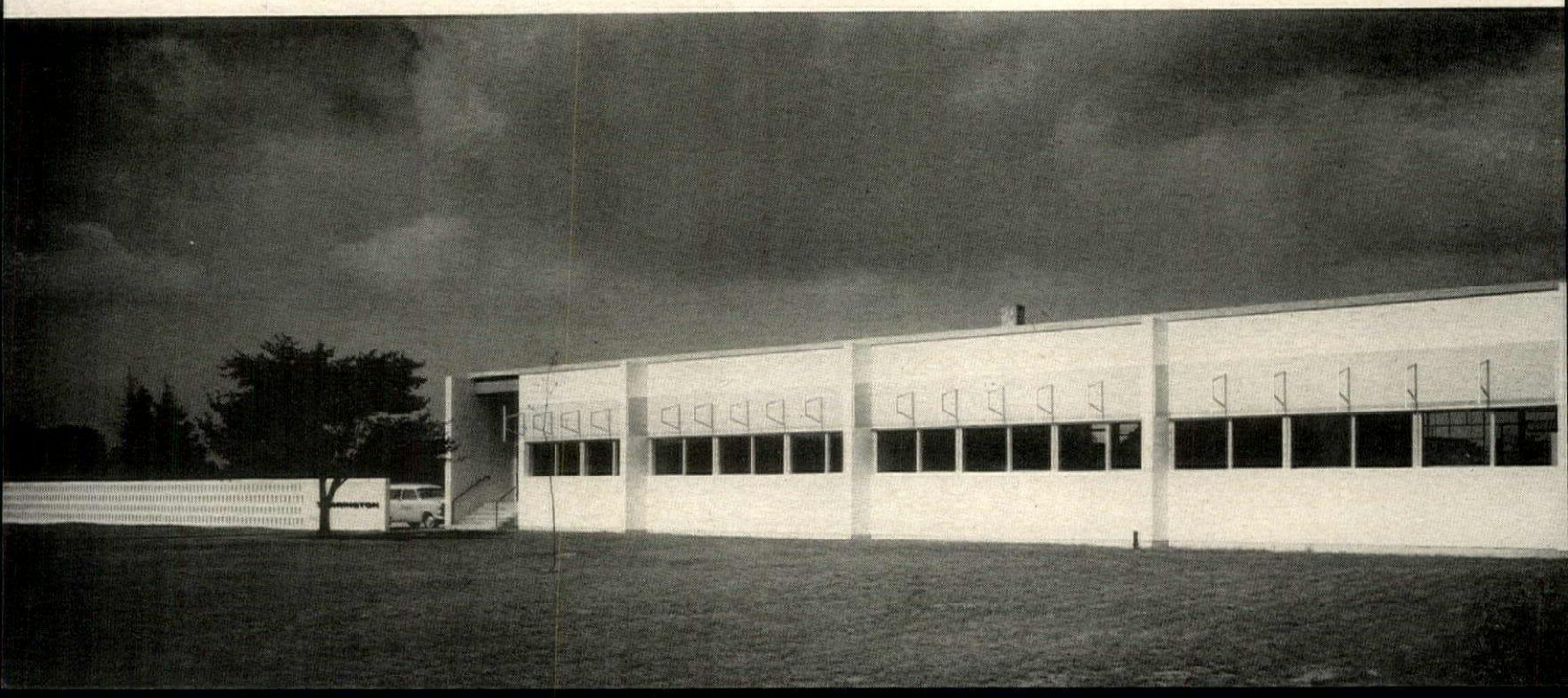




MAIN ENTRY in white façade is marked by earth-red beam across top and rich blue side walls. Door is black

FACTORY BY MARCEL BREUER IS BRIGHT

FACADE is broken by five slim piers which project out to line of glass sun filters





Photos: Ben Schnall



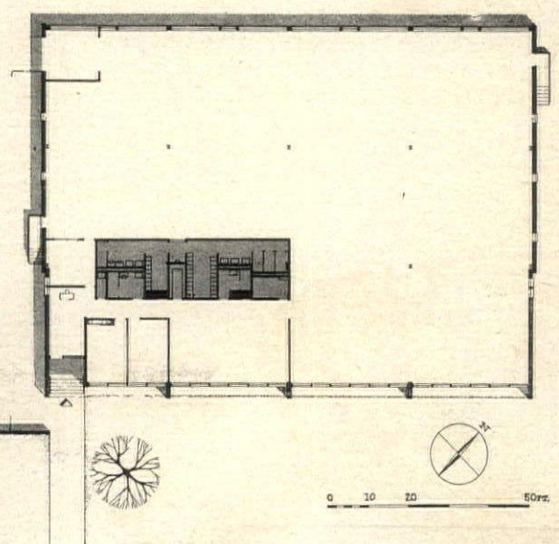
VESTIBULE is lighted by glass wall precisely framed in wood

AND HANDSOME—ALL AROUND

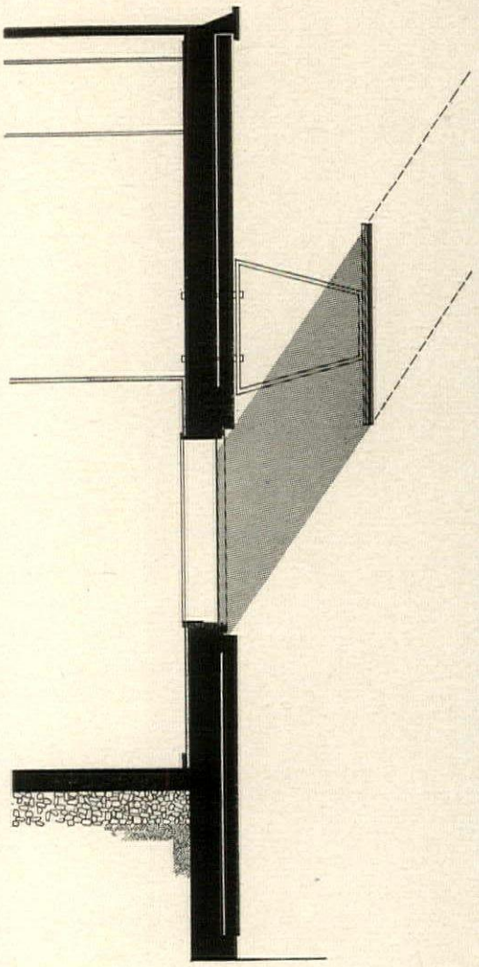
OWNER: Torrington Manufacturing Co. of Canada, Ltd.
LOCATION: Oakville, Ontario
ARCHITECTS: Marcel Breuer and
Commercial Leaseholds, Ltd.
GENERAL CONTRACTOR: Commercial Leaseholds, Ltd.
SIGN DESIGNER: Lester Beall

Most small factories are prettied up only in front in the mistaken notion that no one sees their ugly sides. As a result of this false economy, industry's public relations and the roadside's appearance both suffer.

But here is a happy exception—a credit to the owner, the architects and the landscape. Five features set this factory apart and commend its concept to others: 1) The front is a studied composition of white concrete brick, blue glass, gray roof line and green apple tree. 2) Only 120′ long, its apparent size is extended by a perforated wall screening the parking lot and carrying a precisely lettered sign. 3) A filter of tinted glass adds a note of efficient decoration to the façade (left and p. 146). 4) The stark white beauty of the front is set off by the building's gray-painted sides, also of concrete brick. 5) The big window wall at the back is subdivided in a pleasantly different mullion pattern (p. 147). Despite these design assets and relatively small size, the building cost less than $9 per sq. ft.



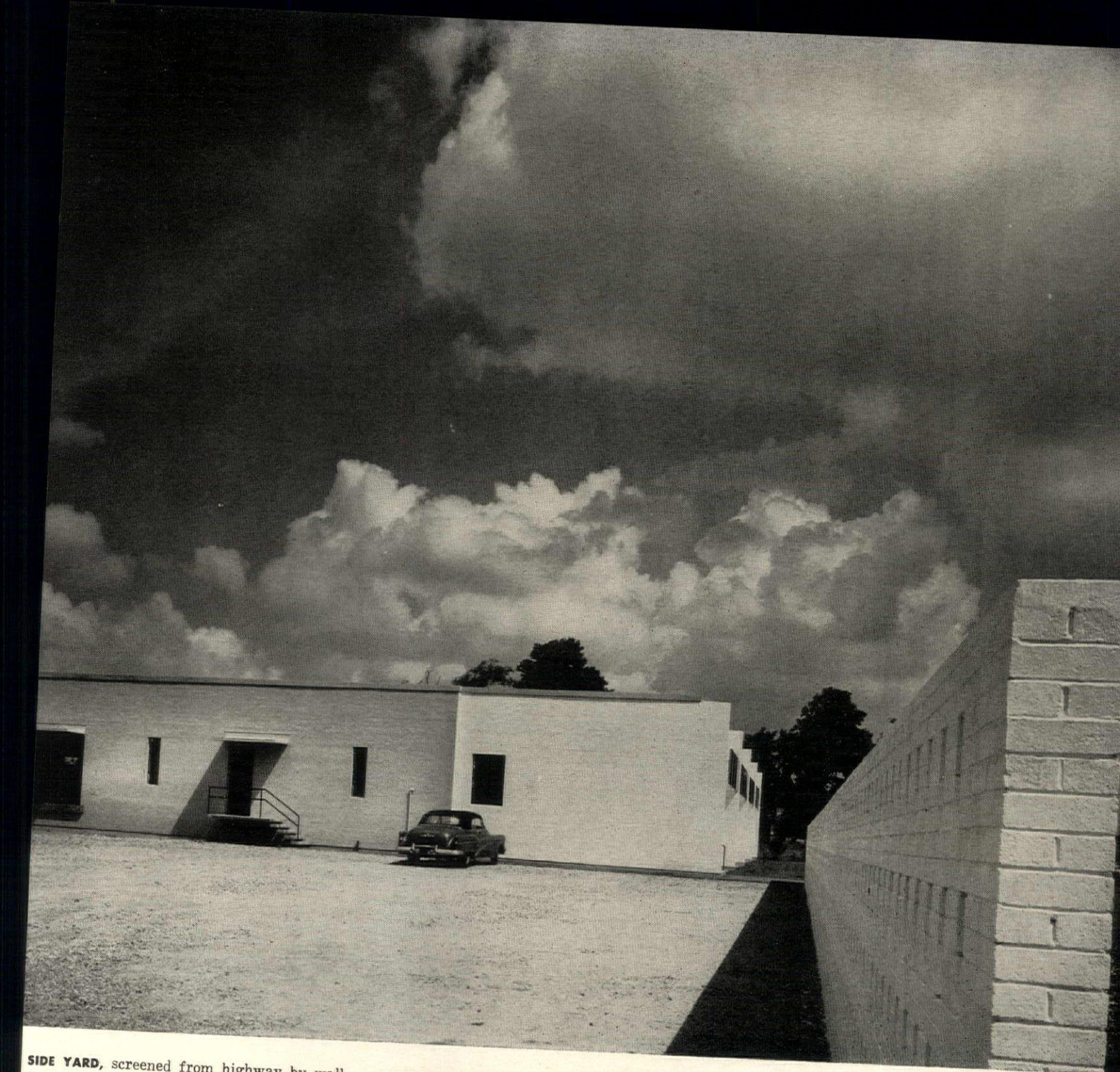




SUN FILTERS of light blue tinted glass stop 60% of sun's radiant heat from entering air-conditioned offices. (Set into window sash, same glass would get hot and be only 27% effective.) Glass is 24-oz. plate, heat treated against breaking. Projection of filter outward and upward minimizes distortion of color and interference with view. Venetian blinds control light and glare. Breuer designed similar outboard sun-heat filters for the seven-story UNESCO building in Paris.

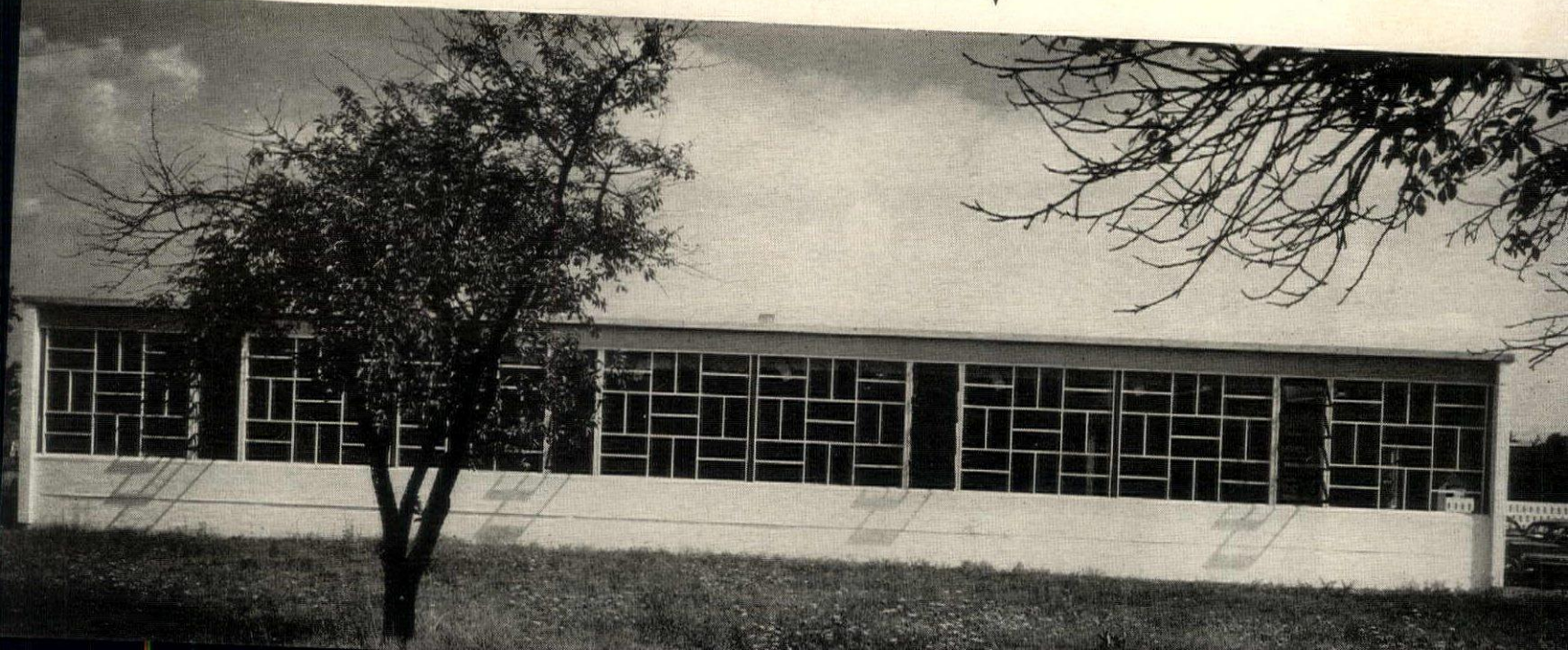
INSIDE, strip lights and north window wall distribute even light over work area. One of Canada's most progressive small firms, it is a subsidiary of Torrington Manufacturing Co., Torrington, Conn., world's largest maker of fan blades and blower wheels.

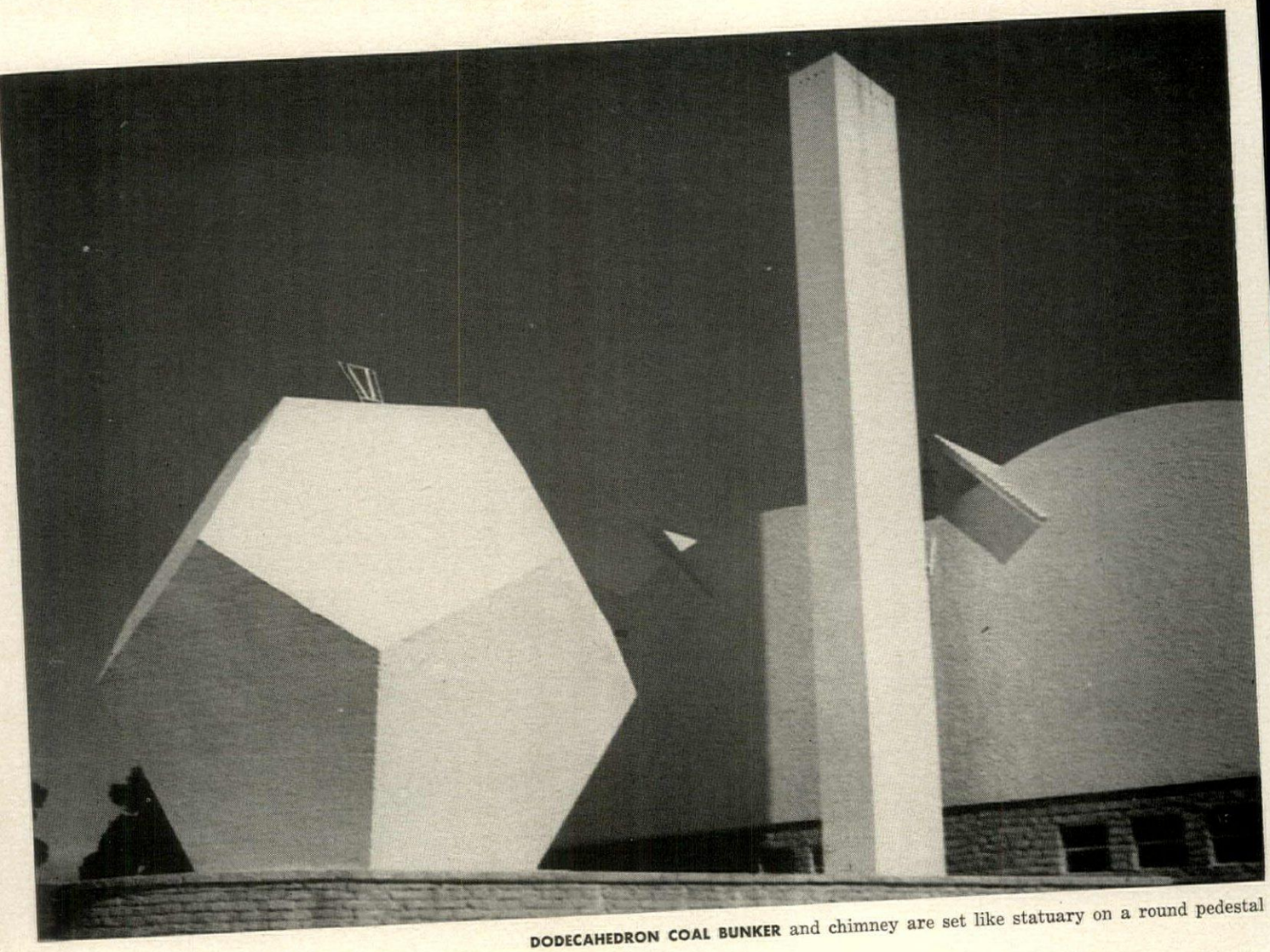




SIDE YARD, screened from highway by wall, is parking lot and loading area. Side walls are gray-painted concrete brick; roof trim is darker gray. Viewed from highway in front and railroad at rear (below) handsome design is good advertising.

REAR ELEVATION is a lively pattern of wooden mullions and clear glass. Dark vertical strips are banks of awning-type sash. Because entire wall is glass, expansion of plant to rear will be easy. Office facilities can expand to side opposite parking.





DODECAHEDRON COAL BUNKER and chimney are set like statuary on a round pedestal

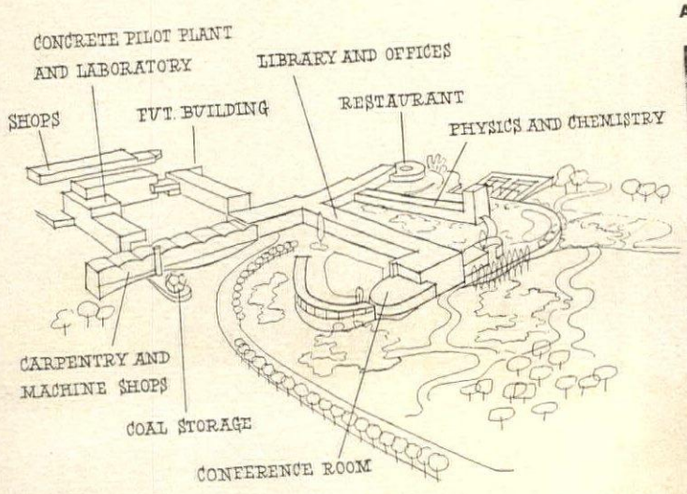
BUILDING ABROAD:

TORROJA'S SCULPTURAL CONCRETE

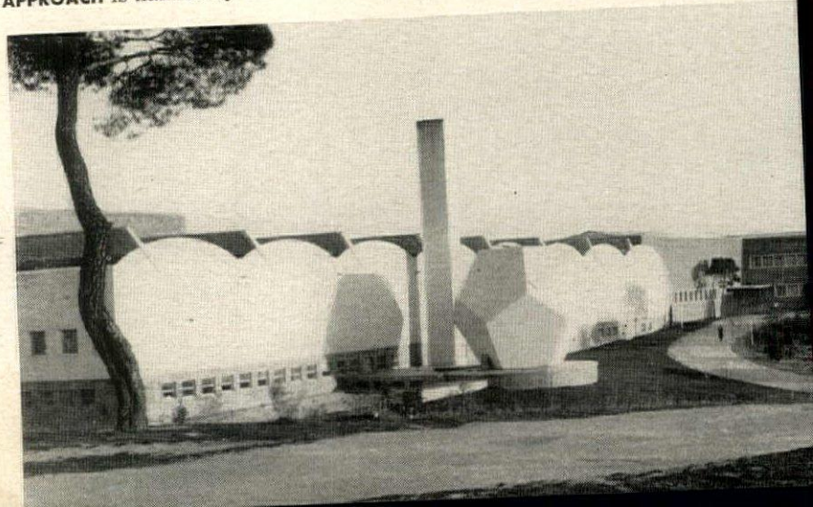
Architect Frank Lloyd Wright has said that Spain's great engineer, Eduardo Torroja, expresses "the principles of organic construction better than any engineer I know."

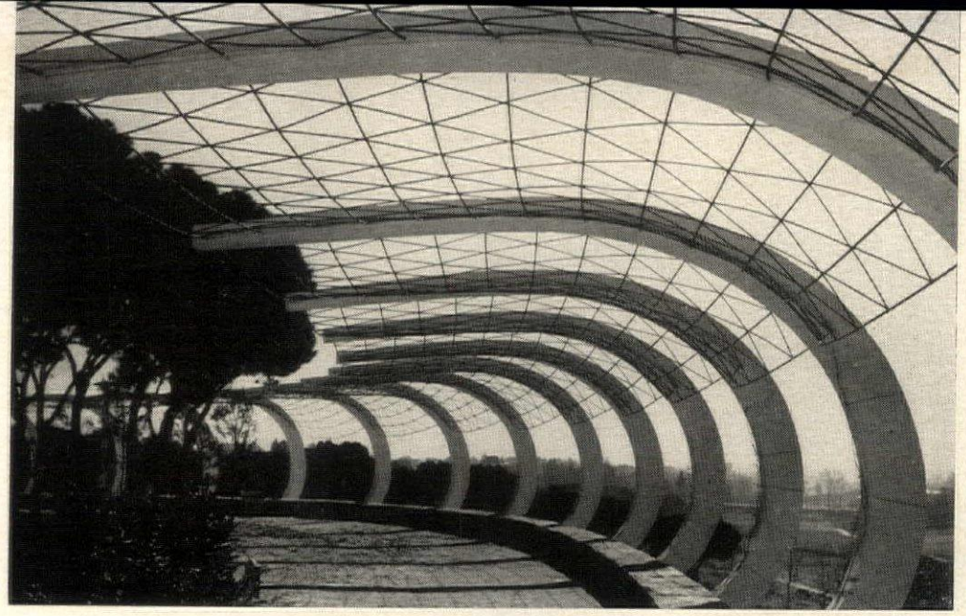
Architect Richard J. Neutra has said that Torroja's new structures for the Technical Institute of Cement Construction near Madrid express "the progressive and bold spirit of the leadership which this great engineer of cosmopolitan standing gives to the building construction industry of Spain."

Both opinions are confirmed by the pictures of the Institute on these pages. However, the pictures also suggest that the Institute is less notable for its architectural composition and the relationship of its many parts than it is for the daring and often beautiful design of the parts themselves. They are indeed tributes to the talents of Engineer Torroja, director of the Institute, and his collaborators. The towers, the cantilevered canopies and the pergola frames (on these pages), and the circular restaurant (overleaf) are also exciting demonstrations of the flexibility of concrete which may awaken other engineers and architects to the fact that concrete does not always have to be poured into a box. Torroja molds his concrete like a sculptor and more often than not produces a structure that is daring and exciting to look at and one that is a real work of art.



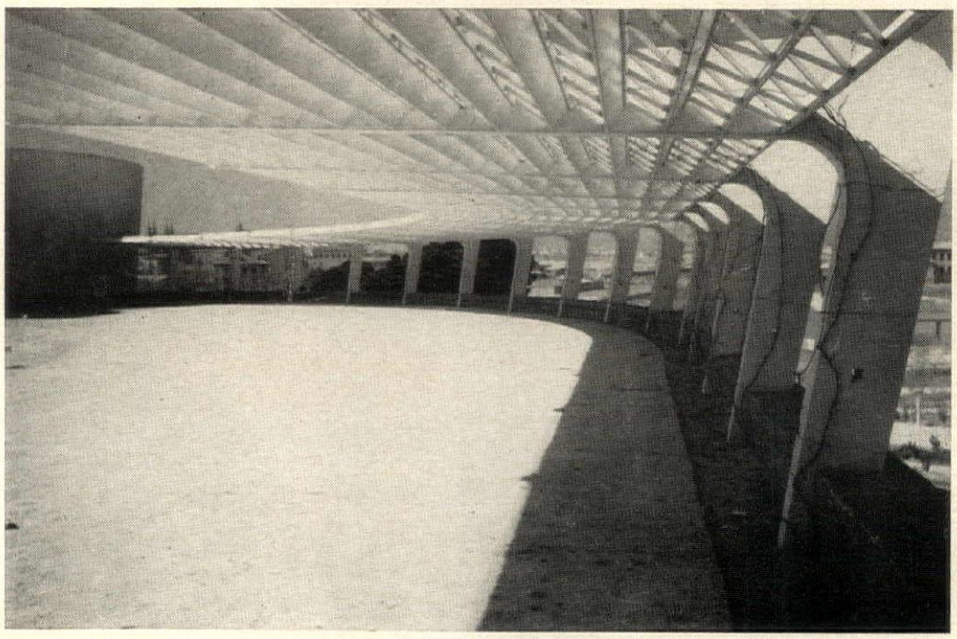
APPROACH is flanked by labs on left and parking-lot pergola and office wing

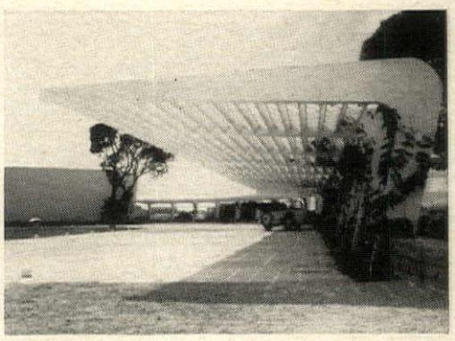






CURVED PERGOLA FRAMES over a pedestrian walk between two of the office wings (along with angular frames below) give the project its nickname: "Costillares," or structural ribs. Anchored in a granite retaining wall, the ribs are laced with wire mesh which in time will support sunshading vines. Hung loosely, the wires' catenary curves are subtle but important elements of the design. The frames are about 16′ long in plan and, like many other parts of the project, were prefabbed in a central casting yard.

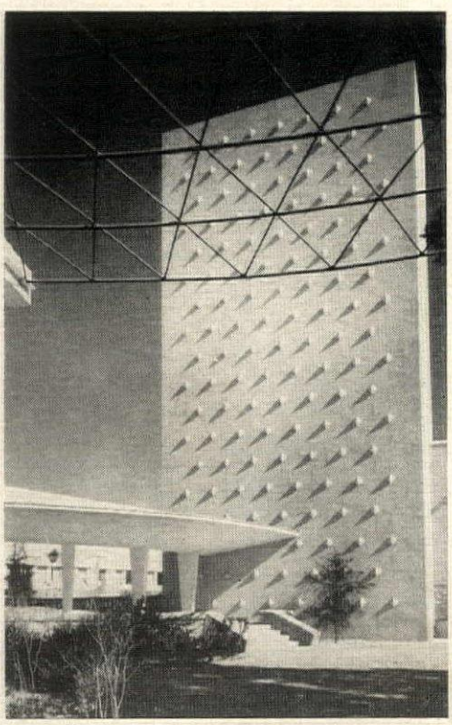


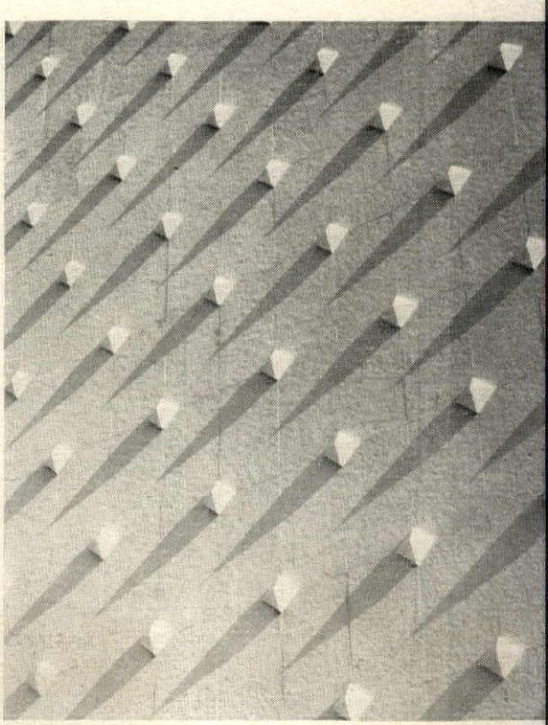


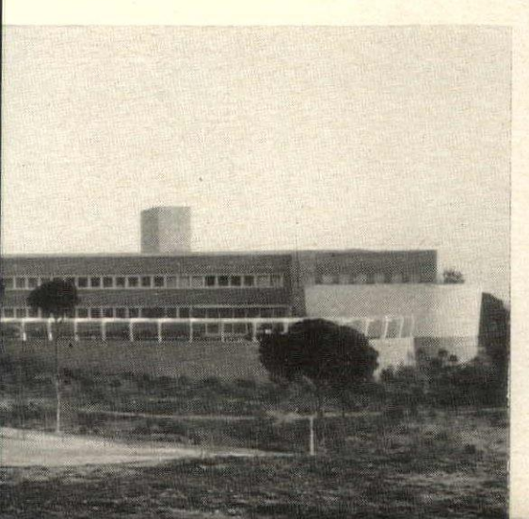
ANGULAR PERGOLA FRAMES around the edge of the parking lot at the main entry are set into the ground at an angle to give visual balance to the 18′ cantilever. The pergola carries a network of wood louvers and slim bridging struts which themselves shield the parking area from the sun and will ultimately be supplemented by a growth of vines. Like the curved pergola, this one is anchored in a granite retaining wall.

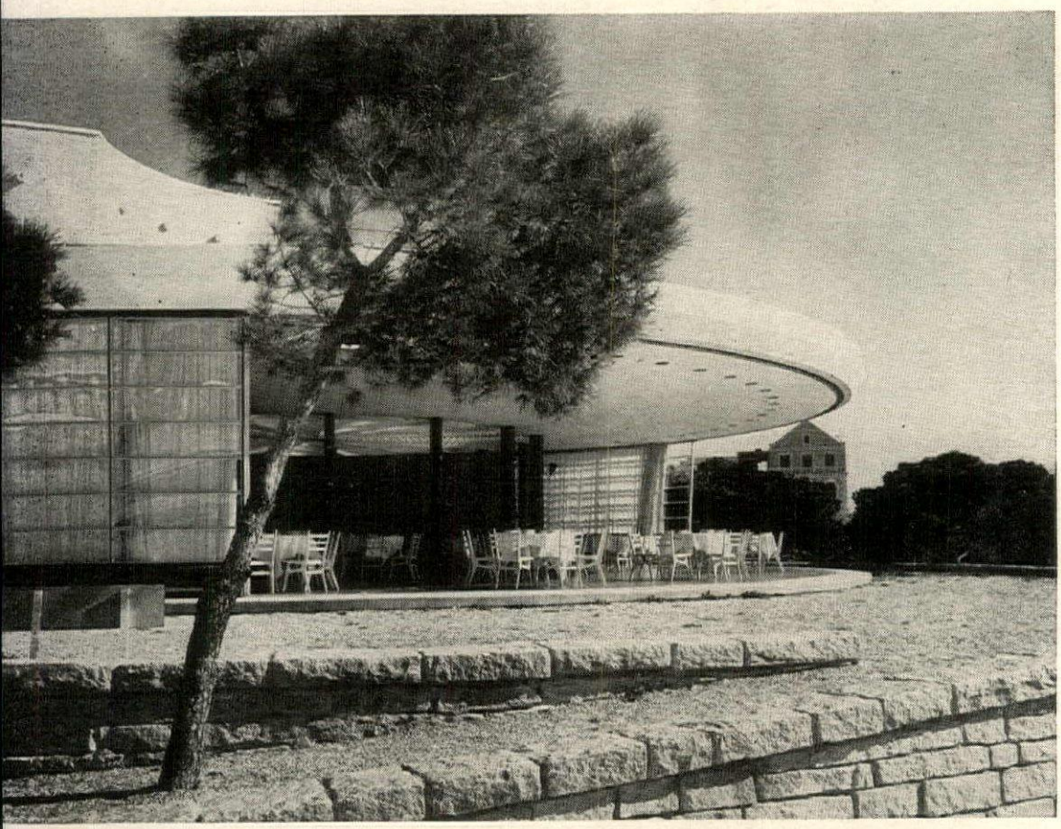
TEXTURED TOWER at one end of the laboratory wing is sheathed with precast concrete tiles and pyramidal buttons which give sparkle to the surface. The windowless tower is used mainly for storage. At its base is a curved canopy cantilevered two ways from a single row of columns. Not a sheltered walk between two buildings, it is merely a patio entry and another demonstration of concrete.

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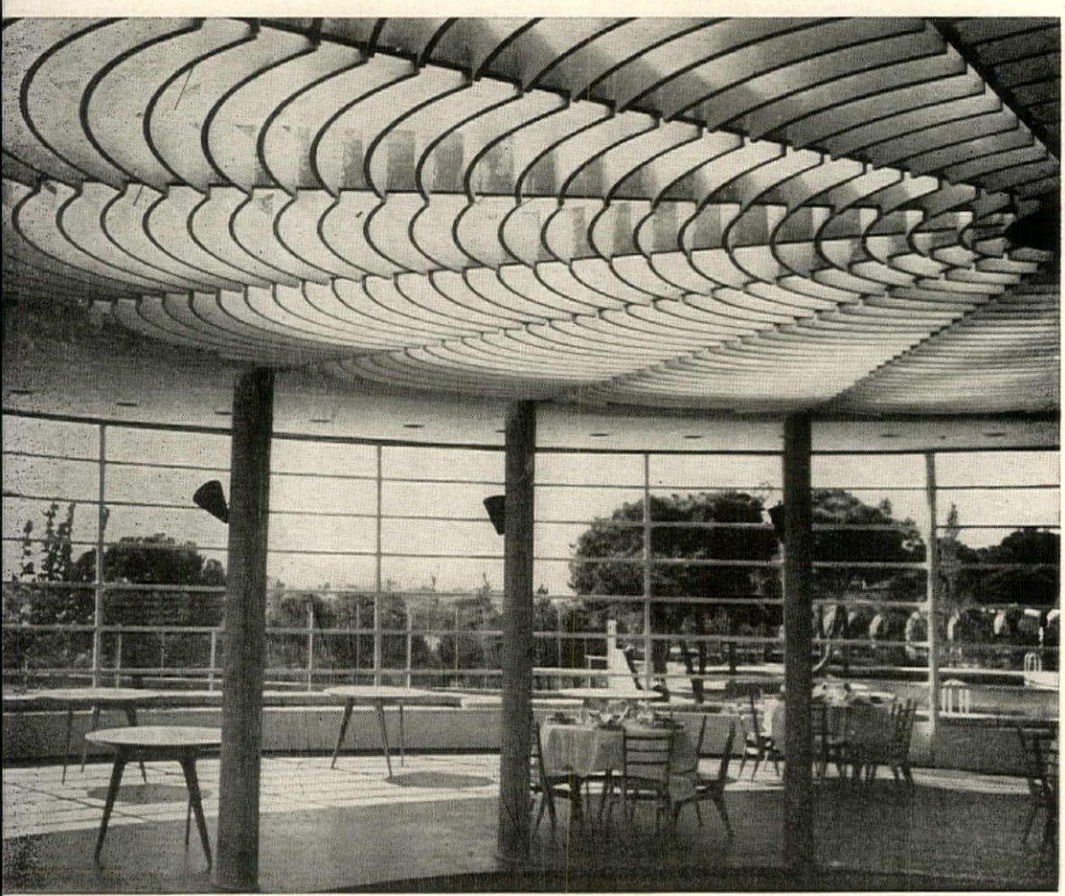


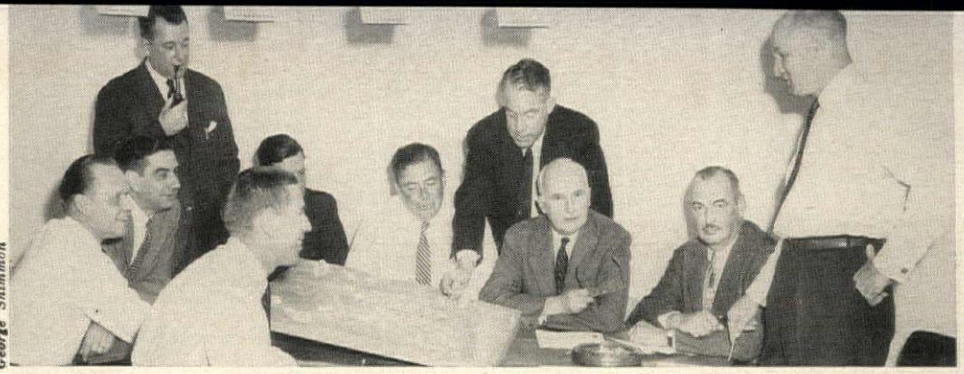






CIRCULAR RESTAURANT at Madrid's Concrete Institute is built like a huge mushroom—the roof is cantilevered out about 23′ from a central ring of columns. By rolling back the glazed wall panels, more than half of the big room becomes an outdoor dining terrace (above). At the center, inside the ring of columns, is a fountain and a planting area daylighted through a grille of thin precast concrete vanes arranged in a delicate petal pattern (below). Like all other unusual exercises in concrete which characterize Madrid's "Costillares," this restaurant bespeaks the structural inventiveness and talent of the institute's director and designer, Engineer Eduardo Torroja.





George Shimmon

S-O-M Partners (clockwise): Elliott Brown, Robert Cutler, Walter Severinghaus, Grodon Bunsha, John Rodgers, Nathaniel Owing, William Brown, Louis Skidmore, John Merrill, William Hartmann.

EXCERPTS

Outside opinion and comment on the building industry from the rostrum and the press

Design by conference

An account of the 341-man staff of Architects Skidmore, Owings & Merrill

A digest (with special permission) of an article in Business Week (Dec. 4, '54)

Skidmore, Owings & Merrill represent group architecture at its fullest development to date; they have learned how to throw a team into a project without sacrificing either flexibility or responsibility.

The heart of the SOM system is the blending of the skills of ten partners who have nearly equal responsibility in the firm. "You get together to do things you couldn't do alone," is the way one partner expresses it. This is the special feature of SOM's approach; perhaps the most striking result is the cohesive concept of design that comes out of this joint effort.

Since the war, SOM has designed, engineered and supervised some $2 billion worth of buildings, and it has expanded accordingly. The ten general partners are backed up by 15 associate partners and 22 participating associates, any or all of whom may some day become partners, plus a domestic staff of 294.

SOM's style of architecture is so well known that the people who want Greek temples and Gothic castles for their plants, schools or hospitals do not come to the firm at all. This automatically screens out most of the clients who might otherwise have to be argued into accepting the SOM style of architecture.

As the organization expands, SOM finds it harder to keep the cohesiveness of taste and technique that is its hallmark. One help in doing it is the post of coordinating partner. Each year the partners elect one of their number for this job, rotating the appointment. He coordinates administration and production, as well as design, among the four offices, holds monthly meetings to keep everyone thinking on the same track and assigns partners and staff members to specific phases of a project.

After determining the client's needs, the architects reconcile function with modern design. "Programming is function," is SOM's paraphrase of architecture pioneer Louis Sullivan's "form follows function" phrase. SOM goes on to say: "When you organize the client's needs into a plan that is most efficient, you have proper form." SOM people claim they have no set style of architectural design. But their buildings are regarded as having a strong family resemblance, identified with the international school of architects.

SOM's buildings do not meet with universal acclaim, but most critics find something they like. Lewis Mumford, author and urban planning consultant, called New York Life Insurance Co.'s Manhattan House, for example, "a white whale of an apartment house," but he recently described the new Manufacturers Trust branch as "a glass lantern . . . even more striking by dark than by daylight."

As a product of group architecture—"design by conference"—SOM's buildings are quite different from the individualistic efforts of, say, Frank Lloyd Wright. The SOM relationship with clients is different, too, from Wright's patron-architect relationship; SOM gives its clients an active part in the planning, rather than regarding a contract as a commission to go all-out on its own ideas of design.

"Every job," says one of the partners, "is a marriage of owner and architect."



What's wrong with our redevelopment?

Catherine Bauer's answer: we have the tools, but not the know-how

Excerpts from a statement made before a recent meeting of the National Association of Housing and Redevelopment Officials. Wife of Architect William Wilson Wurster, Catherine Bauer is a pioneer in the field of public housing and a noted author and lecturer on the subject

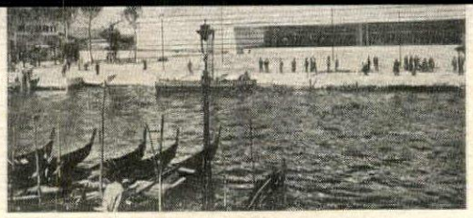
We have created a vast array of governmental machinery, for private and public housing, for slum clearance, redevelopment and now renewal, for city planning and public works. However, although these tools are very powerful and together will shape the future of our communities for better or worse, it is not at all clear what kind of community we are really trying to produce with them.

The difficulty lies in the fact that each of these tools tends to operate in a narrow and arbitrary world of its own, divorced from the rest and often quite unrelated to the social and civic requirements of the metropolitan community as a whole. Public housing is usually a separate little pocket of city government, dominated by rigid federal rules and regulations. FHA-aided housing spreads its anarchic flood with little regard for over-all community needs, more and more often beyond the reach of responsible local government (which merely inherits the resulting headaches). Redevelopment and renewal seem to be the special preserve of "downtown interests," which in too many cases are blinding themselves to the metropolitan social and civic problems and decentralization trends which will ultimately decide what central districts *should* be used for. City planning is kept from viewing the urban organism as a whole, by the obsolete boundaries of jealous local governments.

We won't really know what we are doing with our fancy new tools, or what we should

EXCERPTS

be doing, until each metropolitan community has determined a comprehensive housing and development policy *for itself*, a policy that deals with the social, economic and civic potentialities of the area as a whole, including outlying development as well as central reconstruction, a policy that meets the housing needs of all income groups, races, occupations and family types. Only on such a basis can we begin to use *any* of our tools effectively. Only thus can the local community begin to assume responsibility for guiding its own destiny, instead of merely hanging on to the coattails of disparate federal policies and irresponsible speculative initiative.



When is a Venetian blind?

Excerpts from the Architects' Journal of Britain

After the fuss which was created about Frank Lloyd Wright's proposal for a building on the Grand Canal (AF, May '54), it is interesting to see what kind of modern buildings can be put up without offending Venetian sensibilities. This photograph shows the new railway station façade, erected without international petitions or letters to the *Times*, tamely modernistic in its detailing—but, in its sprawling horizontality and low roof line, far more disastrously "out of keeping" with the characteristic verticality of Venice than the spritely and well-judged uprights of Wright's project would be. But has anyone heard any protests?

Lighting's role in architecture

As in painting, the architect's use of light spells the difference between masterpiece and failure

Excerpts from a speech by Richard Kelly, lighting designer and engineer of New York, at the conference on Architectural Illumination at the School of Design of North Carolina State College

The American Association of the Blind states that 87% of all sense perception comes through our eyes, and the National Society for the Prevention of Blindness concurs. Though architectural work is done to control nature, to the benefit of our senses, 87% of impact of our architecture is due to the way we see it. Architectural forms, their material, scale, proportion, color, decoration, and even our feeling of their durability and stability, are revealed to us mostly through our eyes according to the way they accidentally appear or are planned to appear.

In front of the mind's eye are three elements in the perception of visual design—three elemental kinds of light effect which can be related to the art of painting for easier visualization: 1) focal glow or highlight, 2) ambient luminescence or graded washes, and 3) the play of brilliants or sharp detail. These three elements are also the order of imaginative planning.

Focal glow is the campfire of all time. It is also the celebrated limelight of aphorism, because of the early English music halls and their use of antiquated projectors which burned a gas resulting from wetting a kind of lime. Focal glow is the "follow spot" on the modern stage—it is the pool of light on your favorite reading chair, the shaft of sunshine that warms the far end of a valley, candlelight on a face or a flashlight's beam. Focal glow draws attention, pulls together diverse parts, sells merchandise, separates the important from the unimportant, helps people see. Focal glow sometimes becomes multiple foci desirably producing a significant composition of attention. As the number of foci increases in more complex compositions, a pattern results which can continue and can come to resemble the second element of light, ambient luminescence.

Ambient luminescence is the uninterrupted light of a snowy morning in the open country, fog light at sea in a small boat, twilight haze on a river where shore and water and sky are indistinguishable. The show lighting in a dome amphitheater, the full cyclorama of the open theater, an art gallery with strip-lighted walls, translucent ceiling and white floor. It is also all we know of indirect lighting. Ambient luminescence produces shadowless illumination. It minimizes form and bulk and consequently the importance of all things and people. It suggests the freedom of space and tends to suggest infinity which is usually reassuring, quiets the nerves and is restful.

The play of brilliants is Times Square at night, an eighteenth-century ballroom with crystal chandelier of many candle lamps. It is sunlight on a fountain or a brook, a cache of diamonds in an open cave, the rose window at Chartres Cathedral, night automobiles at a busy clover-leaf, a city at night from the air, the trees outside your window interlaced with the beams of a spotlight or a shaft of sunlight, a sparkling cabinet of glassware. Play of brilliants excites the optic nerve and in turn stimulates the body and spirit, quickens the appetite, awakens curiosity, sharpens the wit and is distracting or entertaining as it is used and desired.

Visual beauty is perceived by an interplay of all three kinds of light, though one is usually dominant. It is therefore of first importance to plan lighting whether creating a new structure, altering an old or making existing conditions tolerable. By the judicious and artful control of these three elements you can make an imagined water-color rendering become the real thing, become your idea of the beauty of architecture or decoration. These three kinds of light make it easier to see (focal glow), make surroundings safe and reassuring (ambient luminescence) and stimulate the spirit (play of brilliants). To play with light is like playing with magic

Blackstone Studios



continued on p. 169



GLASS AND GREENERY are the walls. Glass walls on two sides of the big one-room office let the occupants enjoy the greenery of the planting strip (beyond) and the terrace (right). File cabinets (left) are kept low. Openness preserves the inspiring characteristic of the lift-slab construction.

OFFICE OF MERIT

OFFICE WITH BUILT-IN VIEW

OWNERS: Cass & Johansing
LOCATION: Los Angeles
ARCHITECTS: Albert C. Martin & Assoc.
GENERAL CONTRACTOR: J. A. McNeil Co.

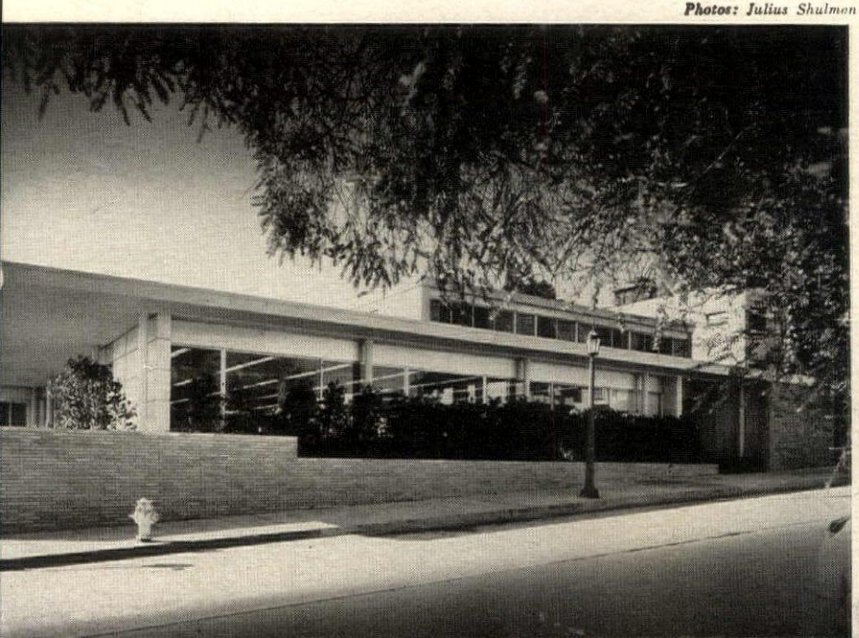
The 60 people who work in Cass & Johansing's new insurance brokerage offices in Los Angeles enjoy more amenities than most city workers. Although it makes full use of a square city lot, the building is open on three sides without loss of privacy. The secret is a planting strip on one side (left), a screening wall and a terrace on another side (p. 155), and an interior patio on a third side (p. 154). The fourth side is walled with service rooms.

To make the most of its amenities, visual obstructions within the building are minimized. There are no private offices—not even for the partners—and the file room is unobtrusively defined with counterheight, two-drawer cabinets (left photo, above).

The decision to use lift-slab construction was based on the desire to build over the entire area of the site and to make it easier to open up the periphery. Although this technique produced thicker floors than ordinary construction (9¼" second floor and 7¼" roof), it cost no more. The building cost $285,000 (including $35,500 for air conditioning and $6,200 for the slab-lifting operation), or about $18.50 per sq. ft.

PLANTING PROVIDES PRIVACY. Along the main front, the 4'-wide planting strip screens the open offices. At the corner of the sloping lot the wall rises to 7' to become the screen along the side street. The lift-slab roof is the dominant design element.

Photos: Julius Shulman

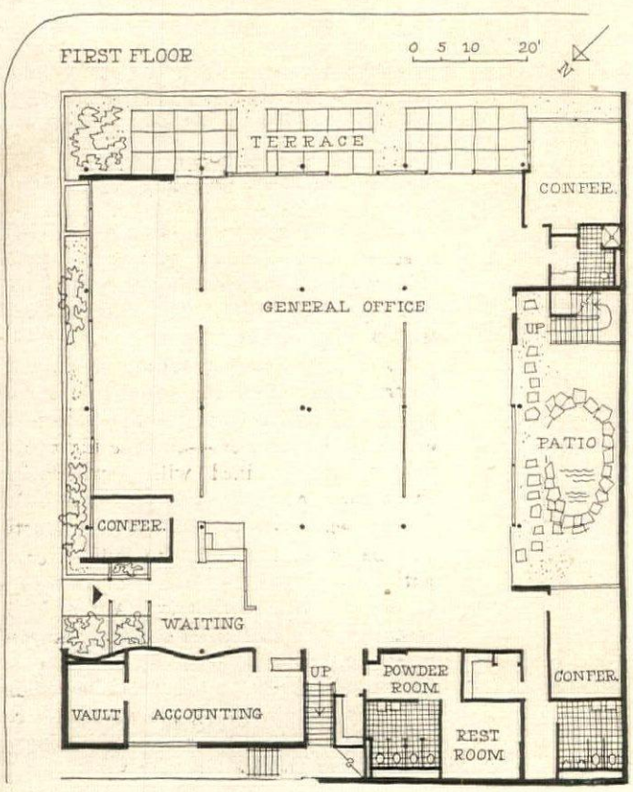


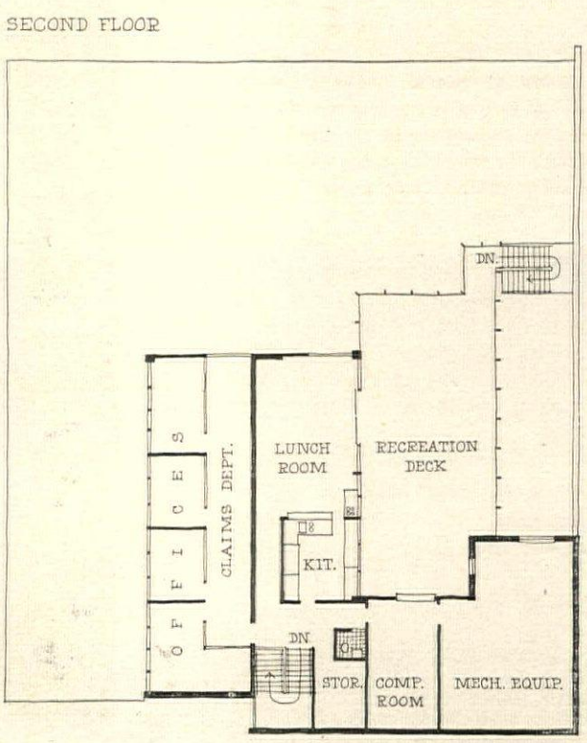


Photos: (below) Maynard Parker; (others) Julius Shulman



PATIO CREATES EXTRA EXPOSURE. Although it is up against another building on its southwest side, this office enjoys a pleasant southwest exposure. An 18′ x 40′ patio is the trick; it adds a third exposure to the big office. In the late afternoon a motorized vertical blind of 7″ cloth vanes moves across the window to screen the sun but not the garden view (photo, above). To make the most of its landscaping on three sides, interior partitions are minimized. On the main office floor, only the three conference rooms, toilet facilities and vault are enclosed. Upstairs are the private claims offices, employees' lunchroom and a recreation deck overlooking the landscaped patio.







TERRACE IS A BUFFER against sun and street. The building occupies the entire site, but on its southeast side the wall is set back 12′ to form a sheltered terrace which serves as a sunshade, a pleasant conference area and a barrier against street distractions. It is raised 4′ to 9′ above the sloping sidewalk and therefore enjoys considerable privacy. Inside, the ceiling is furred down from the roof slab to accommodate air-conditioning ducts and fluorescent light troffers. Window walls and ceilings throughout are white or light gray. On other walls in each area a main color shade of medium weight was used and, sometimes, a complementary color shade of the same weight.



SPECIFICATIONS

FINISHES: Floors—asphalt tile, Armstrong Cork Co.; porcelain nonslip and natural clay, American Olean Tile Co. Stairs—rubber, Goodyear Tire & Rubber Co.; recreation deck, Dex-o-tex, Crossfield Products Co. Interior wall paints—Socony Paint Products Co. Corrugated glass partitions—Structuralite, Mississippi Glass Co. Ceilings—acoustic ceiling tile, Travertone, Armstrong Cork Co.

FIXTURES: Recessed lens bottom slimline troffers, Lite Control. Grilles — diffusers and thermostats, Barber-Coleman Co. Aluminum window sash, fixed and sliding—Glide Windows Inc. Glass—¼″ plate, Pittsburgh Plate Glass Co. Blinds—Thru-Vu Vertical Blind Corp. Drinking fountains — Westinghouse Electric Corp.

FURNITURE: Countertops—resinous plastic, Formica Co. Steel furniture and file cabinets —Los Angeles Desk Co. Wood furniture—Barker Bros. and Leathercraft Furniture Manufacturing Co.

FABRICS: Carpets—B. F. Shearer Co. Vertical blinds—white Celanese Multicord, Celanese Co.

BUILDING ENGINEERING

1. *Concrete slabs 4" thick span 75' factory roofs*
2. *Laminated timbers span 190' field-house arenas*
3. *Engineering notes—brief reviews of other developments*



1. FOLDED PLATE SHELL CONCRETE ROOFS

Space-frame construction, easy to design and erect, reduces cost of factory roofing to $9 per sq. ft.

Because flat concrete slabs become mutually supporting if they are leaned one against another, they can be made into strong roof structures capable of spanning wide areas at minimum cost. It is only necessary to construct rigid joints between slabs and adequate end diaphragms to carry thrust. Three examples of such space-frame construction are shown in the new H. W. Moore Equipment Co. building at Denver, Col.:

▸ A 120′ x 80′ office and display hall formed by three 6″-thick inverted "V"-shaped folded slab roofs, each 40′ wide and 80′ long, carries a 39′ x 72′ mezzanine office floor suspended directly from the roof structure. Thrust of the folded slabs is taken by precast concrete tie beams between supporting columns at each end.

▸ A 180′ x 80′ shop area, entirely free of columns, is formed of five 36′ x 80′ inverted "V"-slabs, two of them carrying 15-ton capacity traveling cranes between the 80′-long connecting folds of adjacent bays.

▸ A 217′ x 119′ office and parts area is formed of 4″-thick "Z"-shaped folded slabs carried on columns 75′ apart with the slabs cantilevered out 22′ to either side. The folded slabs are arranged to provide 33″-deep north-light clerestory windows between adjacent slabs (see photos, right).

The entire building was bid and erected for $9 per sq. ft., including hot-water radiant heating in the floor slabs. And despite the unusual design, the architects received four very close bids, all within 2% and the three lowest within 0.9% of each other. Reason: the architects and engineers, working closely together, took the trouble to design easily moved, multiuse formwork for the job, and took the time to make clear detail drawings and instructions.

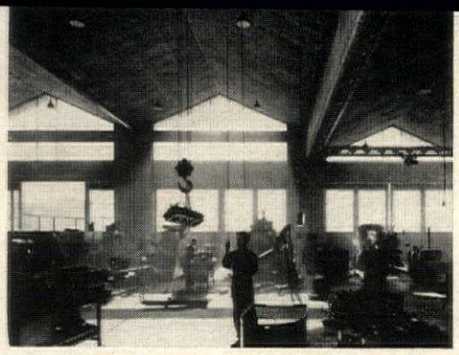
Folded plate construction requires thicker slabs than cylindrical shells because of the larger bending moments involved, but has definite advantages: 1) flat formwork is simple and inexpensive, only one third of total framing costs on this building; 2) only straight reinforcing steel is required; and 3) the design calculations are not difficult and can be made with ordinary beam formulae. The analysis follows that of Winter and Pei with modifications for deflections as suggested by Gaasfar.* Each folded plate acts essentially as a tilted plate girder, corrected to equalize longitudinal stresses in abutting plates. The plate is designed as a continuous slab in the short direction. In the "Z"-slabs, the side plates act as restraining members for the main plate girders. Two planes of reinforcing bars are used so that each slab is always reinforced for both positive and negative moments.

The building is designed by Tom Moore, architect, and Milo S. Ketchum, structural engineer. N. G. Petry Construction Co. was the general contractor.

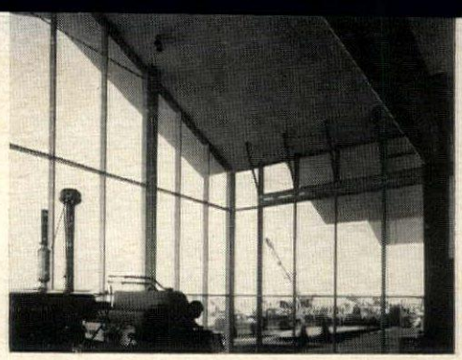
*George Winter and Minglung Pei, "Hipp d Plate Construction," ACI Journal, Jan. 1947; Ibrahim Gaasfar, "Hipped Plate Analysis, Considering Joint Displacements," Proceedings, ASCE, Vol. 79, Separate 182, April '53.



Air view of equipment factory shows shop area on left, with 36′ x 80′ folded plate slabs, a display area in front with 40′ x 80′ folded slabs cantilevered 28′ forward of supports, and an office and parts area in rear with Z-shaped north-light slabs.



Shop interior of 36′-wide bays is roofed with 6″-thick folded slabs tied by precast beams at ends. Roof carries 15-ton cranes.

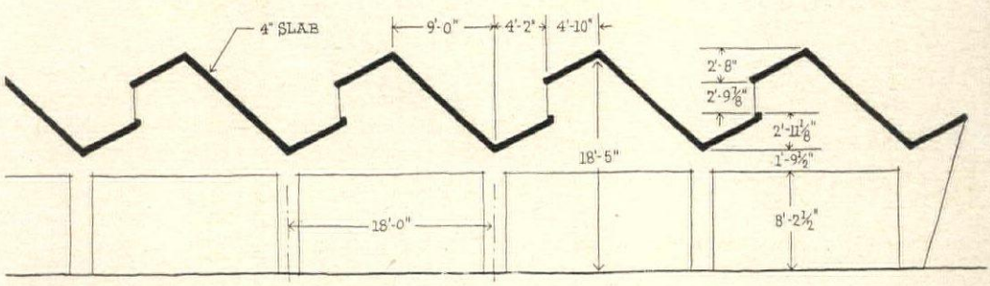


Display room is roofed with cantilevered slabs. Thrust is taken by tie beams between columns (seen at right of photo).



Photos (above): Winter Prather

"Z"-slabs 18′ wide and spanning 75′ between columns cover parts department. Folded slabs, only 4″ thick, are braced by transverse diaphragm walls between columns. Continuous clerestory windows between Z-slabs are 33″ deep.

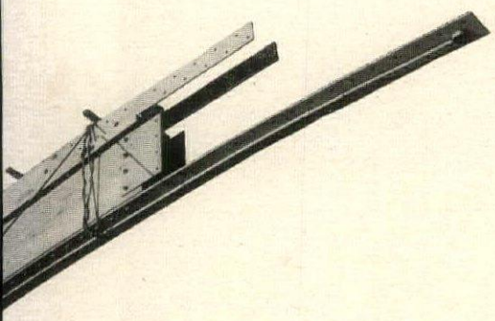


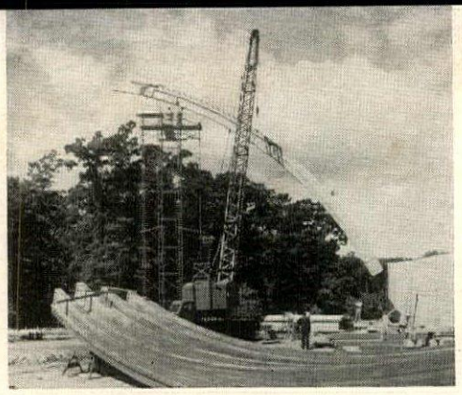
Section shows profile of Z-slabs. Concrete on 45° slope of main slabs was of stiff consistency, 3,750 psi and 2″ slump, and was poured with light grout over formwork which helped mix to slide into place.

Cantilevered 22′ from column supports, concrete Z-slabs were cast on plywood forms built atop steel trusses and reused six times.

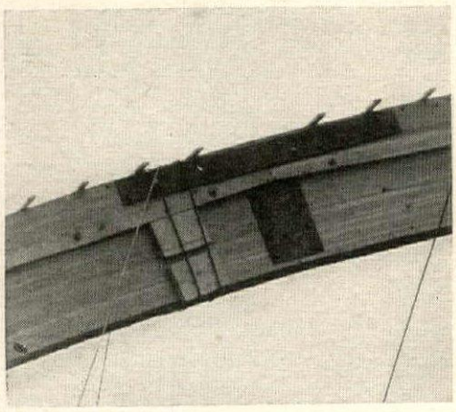


2. RECORD-BREAKING TIMBER ARCHES

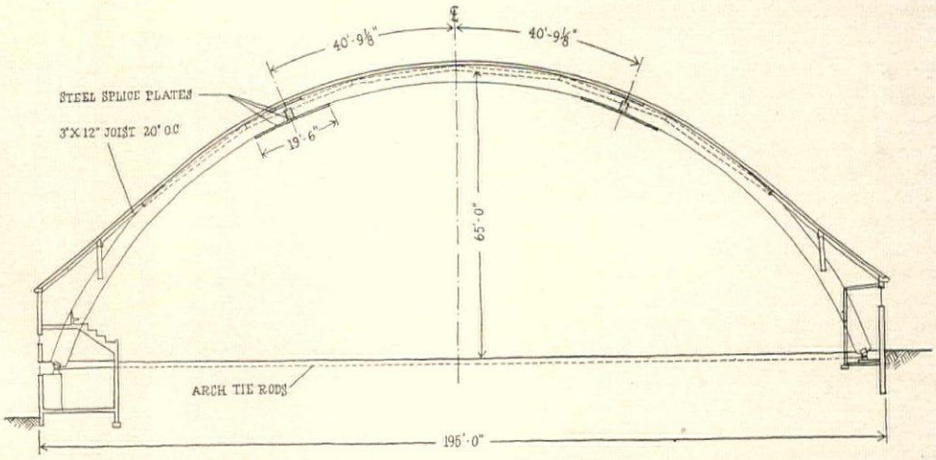




Laminated section, 83′ long and weighing 4 tons, is raised between hinge and erection tower. Left, detail of splice.



Steel splice provides rigid joint between sections of two-hinged arch. Each splice contains 92 1″-diameter bolts.



Section shows how 247′-long arches span 190′ with a rise of 65′. Arch section is 11″ x 42″ made up of 21 2″ laminations.

Center section of arch (below) is lowered, ready for bolting at splice connections. Erection platforms are mounted on wheels.



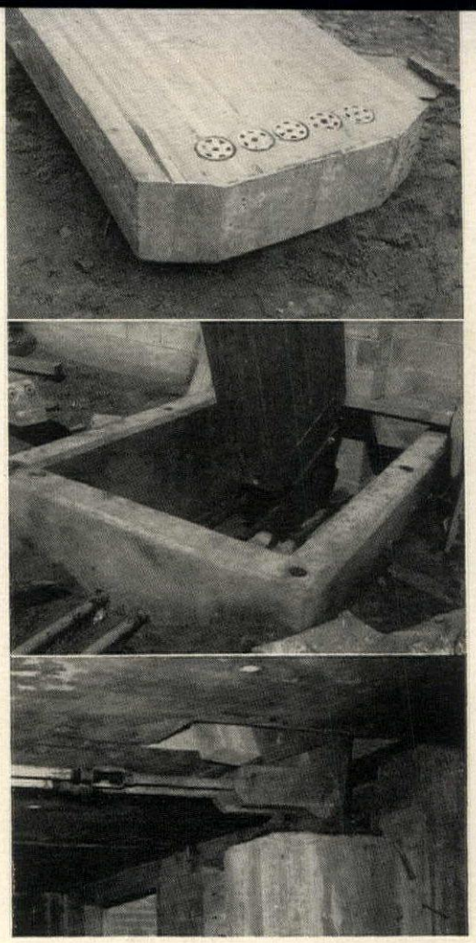
Union College field house uses 247′ frames to cover 190′; Montana's uses flatter 226′ arches to span record 201′

Nine 11″ x 42″ laminated arches, weighing 12 tons each, span 190′ over the new Union College field house at Schenectady. Three 83′-6″ sections are connected in the field with steel moment splices to form a 247′-6″ arch, a record length for laminated timber construction. (The record span, 201′, is claimed by Montana University's new field house, below, right, but the arches are of a flatter curvature and are, therefore, shorter.) Complete with joists bracing timber and columns, and 1″ sheathing, this roof structure was built for a bid price of $125,000 in place, $3.18 per sq. ft. of the 190′ x 206′ building.

Designed for a 30-lb. live load and 21-lb. dead load, the 11″ x 42″ deep timbers are built of 2″ Douglas fir laminations. They are spaced 25′-5″ o.c., bolted to huge steel hinges set in concrete foundations. Spanning between the arches are 3″ x 12″ joists.

Erection of the nine arches, the joists between them, and laminated timber end columns up to 68′ high took ten weeks, using one truck crane and a 12-man crew. The 4-ton side arch sections went up first, with hinges already positioned to the arches and ready to be joined to the foundation plates; the other end of each section was temporarily supported on a tubular steel scaffold. Next the center section went up, the steel moment splice beween arch sections bolted, the tie bars joined and tensioned and the arch braced. Only two scaffolds were used, each mounted on wheels for easy movement from one arch to the next. This field house is also notable for being the first building to contain fluorescent lighting at frequencies and voltages appreciably higher than ever before. Electricity is supplied at 400 cycles and 600 v. to the building's 490 8′ fluorescent lamps. Advantages: 25% more light output; 10% saving in initial cost (additional savings on wiring offset the cost of a rotary converter to generate 400-cycle current); and 50% reduction in weight of fixtures because more efficient capacitor ballasts can be used.

The field house is designed by McKim, Mead & White, architects, and Severud-Elstad-Krueger, structural engineers. Timber Structures, Inc., designed, fabricated and erected the arches. General Electric Engineer Howard D. Kurt designed the high-frequency lighting.

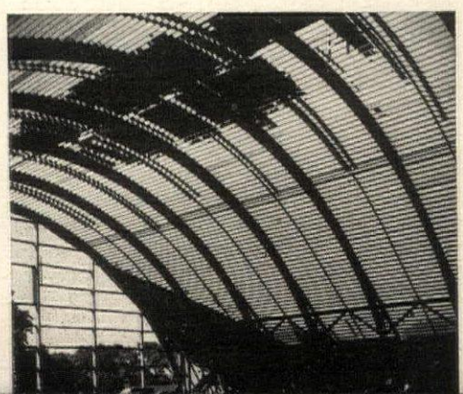


Hinge details: top, end of 42″ x 11″ arch with five reinforced bolt holes; middle, arch bolted to steel hinge and in place atop footings; below, two 2½″ diameter tie bars running under arena between opposite hinges.



K-trusses of laminated timbers up to 9″ x 24″ in section span 25′ between arches.

Joists, 3″ x 12″, span between arches and are covered with 1″ sheathing and built-up roof.



Photos: (below) Ingvard Eide; (others) J. P. McNally Studio



RECORD-SPAN TIMBER ARCHES

Greatest span for timber arches is 201′-6″ at a field house of Montana State University in Missoula. Ten three-hinged arches of 226′-arc length are spaced 20′ o.c. atop 26′-high concrete retaining walls. Cost of the structure is $697,317 in place, reported as $21,000 less than a steel alternate. The field house is designed by Brinkman & Lenon, architects, and Olsen & Kitchin, consulting engineers.

3. ENGINEERING NOTES



UNDERGROUND GARAGE

It uses hung ceiling of concrete slabs for air-conditioning plenum

Chicago Park District's 1,200′ x 375′, two-story garage beneath Grant Park and Michigan Ave. is open for business. Though construction costs were somewhat high for parking garages, $8.3 million ($3,520 per car or $920 per sq. ft.), the 2,359-car garage is on city-owned land and does not take valuable real estate away from the city's tax rolls. Much of the cost went for excavating (330,000 cu. yd.) and landscaping.

The self-parking garage contains two parking levels underground and a small, 200-car mezzanine above ground. It is of reinforced concrete flat-slab construction, with 2′ diameter columns spaced 29′ o.c. each way.

The garage roof is 4′ below the original ground level of Grant Park and topped with 4′ of earth fill to permit restoration of the park. Fresh air, 1,766,400 cfm for 15 air changes an hour, is drawn in through rooftop louvers set beneath the seats and terrace walls of the park, into a 42″-deep plenum chamber below the garage roof, to enter each parking level through grills on the long west wall. The air is withdrawn at the opposite wall by 28 exhaust fans.

The false ceiling under the air plenum is built with 2′ x 5′ precast concrete slabs, 1⅝″ thick, carried on T-irons bolted to steel hangers suspended from the concrete roof.

By the use of pumping and traveling conveyors to place the 65,000 cu. yd. of concrete required for the job, the contractors finished the two portions of the garage respectively 86 and 80 days ahead of schedule, thus winning a bonus of $500 for each day and considerable savings in labor and overheads.

The garage was designed by Ralph H. Burke, consulting engineer; John Griffith & Son Construction Co., general contractors.



Courtesy Owens-Corning Fiberglass Corp.

COLD-STORAGE INSULATION

Refrigerated buildings use three kinds of nonabsorptive insulation

Many insulating materials tend to absorb moisture with a consequent loss of insulating efficiency. This possibility is greatly reduced in the new refrigerated buildings of the Anheuser-Busch brewery in Los Angeles, by means of an outer vapor barrier of continuous aluminum foil, 4″ fibrous glass insulation and a surface finish of cement asbestos board. All these materials are inert, rotfree and require minimum maintenance. They provide more than adequate insulation to maintain 35° F. in the cold rooms without excessive refrigerating cost.

Construction sequence: 1) interior concrete walls of the cold rooms are sprayed with noninflammable, water-base asphalt adhesive; 2) when this is tacky, 0.003″-thick aluminum foil is pressed to the adhesive; all joints are lapped 3″ and cemented to form a continuous vapor barrier; 3) double layers of 2″-thick pressed glass-fiber insulation boards are pressed between 2″ x 3″ furring strips fastened by drive bolts 48″ o.c.; and 4) 3/16″-thick asbestos board is attached to these strips by galvanized screws. Ceilings have 5″ of similar insulation and floors 4″ plus a felt water seal.

The buildings are designed by Holmes & Narver, Inc., architects and engineers, in cooperation with John Kenneth Hyatt, chief engineer of Anheuser-Busch.

FACTORY HEAT PUMPS

Cost of operating air-conditioning system in shoe plant is cut 30%

Seventeen 5-ton heat pumps provide summer cooling and winter heating for the Virginia Shoe Co.'s single-story, 25,000 sq. ft. office and plant at Fredericksburg, Va. The installation was completed in three weeks for $60,000 or $2.40 per sq. ft. Annual heating and cooling costs are reported as $2,500 (claimed to be 30% less than a conventional fuel-fired system), mainly for the 312,000 kwh required to drive the machines at 8 mils per kwh.

Distributed with individual zone controls around the perimeter of the building, the self-contained, thermostat-controlled units receive and exhaust outdoor air through short stub ducts. In winter, heat is extracted from the outdoor air to heat the building; in summer, the heat pumps automatically reverse, extracting heat from indoor air and pumping this heat into outdoor air. No water is required in these operations.

Air conditioning, which incidentally has raised employee morale, is designed to maintain the constant temperature and relative humidity necessary to develop a consistent quality of leather production. The installation was designed by Air-Conditioning Engineer Fred A. Payne.

UNDERGROUND HEATING SYSTEM

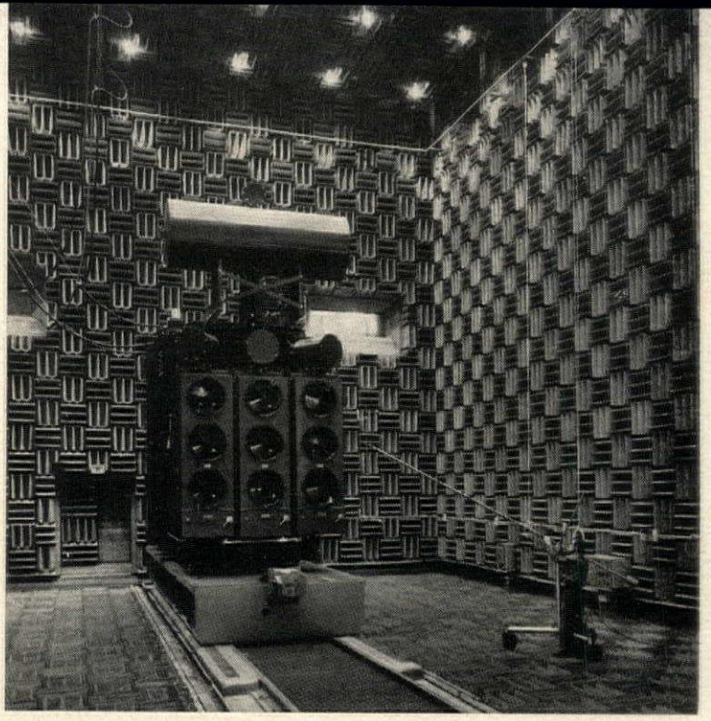
Steam lines, buried outside, cut cost of school heating plant

This five-classroom school at Cadott, Wis., was built for only $51,000, $10,200 for each 24′ x 32′ classroom, or $8.80 per sq. ft. including mechanical equipment, corridor, storage and toilet areas. This was mainly due to the replacement of a costly basement and pipe tunnel construction by insulated steam piping below ground outside the building foundations.

The 60′ x 96′ schoolhouse is heated by classroom unit ventilators equipped with individual pneumatic room controls. These unit ventilators provide an updraft at the classroom windows, thus eliminating condensation and permitting single glazing and economical wood sash fenestration. Flush convectors are used at each end of a center corridor and in the lavatories.

Each heating unit is served by steel steam supply and return pipes, which circle the building outside the foundations and are connected with a centrally located boiler. Underground steam lines are surrounded with a 4″ minimum of water-impervious asphaltic ore, tamped, and covered with earth.

The Cadott School is designed by E. F. Klingler & Associates, architects and engineers.



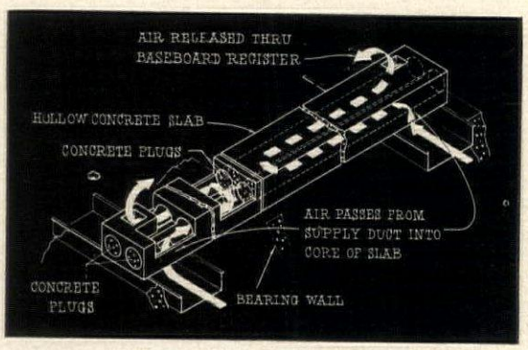
ECHO-FREE LAB

Sound-absorbent wedges and a cable floor eliminate noise and vibration

To help eliminate transformer noise, General Electric engineers, at Pittsfield, Mass., have built a $1.5 million sound-absorbing chamber, 58′ x 48′ and 43′ high, with 12,000 fibrous glass wedges covering walls, floors and ceiling. The floor's working surface consists of tension cables interlaced 2″ o.c. whose vibrations will not disturb the tests. Equipment under test is on rail tracks.

The 28″-deep sound-absorbing wedges are mounted on wooden tracks on 3″ x 6″ studs, behind which is sheet copper (to keep out radio waves), 8″ concrete block, 2″ felt and 12″ reinforced concrete structural walls. This 4′-10″ thick wall has a noise reduction value of over 65 db; the wedges keep the ambient sound level within the chamber to less than 20 db.

The building was designed by Chas. T. Main, Inc., architects and engineers; Bolt, Beranek & Newman are the acoustical consultants.



RADIANT COOLING SLABS

Concrete floor members precast with dual chambers double as air ducts

Hollow concrete floor slabs have been used as supply ducts in warm-air heating installations since 1944. Now, at the Price Brothers Co. office building in Dayton, Ohio, these hollow slabs are also used for radiant summer cooling. Chilled, dehumidified air cools the slabs and is subsequently discharged into offices through basement registers, returning to the cooling unit (or furnace in winter) through return air ducts at the center of the two-story 50′ x 75′ building.

The installation was economical, and controlled tests show it to be effective:

▸Economy—the installation cost $1 per sq. ft. for main ducts and alterations, including an 8-ton cooling unit designed to handle 600 cfm of outside air and a 185,600 Btu's per hour warm-air furnace for winter heating.

▸Efficiency—for summer cooling, dehumidified air is supplied at 55° to 57° F., enters the hollow cores of first-floor slabs at 60° and the offices at 69° to 70°. Thus the floor panels absorb 70 to 80% of the cooling load, the remainder being absorbed by the air entering the offices. There are no cold drafts, since the introduced air enters at low velocity through long, damper-controlled baseboard registers and at only 4° to 5° below room temperature. Individually controlled dampers control air flow, and thus the temperatures of the floor slabs and the offices. Room air temperatures remain constant; only 2° difference was recorded one morning for an outdoor temperature variation of 19°. Vertical temperature gradients vary from 2° to 4°. And condensation on the exposed concrete slab was found to be no problem, because the supply air is dehumidified.

Construction. Air is supplied through two insulated sheet metal ducts running beneath the second-floor slabs along the front and rear exterior walls. Air passes from these ducts into alternate hollow cores of precast floor slabs among the front and rear walls, flowing to the center of the building in one core and back to the exterior walls in an adjoining core, then entering the second-floor offices through baseboard registers. Undersides of the slabs are exposed, providing radiant cooling for a first-floor drafting office, supplemented by sufficient chilled air for ventilation and humidity control. The same system is used for winter heating, when the air supply is reduced from 3,000 cfm in summer to 2,200 cfm in winter.

The installation was designed by J. Raymond Carroll, Air-conditioning Consultant; Architects Lorenz & Williams designed the building.

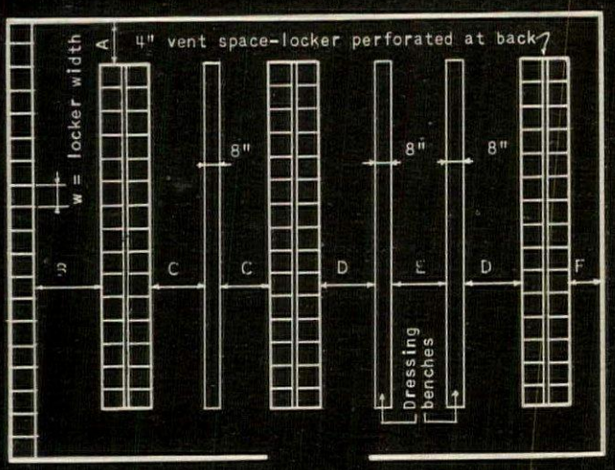
continued on p. 178

architectural forum

DESIGN STANDARDS AND DATA

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DRESSING ROOMS & LOCKERS—1



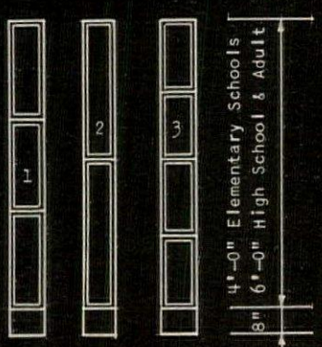
MINIMUM AISLE SPACE FOR DRESSING ROOMS

	SCHOOLS	AVERAGE TRAFFIC
A	2'-0"	2'-0"
B	2W + 12"	2W + 12"
C	2'-6"	W + 6"
D	2'-6"	W + 6"
E	2'-6"	1'-8"
F	2'-6"	W + 12"

Rule of thumb area for locker rooms (school gymnasiums & community recreation buildings) 14 sq. ft. per person (peak period load) exclusive of locker space.

LOCKER ROOM FACILITIES

Stationary benches
Mirrors for both boys & girls.
Shelves below mirrors for girls
Full-length mirror for girls.
Drinking fountain
Bulletin board
Lighting located so that aisles and passages are well illuminated.
Windows located with regard to height and arrangement of lockers.
Adequate ventilation for all storage lockers.



STORAGE LOCKERS

RECOMMENDED LOCKERS FOR GYMNASIUM CLOTHING STORAGE:

1. 7½" wide x 12" deep x 24" high
2. 6" wide x 12" deep x 36" high
3. 7½" wide x 12" deep x 18" high.



DRESSING LOCKERS

RECOMMENDED DRESSING LOCKER SIZES:

12" wide x 12" deep x 48" high

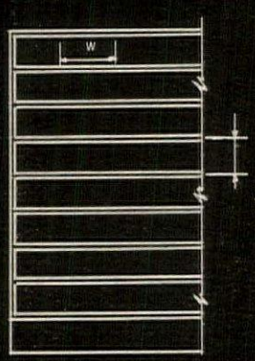
12" wide x 12" deep x 72" high

NO. OF LOCKERS REQUIRED FOR SCHOOL GYMNASIUMS:

1 Dressing locker per student (peak period load)+ 10% to allow for variation in class sizes & scheduling.

1 Storage locker per student enrolled + 10% to allow for expansion.

GYMNASIUM DRESSING ROOMS & LOCKERS



BASKET RACK

w = 1'-1" for large baskets, 10" for small baskets.

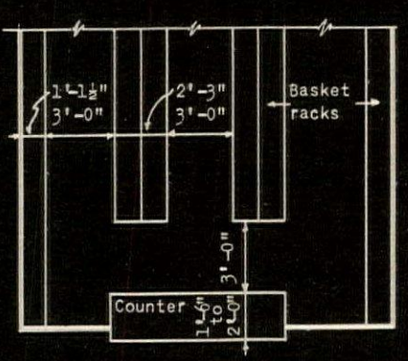
Depth of baskets = 1'-1½"

NOTE: Basket type lockers are not recommended for schools because:

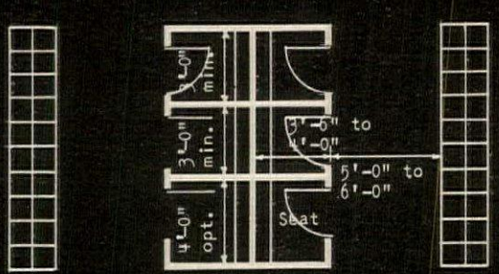
① They do not allow for hygienic care of dressing equipment.

② They are subject to hard wear and must be replaced often.

③ An attendant is required for proper administration



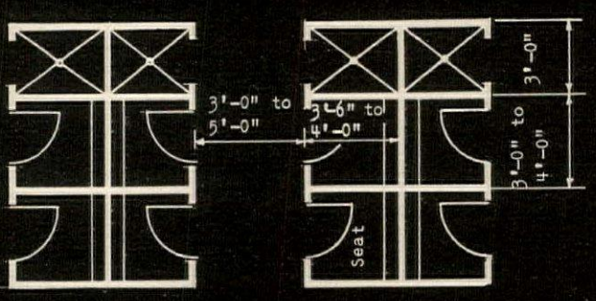
BASKET ROOM



DRESSING ROOMS WITH LOCKERS

NO. OF DRESSING CUBICLES FOR SWIMMING POOLS.

1 to 12 baskets
1 to 6 lockers.

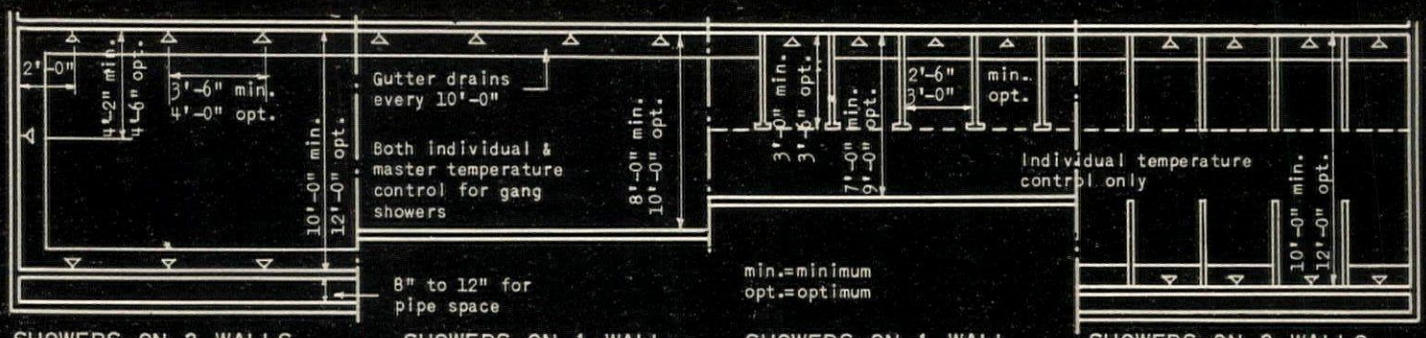


DRESSING ROOMS WITH SHOWERS

SWIMMING POOL DRESSING ROOMS & LOCKERS

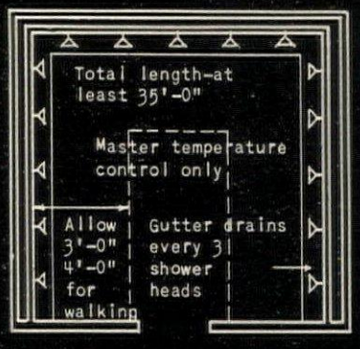
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DRESSING ROOMS & LOCKERS—2



GANG SHOWERS

INDIVIDUAL SHOWERS

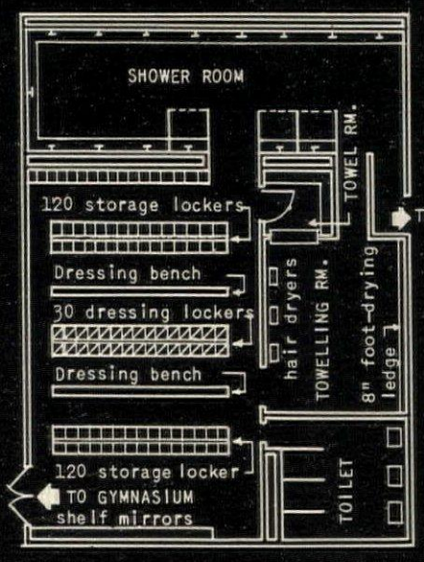


BOYS' WALK-AROUND SHOWER



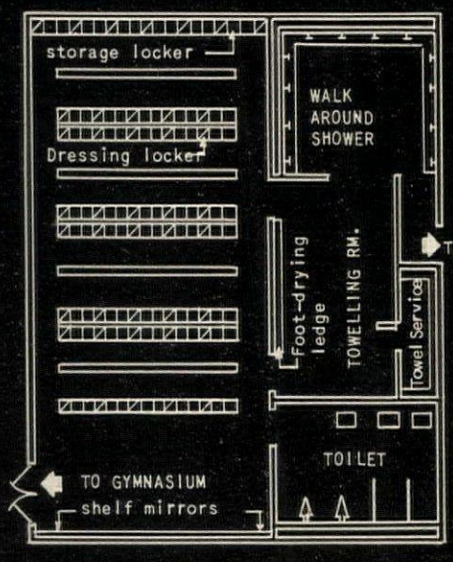
HEIGHT OF SHOWER HEAD

RECOMMENDATIONS FOR SHOWERING FACILITIES		
BLDG. TYPE	NUMBER OF SHOWERS	TYPE
School gymnasiums	Girls - 40% of peak period load + 1 to 3 individual showers Boys - 30% of peak period load. Can be reduced by 1/3 for walk-around type	Gang & individual Gang & walk-around
Bathhouses	Women-1 shower for each 250 women using pool. Men-1 shower for each 250 men using pool	Individual Gang
Community recreation buildings	Minimum for women-6 gang + 4 individual Minimum of 12 for men	Gang & individual Gang



GIRLS' LOCKER SUITE

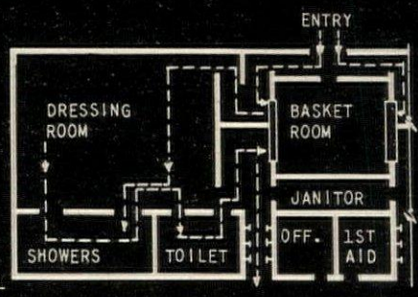
(Serves peak period load of 30)



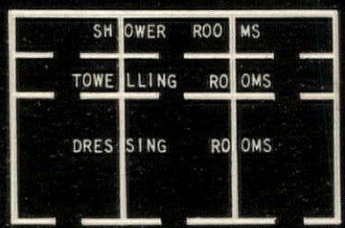
BOYS' LOCKER SUITE

(Serves peak period load of 40)

Scale: 1/16" = 1'-0"



DRESSING UNIT FOR POOL



DRESSING UNITS FOR COMMUNITY USE

RECOMMENDED TOILET FIXTURES FOR GYM LOCKER SUITES		
FIXTURE	NO. OF FIXTURES-BY PROPORTION	MINIMUM
Toilets	Girls - 1 to 30	3
	Boys - 1 to 50	2
Urinals	1 to 25	2
Lavatories	Girls - 1 to 20	3
	Boys - 1 to 20	3

AUXILIARY ROOMS FOR GYM LOCKER SUITES	
TOWELLING ROOM	Equal to shower room in area
Towel service room	Area varies with material to be stored (Room may also be used to distribute uniforms)
Equipment drying room	Depends on drying time & no. of uniforms. This room requires special heating and ventilating.

for all concerned

School boards are having such a hard time laying their hands on building money that people are beginning to conclude, mistakenly, that the US cannot afford a full-scale school program.

It would be ominous indeed if Americans, at this time of prosperity, could actually not afford school buildings for their children, but happily it is not true. In a nutshell: the nation has the money, more than it ever had; but the schools are without adequate expedients for obtaining their share of it.

Real estate and real estate taxes have, up to now, been our main reliance. Because there is a limit beyond which real estate cannot be taxed, bonded indebtedness based on real estate taxes quickly reaches its limit, too.

One minor immediate step is to get real estate evaluations more nearly equalized (it has been proved in some states that they range between .1% and 1,000% of market value), but there remains an intrinsic unfairness, and beyond that an intrinsic impracticality, in relying on real estate so exclusively.

As Cyril Sargent of the Harvard School of Education points out, taking 1939 values as 100, the tax base of real property we now use has risen only to 110; but the nationwide value of new construction of all kinds had risen, by 1949, to 385; personal income, by 1953, to 380; corporation income after taxes, in New York State, to 450.

Looking at it from another angle, since 1929 our localities, which look primarily to real estate, have increased their tax take 65%, so it is now 1.6 times the local taxes of 1929; but meanwhile the states have increased their taxes 511%, so these are now six times the state taxes of 1929; federal taxes have increased 1,581%, so they are now 16.8 times 1929. And remember, all those state and federal taxes were collected out of values created locally. In other words, real estate is the last area to reflect a dynamic period of expansion such as ours. And, as long as schools stay tied to it, we as a nation shall be able to pay for atom plants, automation factories, automobiles and color television, but not schools.

In this situation three channels of action have been proposed, beyond the local remedy of more accurate assessments.

The first is more state aid through equalization funds, helping the less affluent communities.

The second is creation of state "authorities" such as those of Pennsylvania, Georgia and South Carolina, which are set up as private corporations and can borrow against their own bonds backed by the credit of the state.

The third is direct federal aid, which is of course based heavily on the federal income tax.

There is now being added a fourth kind of proposal, which is that private interests may build the school, borrowing the money themselves, the lender being protected by something like an extension of federal FHA insurance; the builder then enters into a lease-purchase agreement with the community, which buys its school from him the way people buy their homes from him under FHA — through "rent." The object, of course, is a dodge to get around the legal limits set on the community's bonded debt, by letting it use "rent" to pay with instead of "interest."

KEEPING SCHOOLS LOCAL

In evaluating these various approaches, there are at least two principles that should be held inviolate:

▷ Whatever partnership the local community may enter into, the control of our schools must be exercised primarily by our local communities. Only in this way can we have the direct responsibility, the local interest, the democratic participation of the citizens, on which all that is good in our American school system depends.

▷ Any financing of schools must be in the hands of the agency that operates the schools. Otherwise the initiative, the educational development, the progress that has been characteristic of schools in America, and that has been brought about by specific administrators working with specific intelligent school boards, will be dissipated through remote control and lost under mountains of rules. This has already happened under the "authorities," including the Finance Department of California, which has wrapped school construction into such a ball of wax—intricate regulations on square feet per child, complicated rules whether space under overhangs counts full or half, and the like —that conscientious architects report they have lost thousands upon thousands of dollars trying to plan good schools *despite* the rules, and a premium is put on school design by dopes and drudges, hampering education at every turn for our children, the ultimate consumers.

Wise educational policy will look therefore with disfavor on the creation of any more purely fiscal state "authorities" as an error costly to real operating efficiency, costly also to education. Any state or federal aid, any marshaling of the state-wide or the nationwide credit, must at the very least be done through educational agencies—the state education departments and the US Office of Education—which are manned by schoolmen interested in children primarily. Moreover, the best of these confine their regulations to a minimum supervision for health and safety.

Meanwhile, there seems to be a very fruitful possibility in the use of federal insurance, rather than direct federal aid — provided only that it is thought through and avoids some obvious pitfalls.

What federal insurance can do is to permit local school boards, acting as the trustees of local parents and children, to use the same principle of installment credit through which consumers now buy houses, cars and television sets so bountifully.

DOUBLING SCHOOL MONEY

The arithmetic is obvious. Just as FHA, in spreading the risk by using the credit of the national community as a whole, has brought down the interest rate on homes from a former 10% (counting second mortgages, fees, etc.) to 4½%, and has spread the amortization period from five years or less to 40 years, so federal insurance of school paper (whether bonds or mortgages) should help most boards cut their interest rate considerably and at least double their amortization period. This means the money will go at least twice as far, which means the same as having twice the money. And this is conservative, for we now have a preposterous situation. Schools, which are built so solidly they will last easily twice as long as the average house, must be paid for in half as much time as the house.

There is a pitfall to be avoided. The insured loan must be made direct to the school board, not, as in apartment building, to the builder. In homebuilding the consumers are not organized and the builder, so to speak, is the enterprising man who organizes things for them. In schools the objective is not anyone's profit but education; it is already organized under school boards acting as the agency of all the citizens and all the children. The school board must be able to call the shots.

Douglas Haskell



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But specify Foldoor . . . **you get more with Foldoor."**

"As a matter of fact, Joe, you'd be surprised at the difference between FOLDOOR and others."

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"And, Joe, I'm sure our client will like the FOLDOOR fabrics. They look and feel like cloth, but wear and wash like vinyl. He'll go for FOLDOOR'S attractive cornice, too . . . especially when he finds there's no extra cost for it!"

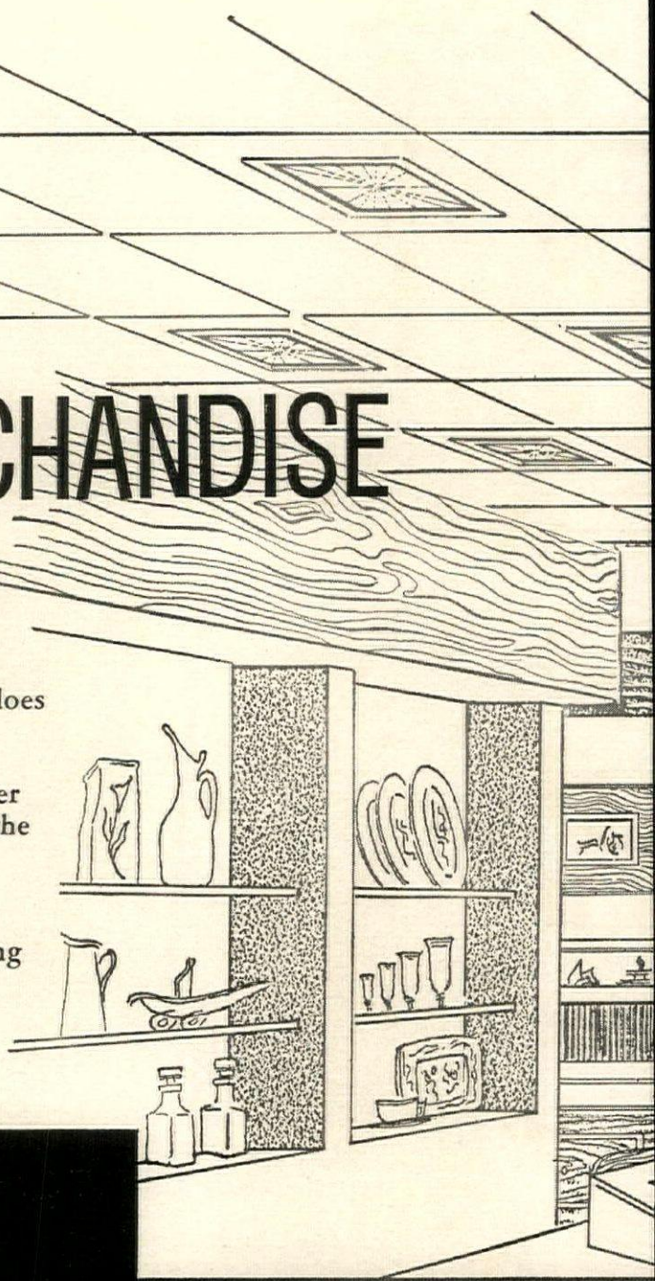
"Yes, Joe, it's smart to use folding doors. But let's get the best . . . specify FOLDOOR."

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THE PRODUCERS' COUNCIL — AFFILIATED WITH THE AMERICAN INSTITUTE OF ARCHITECTS

true color SELLS MERCHANDISE

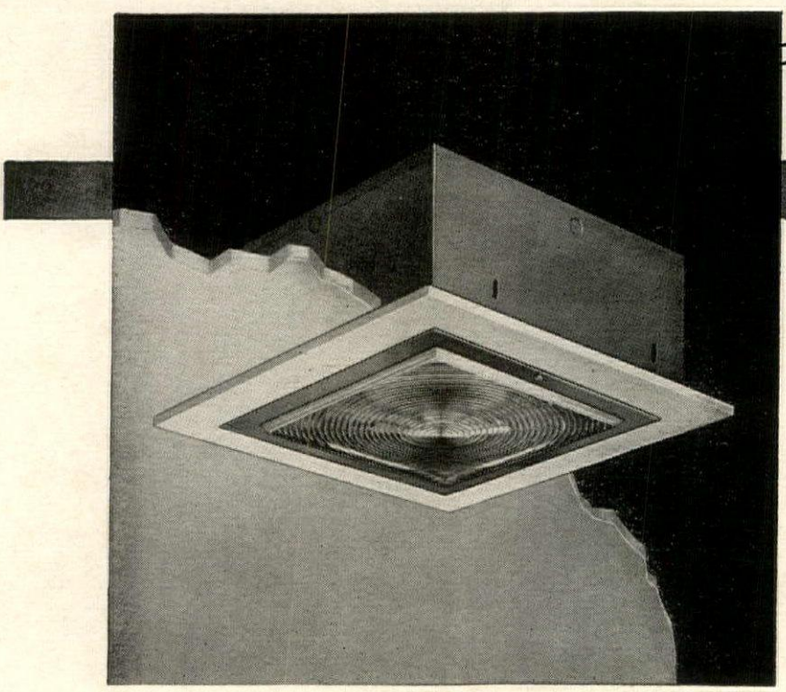


Clear, prismatic Amcolens with its high light transmission in ELIPTISQUARE allows merchandise to reflect true color values—providing the color accent that does a dynamic selling job.

ELIPTISQUARE supplies the general area lighting and ELIPTICONE, the other half of the merchandising pair, delivers the "punch" of attractive high-lighting for featured goods.

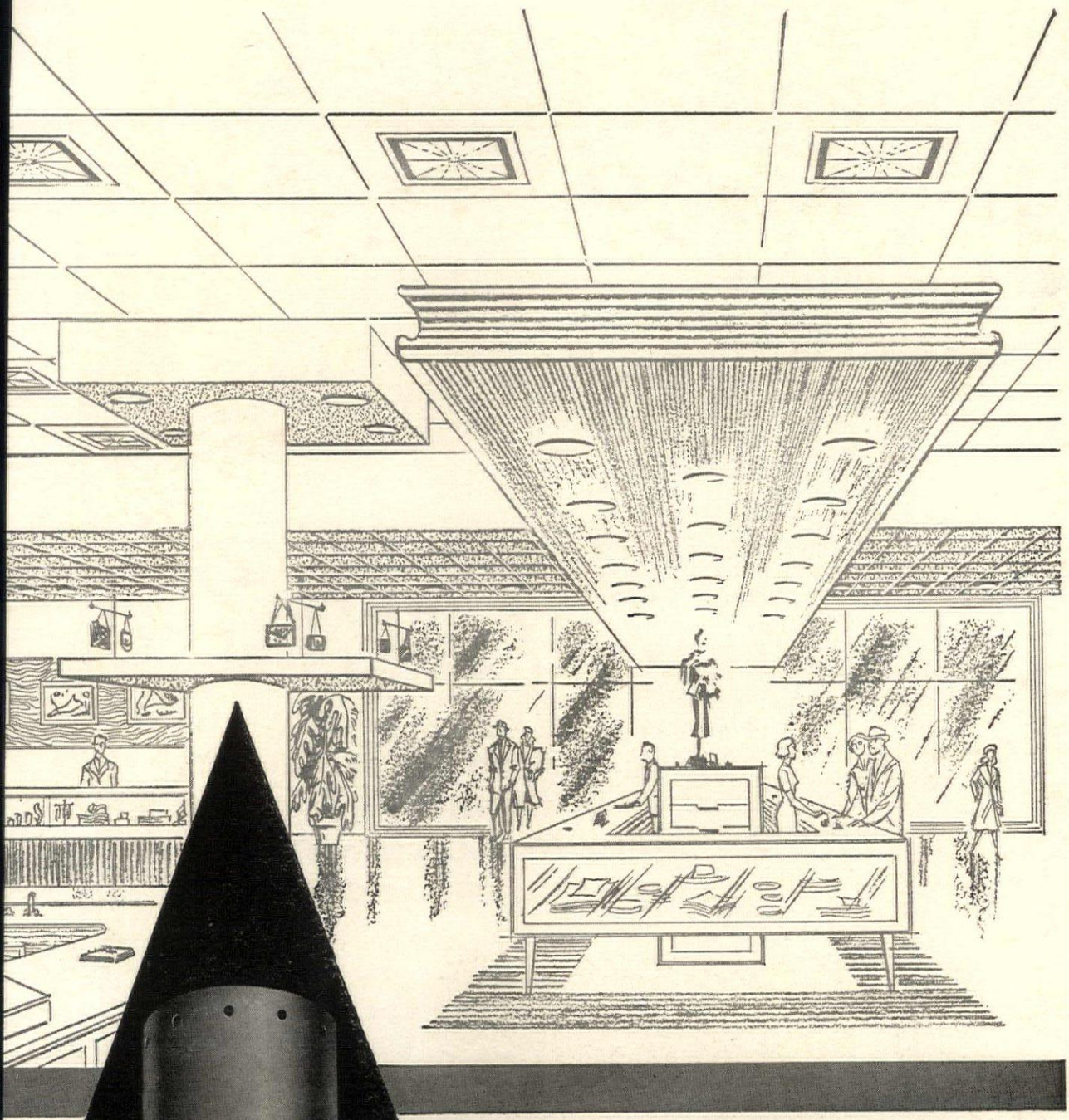
This merchandising pair combines to provide modern store lighting . . . making goods look better and sell faster.

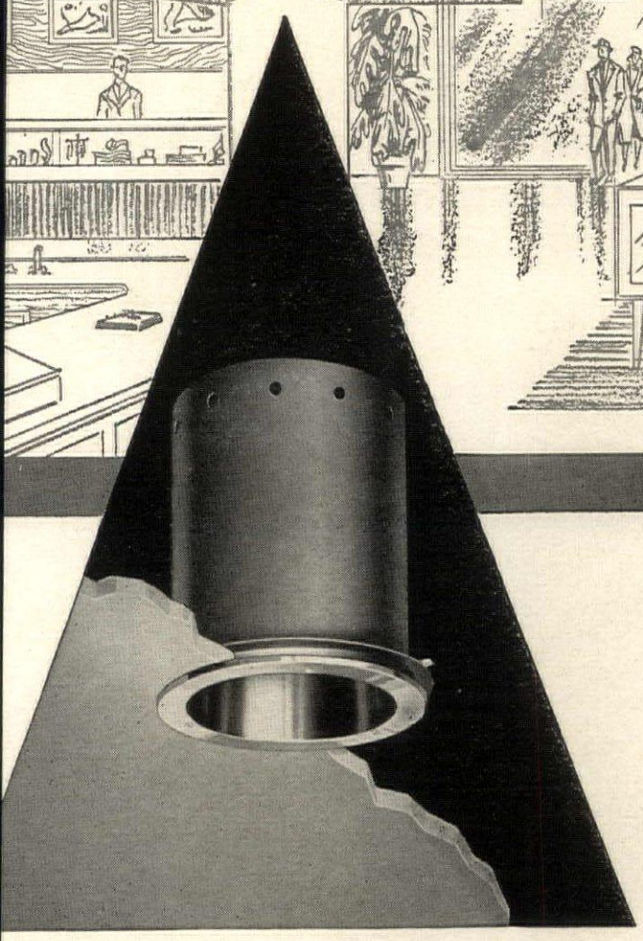
Here is sales-producing incandescent lighting at its best!



ELIPTISQUARE

Merchandise lighted with ELIPTISQUARE'S clear, prismatic Amcolens reflects its true color value. For general area lighting, advanced ELIPTISQUARE recessed a surface units provide highest light transmission efficiency.





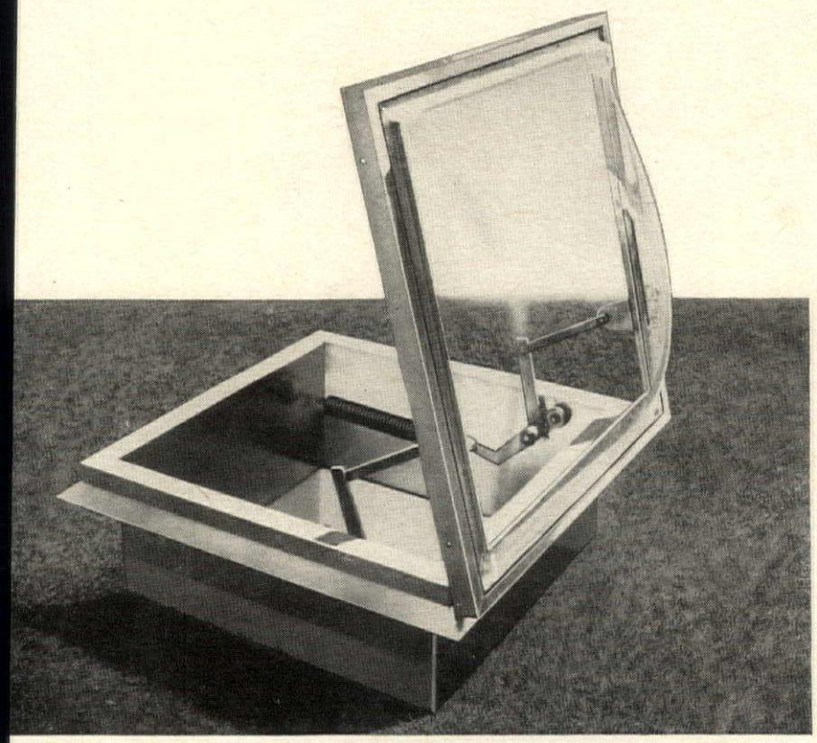
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EXCERPTS

Continued from p. 152

and is best done with a trained eye to recognize real and relative values, with experience and knowledge of physical techniques. Le-Corbusier says: "Architecture is the correct and magnificent play of forms brought together in light."

How to shut out noise

Sound control is more than a matter of decibels; it requires expert advice

Digest of remarks by William R. Farrell of Bolt, Beranek & Newman, acoustical consultants of Cambridge, before the Building Research Institute

The confusing term "decibel" should be clearly understood before attempting any study of noise control. Every source of noise has a noise spectrum. It may have large low-frequency noise components, it may have some pure tone components, and it may have high- or low-frequency components of energy.

The transmission loss through a partition is proportional to the product of the mass and the frequency. Therefore, if we are dealing with a ten-cycle sound, transmission loss of a given partition or a given mass of partition is relatively low. If we are dealing with a 10,000-cycle sound, that product and the resulting transmission loss will be relatively high.

Moreover, a pure-tone component can be more annoying than a broad band noise of the same level; also, high frequencies tend to be more annoying. In fact, the construction of our ears is such that we actually hear less at low frequency than at high.

Having determined the spectrum of the source, the next step is to determine what levels can be tolerated within the space. If we say this room should have a level of 35 db, the statement says practically nothing. What frequency do we mean? Do we mean 35 db? Or do we mean an over-all of 35 db? If we do mean an over-all sound-intensity level at all frequencies of 35 db, then maybe that refers only to energy at a level of around ten cycles, which is inaudible.

We might better establish a comfort criterion. Suppose we wish to create a rest area in a very noisy plant—a place where the workers can go and sit around and have a cigarette and where the levels are reduced to, say, 50 or 60 db.

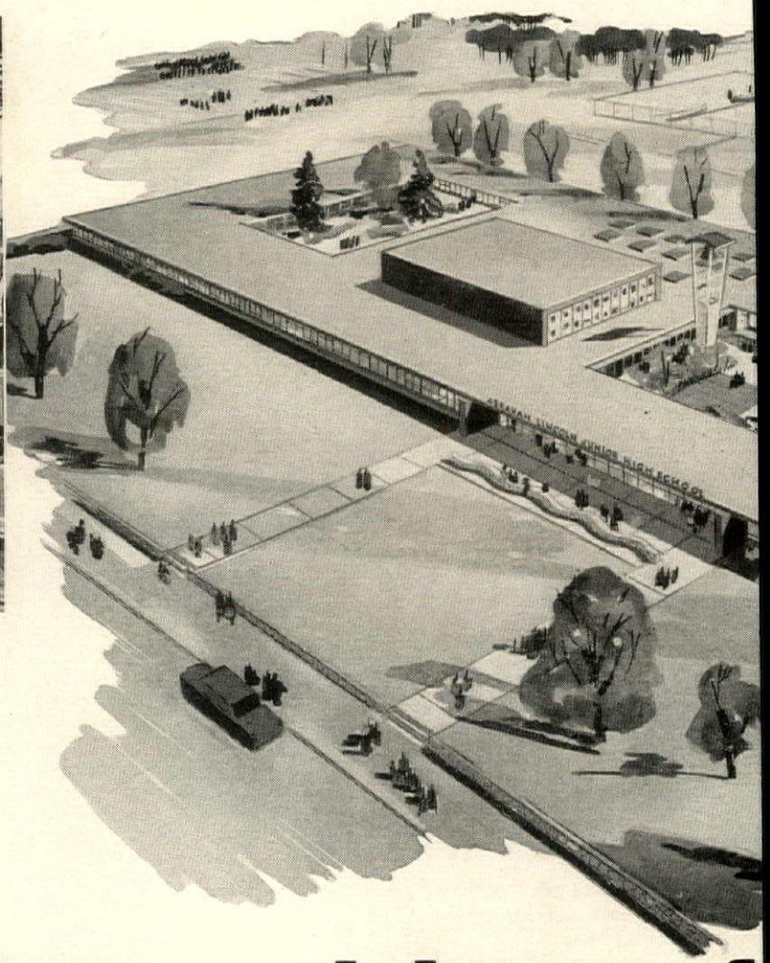
In this room we are concerned with speech criteria—communication. Here the effects of frequency are quite important, the voice range runs from about 400 cycles to 4,000 cycles, and if you can reduce levels just within this area you may appreciatively raise the speech intelligibility. Outside that area you can tolerate quite a bit of low-frequency energy with no disturbance.

Another type of criterion which is now becoming quite important is that of hearing loss. Most of the more critical enclosure design problems stem from this.

continued on p. 172

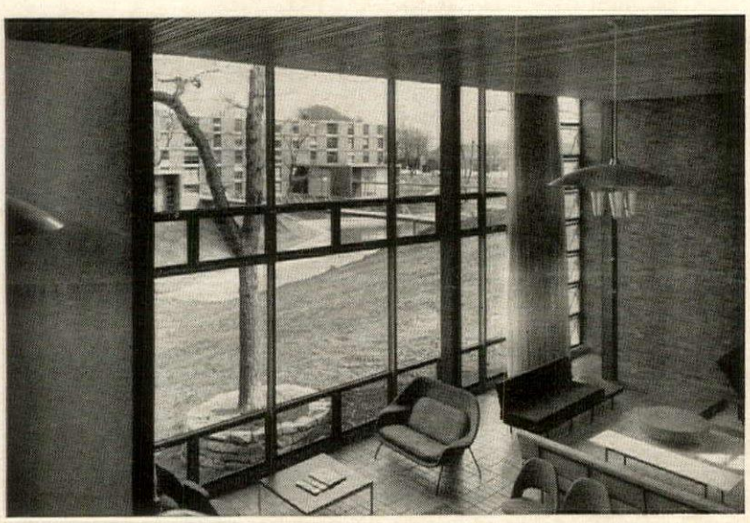


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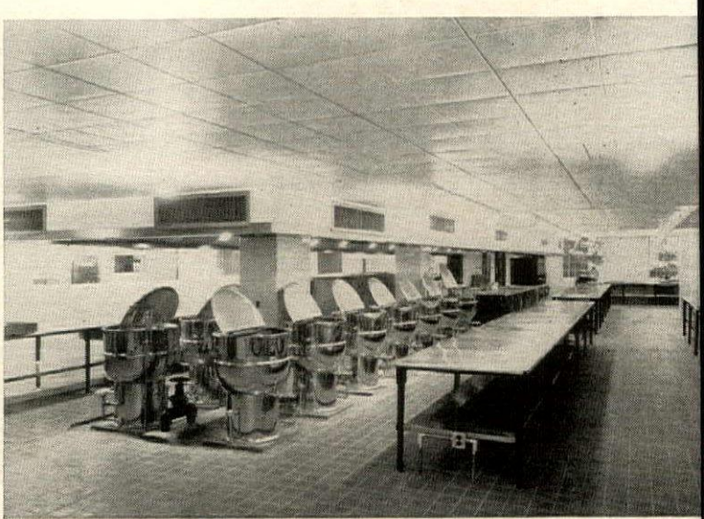


How to keep wiring saf

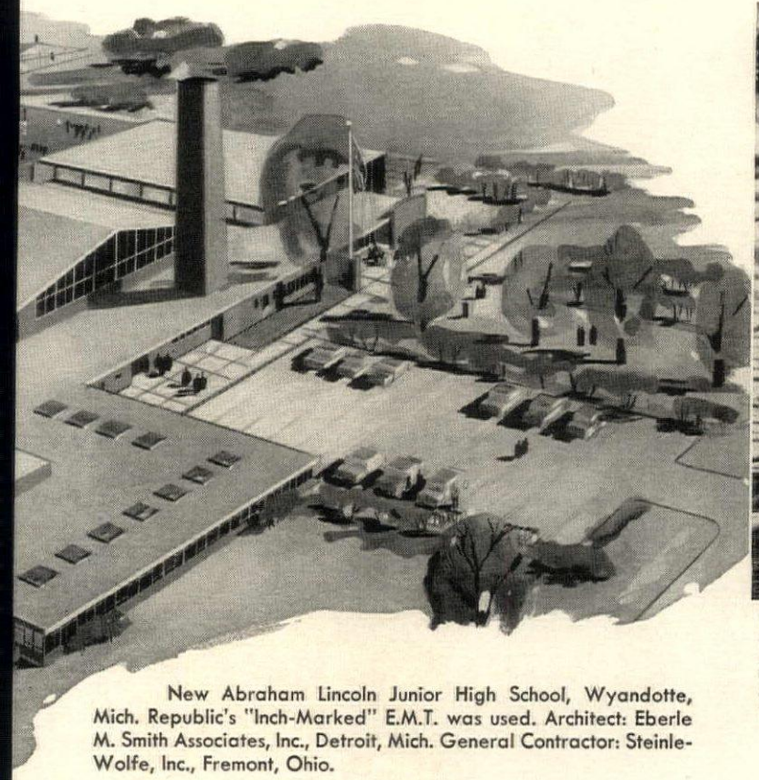
and costs down



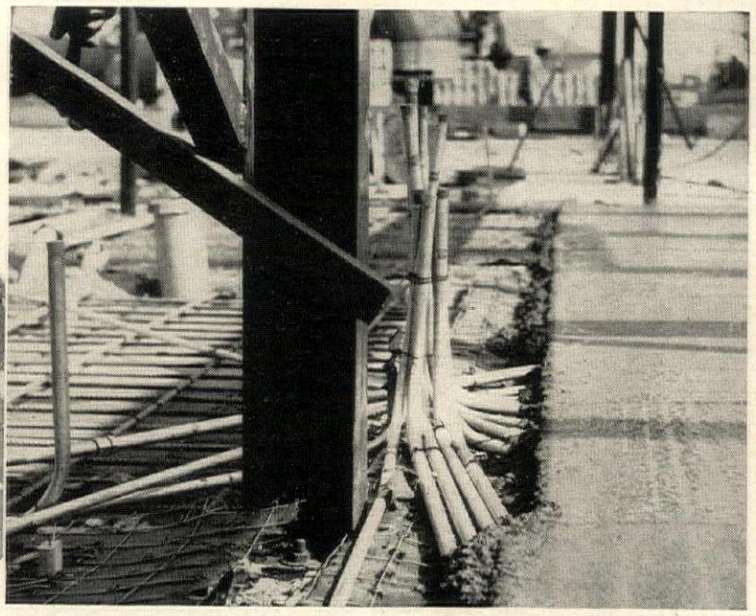
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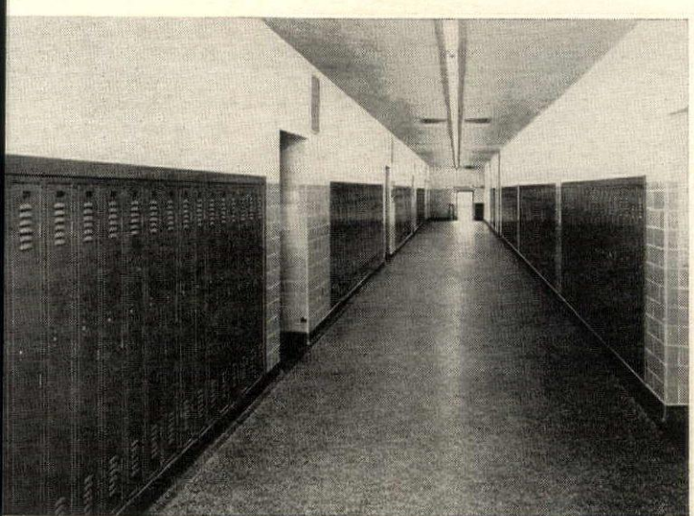
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EXCERPTS

Continued from p. 169

To select the partition material for this quiet room, the designer should take, in very rough terms, the source intensity and subtract from that the spectra of the criteria, and the result will be a spectrum of the desired transmission loss for the partition at all frequencies.

In all probability the low-frequency energy will be the most important characteristic. Not too low, perhaps down around 500 cycles. In order to get the transmission loss at the frequencies required or at the critical frequency, any material should have a certain mass, and it is simply a matter of determining, from an equation or a curve, what mass is required for a given number of decibels transmission loss for a given frequency. This wall should have absolutely, or as nearly as possible, no leaks. It should be of a nonporous material.

In modern factory construction we have continuous heating ducts or baseboard convectors; continuous lighting strips; continuous hung ceilings; paneled partitions. All of these are difficult to keep airtight.

This aspect of the problem can only be handled on the site. It is a question of very close supervision during construction. It can be partially handled in the architect's office through appropriate detailing and certainly the acoustic consultant should check details.

An architect lectures clients

Beware of the young designer who lacks discipline and the old one who treats modern as a style

Excerpts from a lecture delivered at McCoy College by Architect Alexander Cochran of Baltimore

A revolution in architectural design has left an almost chaotic situation. And you are the ones to lead us out—you clients who are our judges. This is your responsibility. You must seek out the practitioner. Through publications and visits you can cultivate your own sensibilities. You can read the professional architectural press and the national magazines and you can visit the work of your prospective architects.

The strong discipline of academic training had a great influence upon the architecture with which you and I grew up. In many ways it was a leveling influence, also. But this uniformity had scale, grace and dignity —qualities that are often too conspicuously absent from today's design.

As we rallied from the depression, new directions became clearer. With the resurgence of building after the last war, the struggle was virtually over. The controls, discipline and standards of stylistic architecture were off—and they are off now.

There are dangers in victory, in the collapse of opposition. The defeated are to be watched—those who, after a more or less dignified absention, try to join the victorious with a quick change of uniform, involving an abandonment of their own once hard-fought-for principles.

The profession cannot now but feel a relative scarcity of leadership. I am worried about the older men. Modern cannot be treated as a style. Let me ask you to think twice before you ask a traditional architect to leave his stylistic designing.

Good or even just adequate architects are made only by good training. If I am worried about the older traditionalist, I am even more worried about the young, incompletely trained practitioner who presents himself to you as the modern designer. How much he misses the disciplines of academic stylism!

Our architecture of today must be functional. But there are psychological functions as well as physical ones. We are building for man, and so human scale is all-important. We must control climate, but not have the climate controls control our design. We must use new materials, but not have the materials run away with our designs. We are housing people—and for them the most beautiful is none too great. Go to a good architect. The best is none too good.

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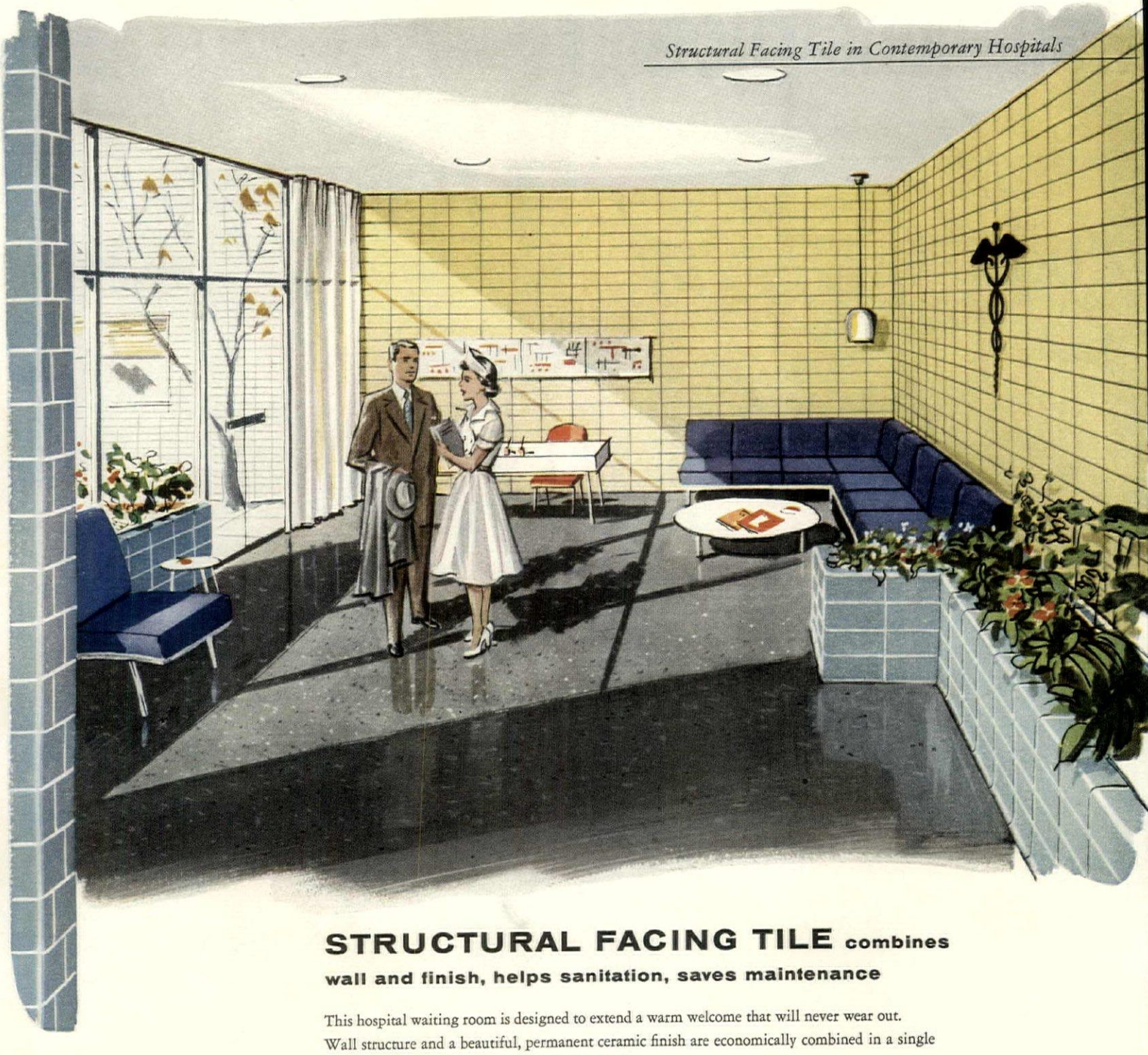
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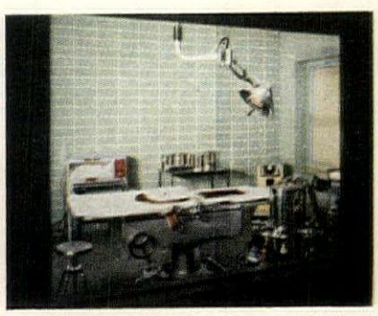
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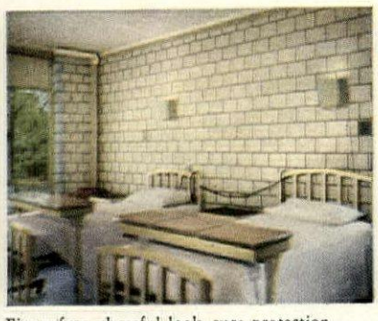
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Light green glazed Facing Tile is used in this delivery room both to aid sanitation and furnish a helpful background color for exacting visual tasks. Augustana Hospital, Chicago, Ill.; Schmidt, Garden and Erickson, architects.



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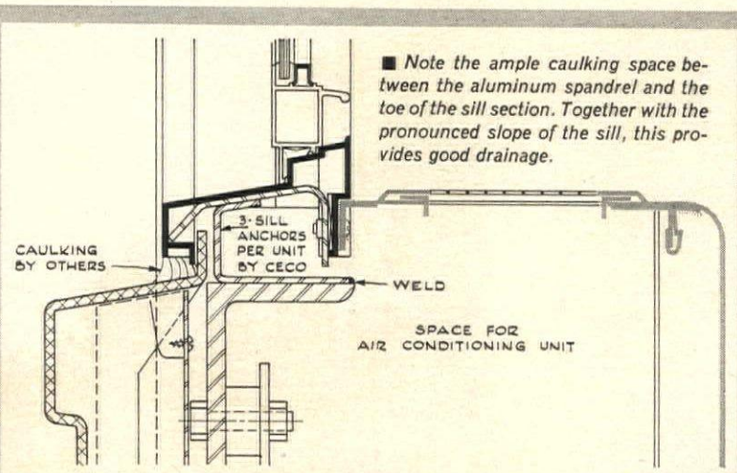
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Sinclair Building, Tulsa, Okla./Architect, Hugh R. Humphreys

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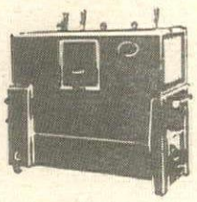


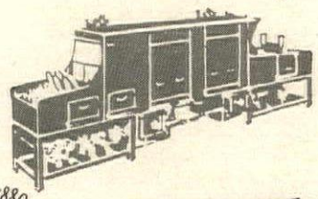
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ENGINEERING

Continued from p. 161

HIGH-VOLTAGE WIRING

Redesign of 20-story office building for 277-v. wiring saves $52,000 over conventional practice

Competitive bidding on both 208Y/120 v. and 480Y/277 v. has afforded a direct comparison between the costs of conventional and high-voltage wiring in the new 20-story Texas National Bank going up in Houston. Result: the new high-voltage wiring, which will distribute the building's 6,689 kva electrical load (6.2 va. per sq. ft.), will save $52,150, about $14.50 per kva or 5% of the $1,051,000 electrical contract. Reasons: reduced installation and distribution costs. The saving could be further improved to $24.30 per kva, 8% of the electrical contract, if no architectural changes had been required and if the building could have taken advantage of today's equal cost of 120-v. and 277-v. lighting fixtures (see below).

A conventional 208Y/120-v. layout (a four-wire, Y-connected distribution system having 208-v. line voltage and 120-v. phase voltage—AF, Aug. '52) had already been designed and bid for the $11 million, 563,000 sq. ft. building when the Houston Lighting & Power Co., after careful studies, offered 480Y/277-v. service to several networks in its area. The new building's electrical engineers were quick to spot the potential savings in such high-voltage service and prepared new electrical drawings and specifications for 480Y/277-v. distribution, using 480 v. for their power requirements, 277 v. for main fluorescent lighting circuits on each floor and 120-v. auxiliary circuits for desk lamps and office machinery obtained through four small 480/120-v. transformers per floor. The bidding that followed proved that high-voltage wiring was generally economical, but with certain limitations.

High-voltage wiring saved $115,700 . . .

- $75,000 on switchboards, risers, ducts and panels—equipment for the 208-v. system cost $245,000 vs. $170,000 for the 480-v. system;
- $36,500 on wiring and conduits—$104,300 for 208-v. materials vs. $69,200 for 480 v. plus a further saving of $5,800 in labor costs;
- $4,200 on boxes and cable supports—$15,200 for 208-v. equipment vs. $11,000 for 480 v. (because the 277-v. lighting circuits can each carry more electrical load, 4,300 w., and thus need fewer switches and returns than 120-v. circuits, whose maximum load is 1,800 w.);

. . . but cost $65,900 more

- $27,700 more for the 277-v. lamp ballasts, which each cost $1.40 more than 120-v. ballasts (volume production has now eliminated this premium);
- $27,100 more for 480/120-v. step-down transformers;

continued on p. 182

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Modernized H. J. Heinz service building demonstrates how to

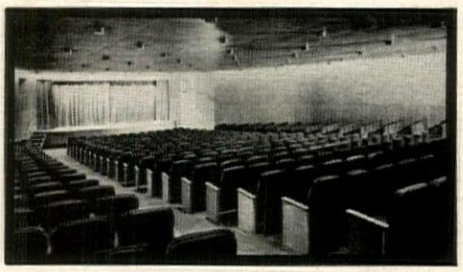
Give your clients Ideal Indoor Weather when they remodel

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

WHETHER your clients build new or remodel, the object is to provide the best possible facilities and working conditions.

Proper year-round temperature and humidity (Indoor Weather) go a long way to create better working conditions.

And the best way to assure this is to *install Honeywell Customized Temperature Control.*



Controls in the renovated Heinz auditorium help provide ideal Indoor Weather—no matter how large or small the gathering.

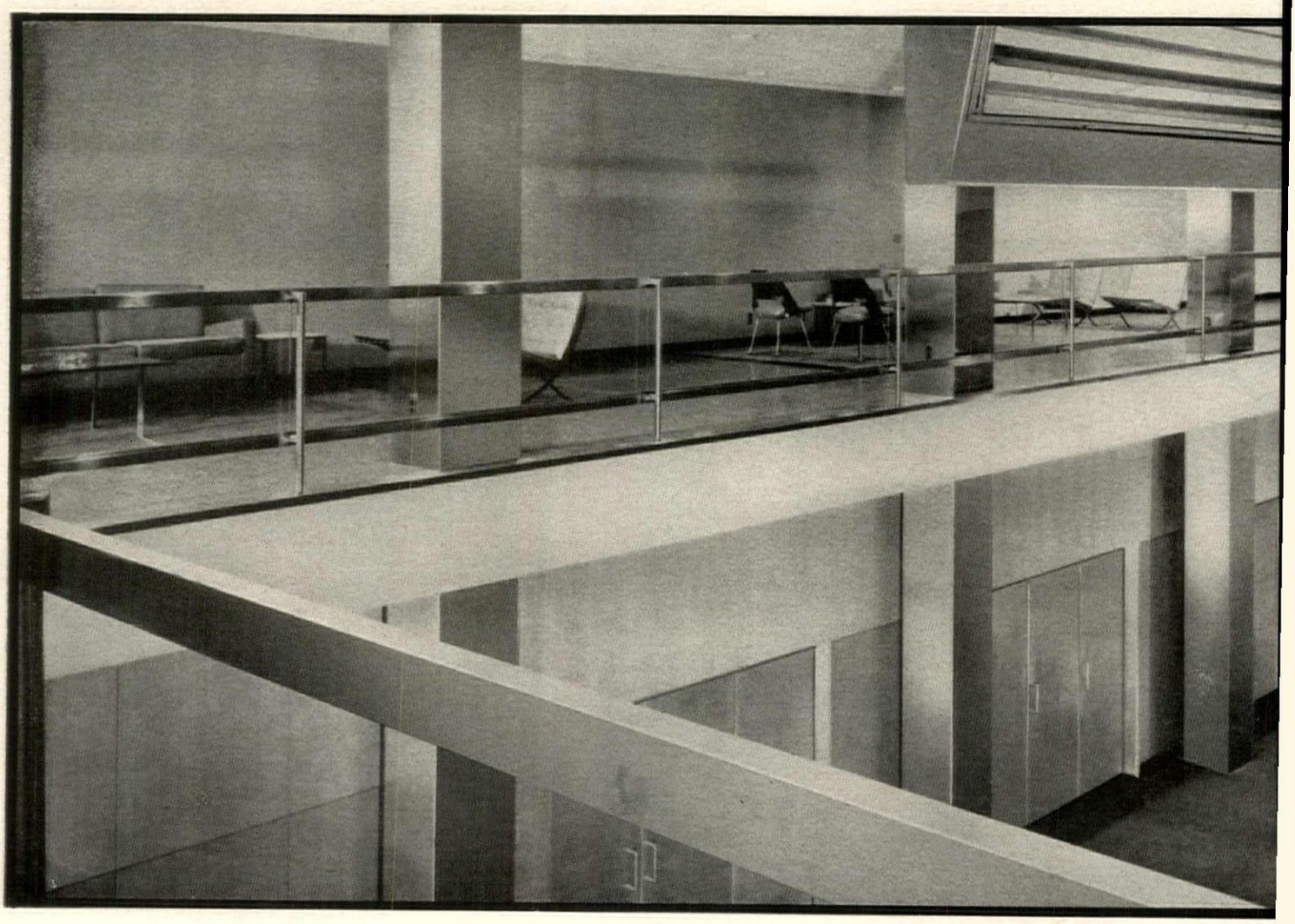
That's the big reason why the remodeled service building of the H. J. Heinz Company in Pittsburgh features it. The service building provides locker rooms where employees change clothes, an auditorium, cafeteria space and other "service" facilities.

In the control installation, Honeywell thermostats and humidistats control fan systems, heating and cooling coils and humidifiers—compensating for occupancy, exposure and use factors. More on these important factors will be found in the captions.

The *techniques* used in the Heinz service building, applied to your particular problems, can help you provide the Indoor Weather required for your clients' facilities—customized to their needs.

The key word here is "customized." It means that whatever your clients' control requirements, a Honeywell Customized Temperature Control installation *designed to fit the needs of the building and its occupants* is your answer. This applies not only to heating and cooling, ventilating and humidity control, but to industrial control as well.

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



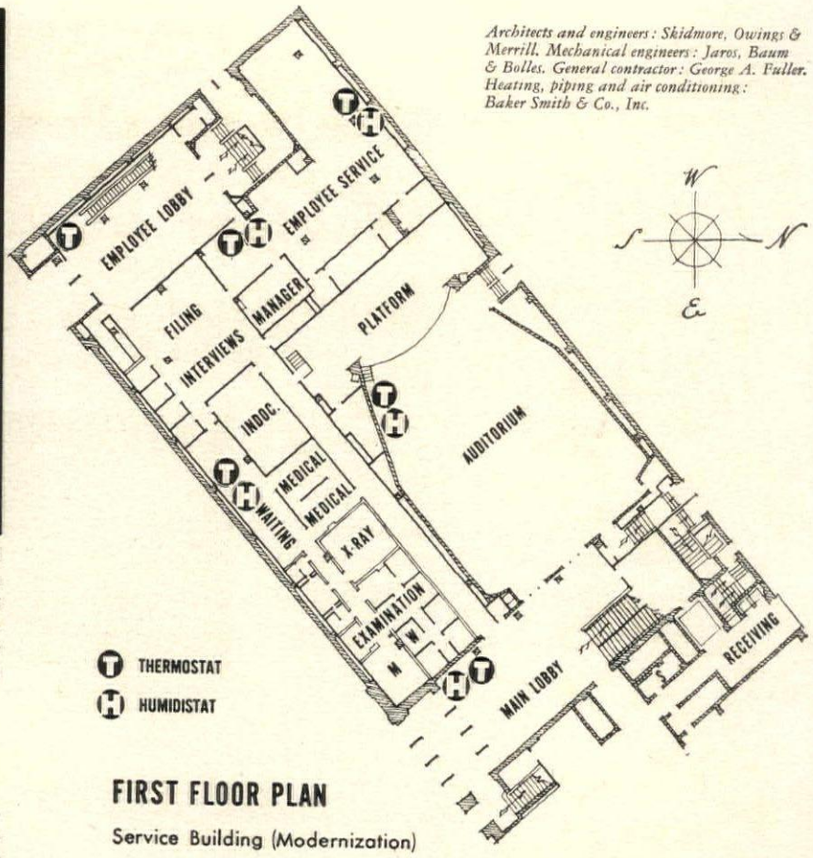


Occupancy. Separate thermostats in the cafeteria provide ideal comfort by calling for more heating or cooling—depending on the number of occupants. They also easily meet special comfort problems such as compensating for heat from steam tables. Separate thermostats, too, provide comfort in locker rooms where the internal cooling load may be raised by the influx of hundreds of people in a few minutes' time.

Exposure. Part of the reason why Honeywell Customized Temperature Control provides ideal comfort is its ability to compensate for exposure factors. Much of the wall space of the large lobby below has a northern exposure. Heat loss is therefore greater here than in other parts of the building. Yet strategically placed thermostats keep not only the lobby but every part of the building comfortable. Buildings in addition to the service building equipped with Honeywell Customized Temperature Control include the vinegar and office buildings.



Architects and engineers: Skidmore, Owings & Merrill. Mechanical engineers: Jaros, Baum & Bolles. General contractor: George A. Fuller. Heating, piping and air conditioning: Baker Smith & Co., Inc.



FIRST FLOOR PLAN

Service Building (Modernization)

For comfortable, even temperature in new or existing buildings—of any size—specify Honeywell Customized Temperature Control

Whether it's an office, motel, hospital, factory—any building of any size—new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems. You can give your clients more comfort and efficiency, and they'll save fuel, too.

For full facts on Honeywell Customized Temperature Control, call your local Honeywell office. Or mail the coupon today.

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Honeywell

Customized Temperature Control

112 offices across the nation

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. MB-2-16, Minneapolis 8, Minnesota

Gentlemen:

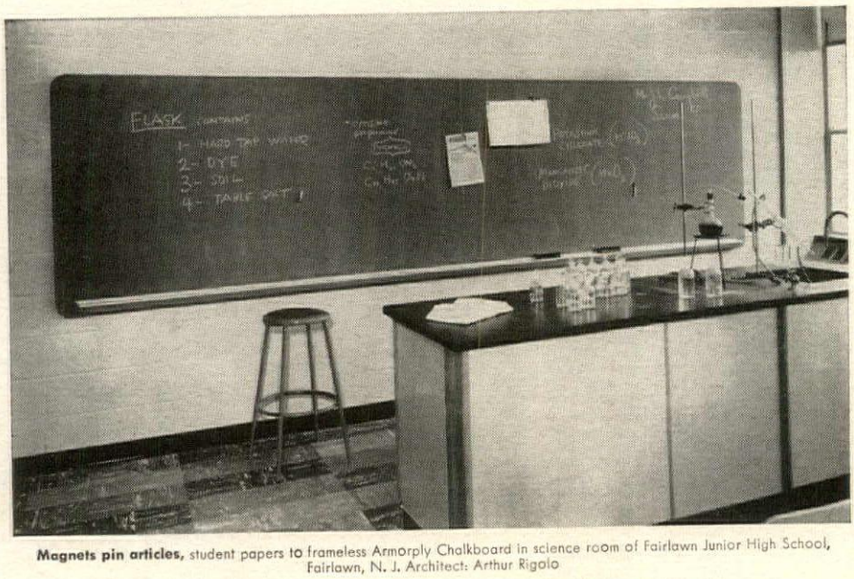
I'm interested in learning more about Honeywell Customized Temperature Control.

*Name*_____

*Firm Name*_____

*Address*_____

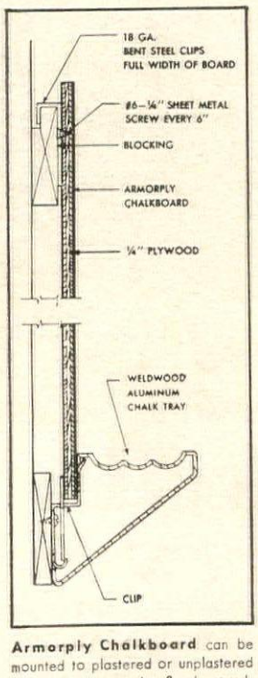
*City*_____ *Zone*____ *State*_____



Magnets pin articles, student papers to frameless Armorply Chalkboard in science room of Fairlawn Junior High School, Fairlawn, N. J. Architect: Arthur Rigolo

Frameless Armorply Chalkboard saves up to 30% in installation costs

It doubles as visual aid board . . . needs no maintenance . . . and it's guaranteed for life.



Armorply Chalkboard can be mounted to plastered or unplastered wall without expensive fixed grounds or other surface preparation.

Here's a way to slice chalkboard costs and achieve a clean, modern look at the same time. Specify Armorply Chalkboard—drawing shows cost-saving details. Best of all, you get a *superior* chalkboard—and here's why.

ITS SPECIAL SURFACE of porcelain-on-steel† opens up exciting new fields for visual aid devices. For example, special magnets can be used to show science classes exactly how chemical and physical reactions take place step-by-step.

NO REFINISHING—EVER. Armorply Chalkboard won't shatter, break, buckle or warp under impact, stress, temperature changes or concussion.

UNIQUE LIFETIME GUARANTEE. Armorply Chalkboard is *guaranteed for the life of the building in which it is installed!*

EYE-EASY green color gives maximum readability. And Armorply Chalkboard's reflectance factor is ideal: a report of the Illuminating Engineering Society and the AIA recommends a factor of between 15-20%. Tests by Electrical Testing Laboratories, Inc., show Armorply's reflectance is 18.5%.

ARMORPLY CHALKBOARD has many industrial applications, too. Specify it for shipping rooms, training departments, airline and bus passenger terminals, conference and board rooms, engineering departments—wherever the finest Chalkboard is wanted.

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Company.....

Address.....

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

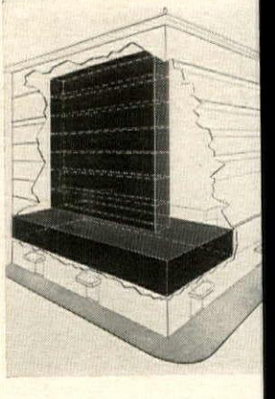
ENGINEERING

Continued from p. 178

▸ $11,100 more for miscellaneous work a equipment.

Total extra cost: $49,800. High-voltag controls for refrigerating machinery save another $4,800, offset by a charge of $2,45 for space and architectural changes, pr ducing a final saving of $52,150 for the 48 v. wiring.

This detailed analysis was made by W. W Henderson of Bernard Johnson & Ass ciates, electrical engineers for the ne building. The architect is Kenneth Fran heim.



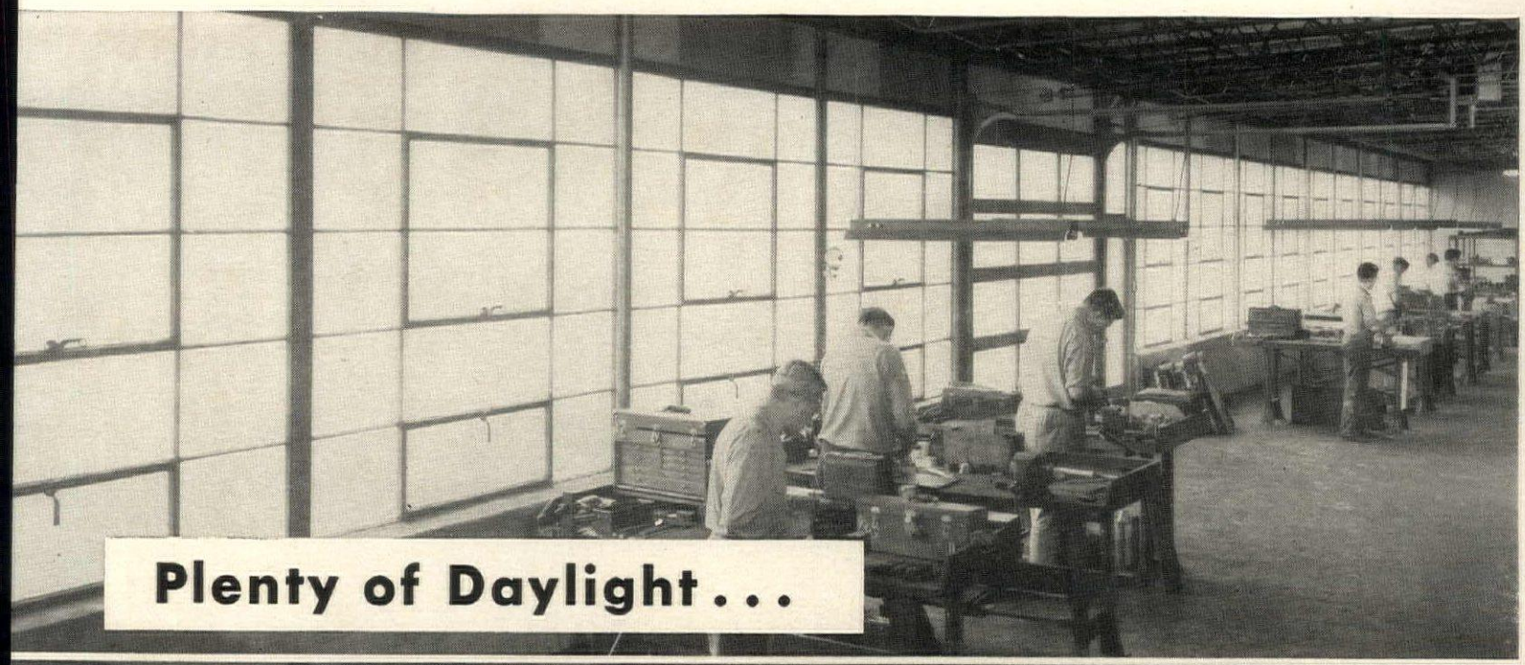
AIR CONDITIONING

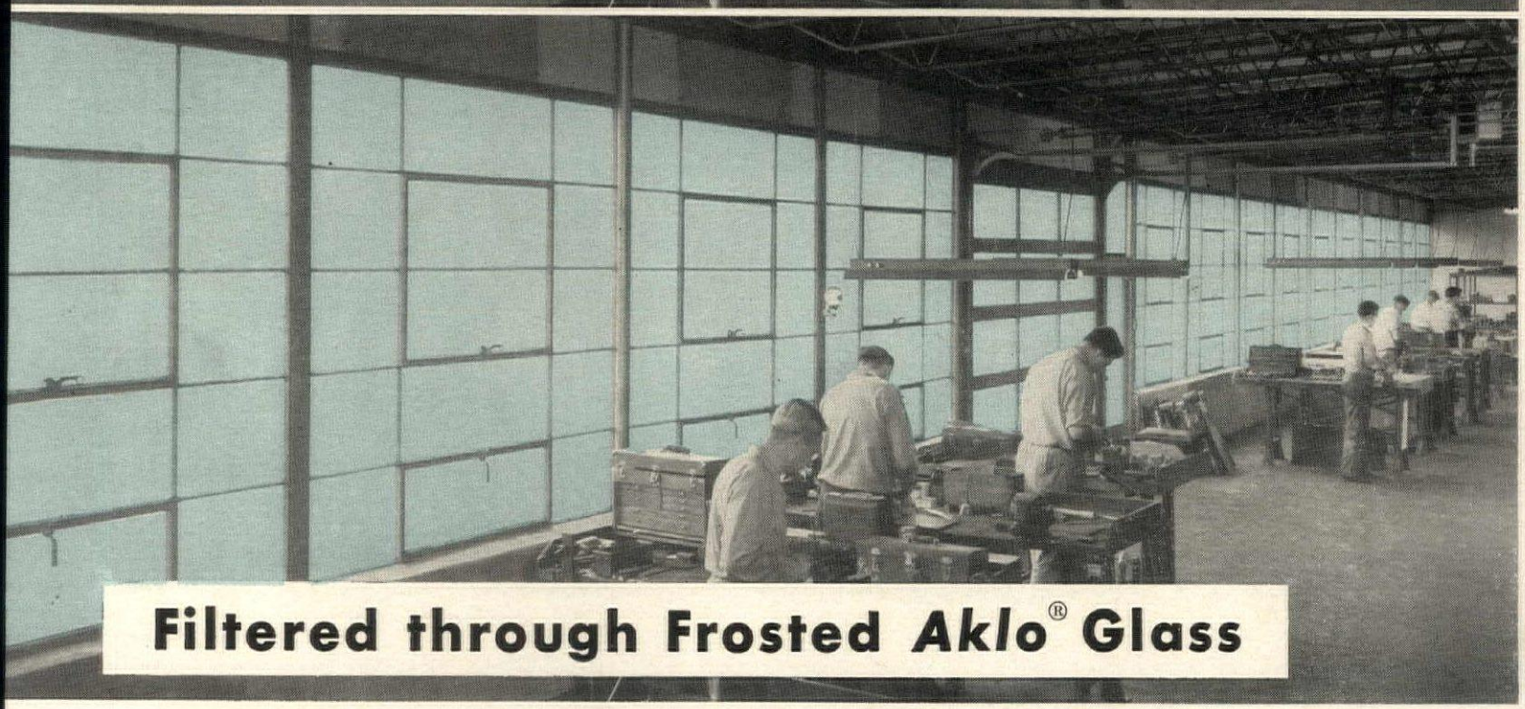
Modernization of old office buildin produces 29% increase in floor spac and better working conditions

Thanks to year-round air conditioning a new high-quality lighting, an entire mezz zine and seven 14′ x 65′ stories of a form light well were gained after modernizi of the 44-year-old Wachovia Bank & Tru Co. building in Winston-Salem, N.C. Th air conditioning cost $193,947, or $3 per s ft., including walling up the east, south a west sides of the building. This reduce the air-conditioning load by 25 tons and ma terially relieved air zoning problems.

Year-round air conditioning with fu humidity control is obtained by a centr system using fan rooms on each floor su plied by chilled water from a 220-ton r frigerating plant placed on a second-flo setback. On every floor ducts carry fres cooled air to five thermostat-controlled zon on each floor. Supply air comes direct fro the outside to each fan unit room set i the northwest corner of each floor. Exhau air is returned to fan rooms for exhaust recirculation as necessary.

The entire modernization program is e pected to take from 10 to 12 months, work ing on two floors at a time to give minimu disturbance to the bank staff. The desig is by E. S. Pollock, architectural consulta to the building service staff of the Wachov Bank & Trust Co. P. L. Davison is co sulting mechanical engineer, and Frank Blum & Co., general contractors.

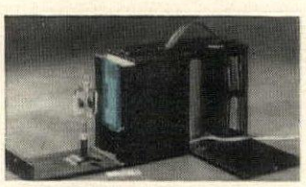




. . . best light for good workmanship

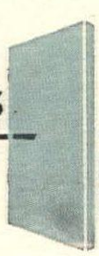
This blue-green glass softens and diffuses direct sunlight and sky brightness, as well as dazzling reflections from bright surroundings. Better seeing and better workmanship are natural results.

Aklo Glass cuts down sun heat, too. Used in ¼" thickness, it shuts out as much as 44% of the sun's radiant heat. Workers are more comfortable. Floor space close to windows is more usable.

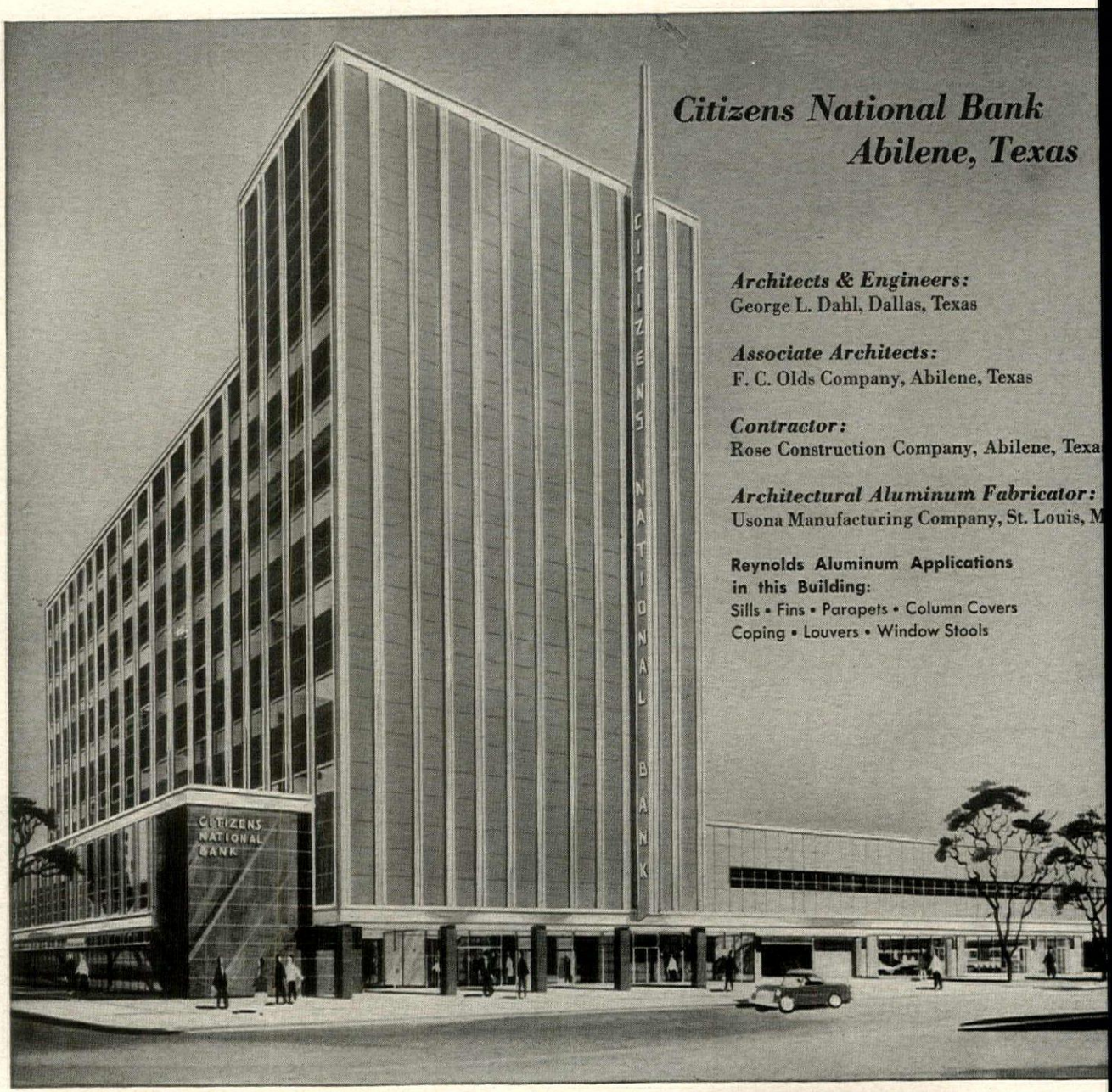


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A call will bring a radiometer demonstration kit to your desk. It shows you how *Aklo* Glass reduces glare and sun heat. Call your L·O·F Glass Distributor or Dealer—he's listed under "Glass" in the yellow pages of your phone book. Or write to Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

BLUE RIDGE
AKLO GLASS



FILTERS DAYLIGHT



Citizens National Bank
Abilene, Texas

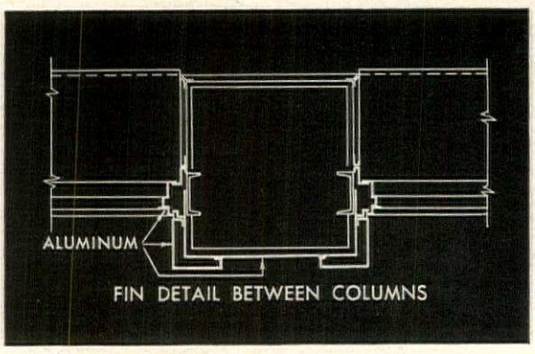
Architects & Engineers:
George L. Dahl, Dallas, Texas

Associate Architects:
F. C. Olds Company, Abilene, Texas

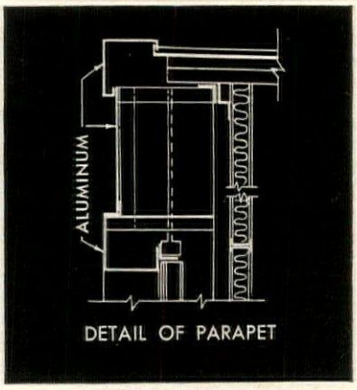
Contractor:
Rose Construction Company, Abilene, Texa

Architectural Aluminum Fabricator:
Usona Manufacturing Company, St. Louis, M

Reynolds Aluminum Applications in this Building:
Sills • Fins • Parapets • Column Covers
Coping • Louvers • Window Stools



FIN DETAIL BETWEEN COLUMNS



DETAIL OF PARAPET

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REYNOLDS

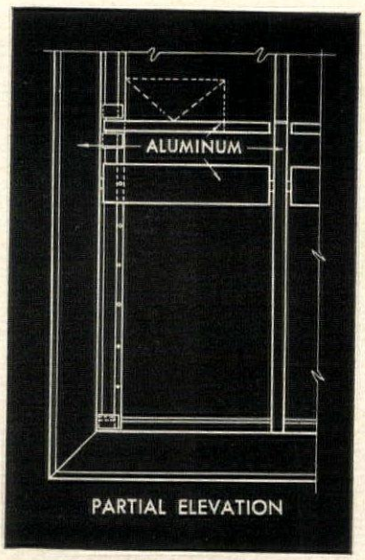
Dallas Public Library
Dallas, Texas

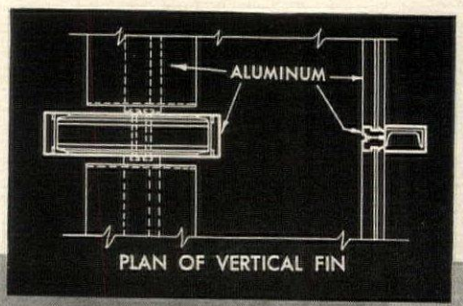
Architects & Engineers:
George L. Dahl, Dallas, Texas

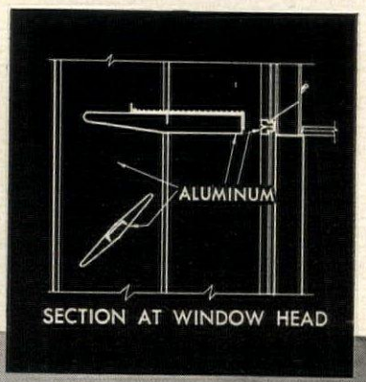
Contractor:
Robert E. McKee, El Paso, Texas

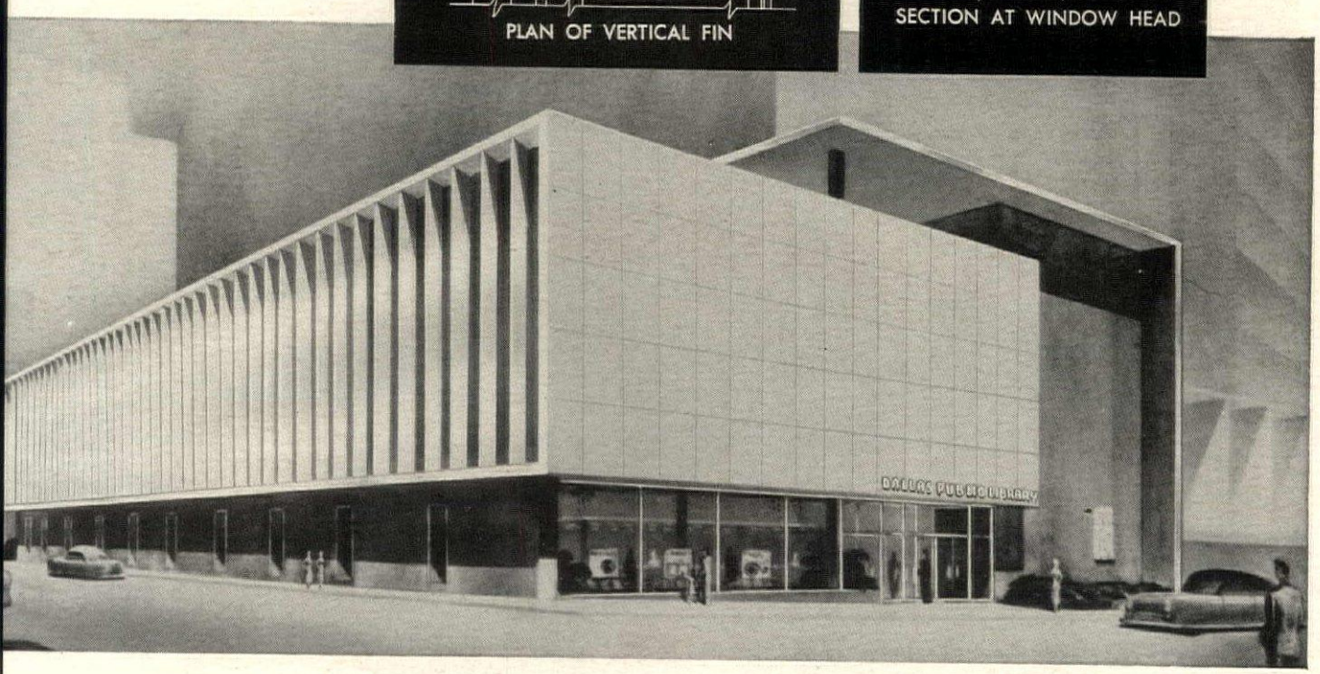
Architectural Aluminum Fabricator:
Usona Manufacturing Company, St. Louis, Mo.

Reynolds Aluminum Applications in this Building:
Copings • Facade Surround and Soffit • Vertical Fins
Cat Walks • Ladder • Sills • Head Jambs • Column Covers
Gravel Stop and Facia • Doors and Frames • Grilles • Louvers









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ALUMINUM

BOOKS

WALTER GROPIUS: Work and Teamwork. By S. Giedion. Published by Reinhold Publishing Co., 430 Park Ave., N.Y. 22, N.Y. 249 pp. 10¼" x 7¼". Illus. $10

In 1918 Henry van de Velde, the founder of the School of Arts and Crafts in Weimar, recommended that Walter Gropius succeed him as leader, and modern architectural education began. Gropius soon merged the school with the Weimar Academy of Fine Arts. Arts and crafts and fine arts together made the Bauhaus.

As a sketch of Gropius' great school and as a vehicle for some shrewd and admiring comments on its protagonist, this book has much to offer. For instance: "There is a curious intermingling in the personality of Walter Gropius. On one hand he is governed by sternly disciplined rational thinking, on the other he has an instinct for the line of future development that far transcends the logic of the moment. His actions repeatedly reflect his firmly held conviction [illegible] can be persuaded by reason to a[illegible] tions that have not yet been ac[illegible] their inner feelings.

". . . it will become evident how [illegible] again Gropius laboriously works [illegible] lems, whose solution he has ins[illegible] perceived in advance, by means of [illegible] exact calculations."

Another passage:

"Paul Klee (who joined the Bauha[illegible] in 1921) possessed the same pene[illegible] divining vision of complex structure[illegible] realm of the human spirit as Leona[illegible] Vinci in the realm of science. It [illegible] remarkable that so deeply intuitive ar[illegible] was able to stand the 'incessantly ex[illegible] atmosphere' of the Bauhaus almost th[illegible] out its existence. Certainly, followin[illegible] demands of his very being, he continu[illegible] keep himself apart and to take no pa[illegible] the Bauhaus' endless battle for exis[illegible] He just stayed on. Nevertheless, as Gr[illegible] has repeatedly affirmed, he was always[illegible] final moral arbiter of the Bauhaus.'"

But despite such excellent passages—[illegible] there are many of them—Giedion's new w[illegible] is more an outline and a notebook, [illegible] pictures, than a book about Walter G[illegible] pius—a man whom several generations h[illegible] found genuinely inspiring. Gropius is [illegible] to be met in this book by anyone who d[illegible] not already know him. Although there a[illegible] many photographs of his designs, he cann[illegible] be discovered in them as Corbu, Mies a[illegible] Wright can be seen in their work. He [illegible] something else. Giedion is zealous enough[illegible] only his preface is understated. But in hi[illegible] overorganized, too-sweet recitation, Giedion[illegible] who can be a vivid, moving writer, neglected[illegible] to paint a real picture of this vivid, emphatic[illegible] man, one of architecture's really important[illegible] leaders.

A GUIDE TO HOSPITAL BUILDING IN ONTARIO. By authority of Mackinnon Phillips, Ontario Minister of Health. University of Toronto Press, Toronto, Ont. 307 pp. 8" x 11½". Illus. $10

This book title is too modest. The government of Ontario has done a service here that should be appreciated and used by hospital people—and especially by architects—throughout the US too.

The work starts off with an advantage seldom enjoyed by texts on any building type. Every word, drawing and table was prepared specifically for this volume, instead of being partially assembled from previously published or handily available existing material. And since it also obviously had the benefit of a firm, consistent editorial hand, the result is a work that is up-to-date, logical, concise and easy to follow from beginning to end, and is also a handsome job of book design.

After short initial sections on such general hospital problems as organization for planning, master planning and landscaping, the problem of the hospital is treated department by department. Each department is covered by a written description of general consid-

continued on p. 190



TODAY'S SCHOOLS

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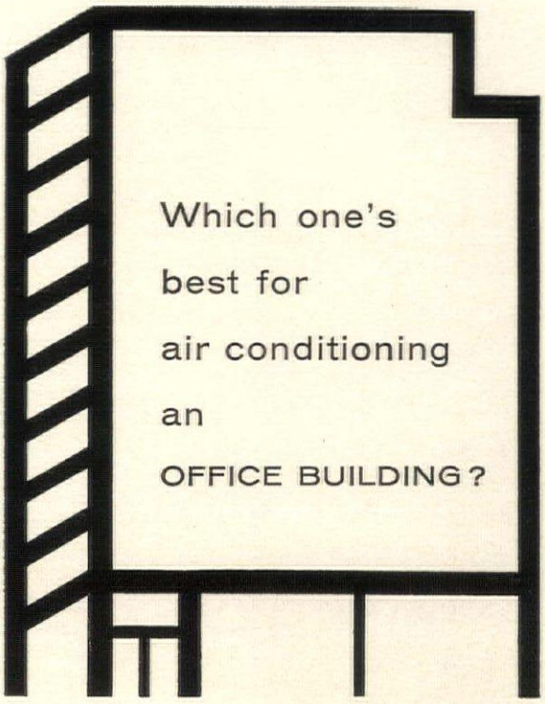
Please send the new folder describing the DUALARM System and its operation in today's schools.

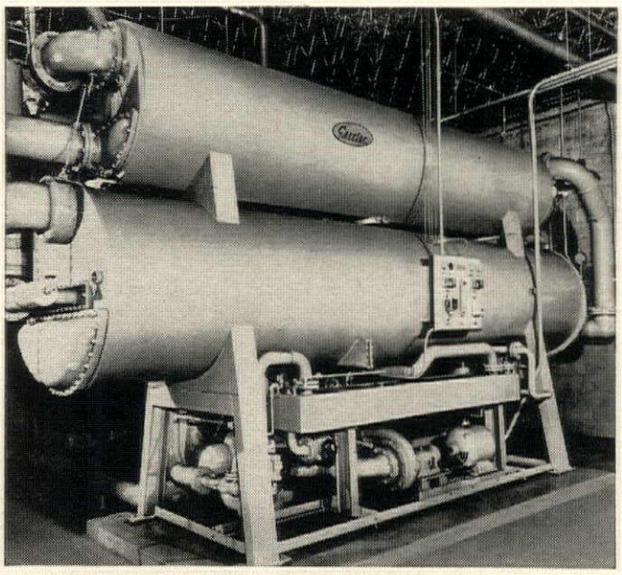
Name .....
(Please Print)

Firm Name .....

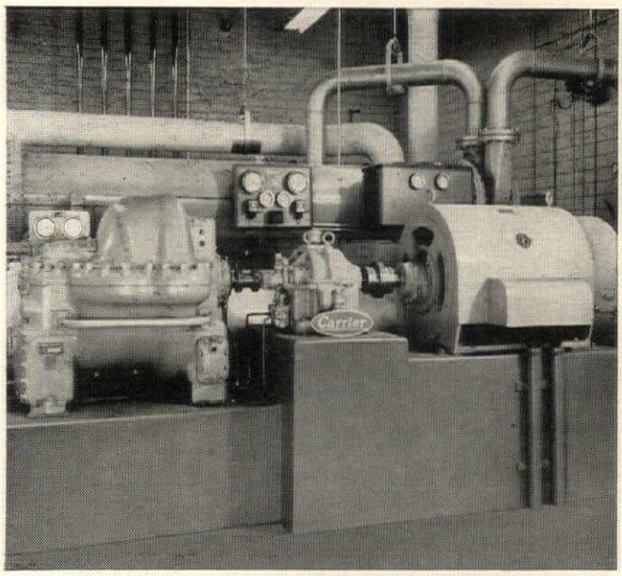
Address .....

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

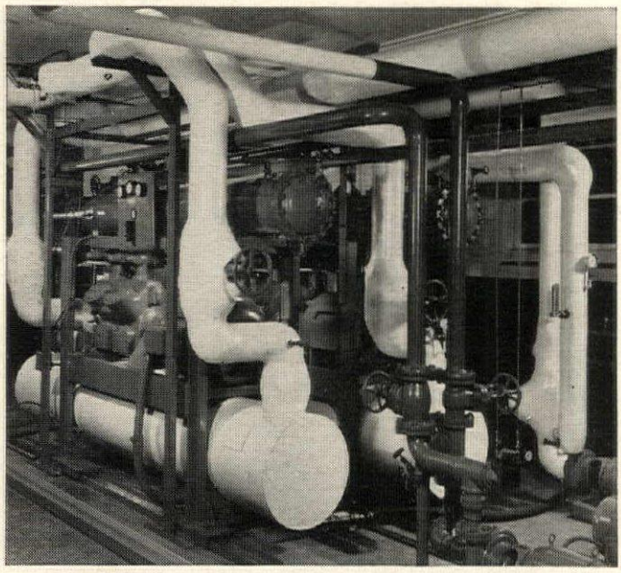




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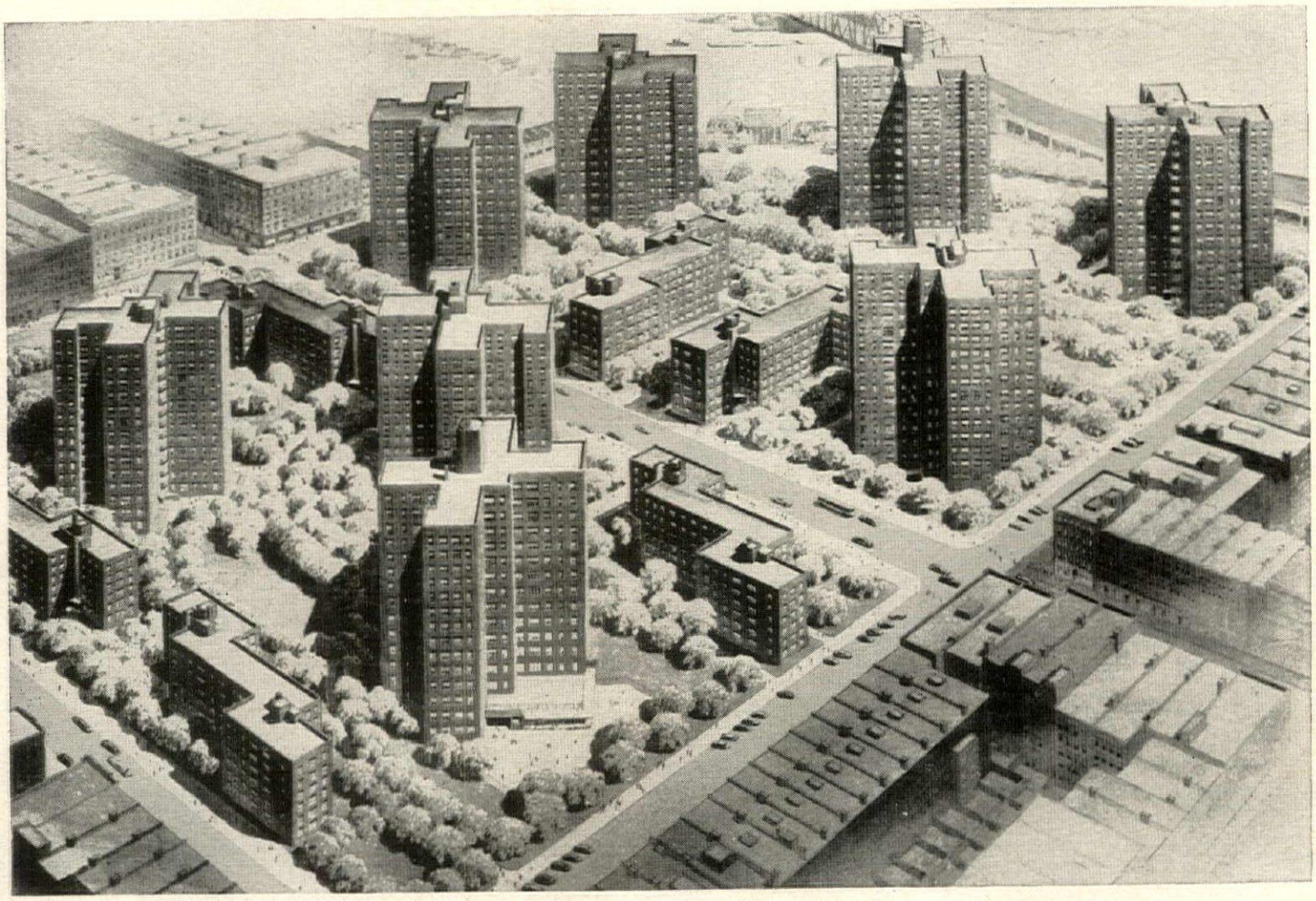
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Carrier air conditioning • refrigeration • industrial heating



1. Abraham Lincoln Houses

2. 100 Park Avenue



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Were Used In These Recer

First, Steeltex, the combination welded steel mesh with its own built-in pliable form attached, requires no additional forms or reinforcement for giving shape and strength to concrete floors and roofs (see note below right).

Second, Steeltex can be installed much faster than other types of forms and reinforcement for concrete floors.

Third, Steeltex saves concrete.

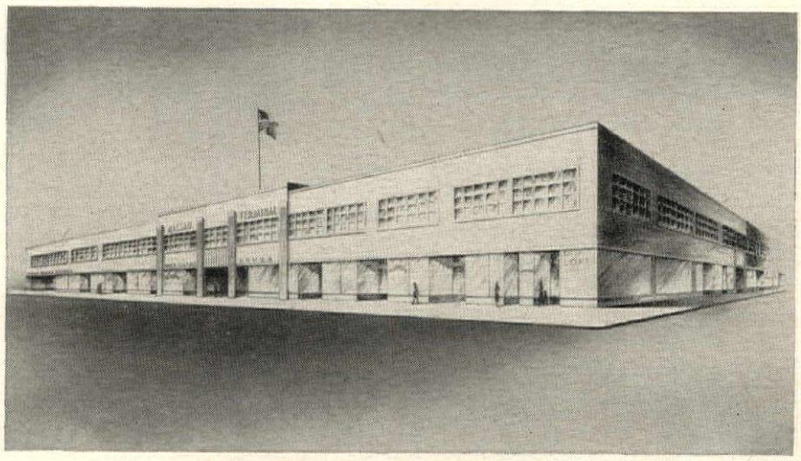
Fourth, Steeltex minimizes leakage,



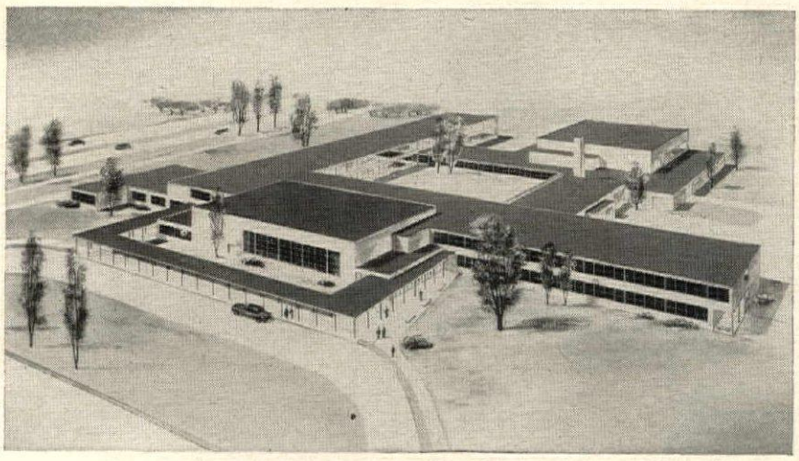
3. Franklin Simon Store



4. Immaculate Conception Convent



5. Nassau Terminal Building



6. Wantagh High School

eeltex® And Welded Wire Fabric

uildings In New York City

saves clean-up expense.

Fifth, Steeltex assures a strong floor.

Sixth, Steeltex costs less than other reinforcing materials and systems.

On these two pages are pictured $34.2-million worth of recent buildings in New York City and suburbs in which Steeltex or Pittsburgh welded wire fabric or both were used to reinforce concrete slabs.

For details . . . **read story at right.**

1. Abraham Lincoln Houses, New York City. *Architect:* Skidmore, Owings and Merrill—Tandy and Forbes; *Structural Consultant:* William Hoffberg; *Contractor:* H. R. H. Construction Corp. This is one of 75 housing projects built by the New York City Housing Authority, whose reputation for sound and economical construction has attracted nationwide attention. It was built at a cost of $14.2 million and consists of 14 buildings housing 1,286 families (total population over 5,000—larger than many towns). In all buildings Steeltex or Pittsburgh welded wire fabric was used for floor reinforcing.

2. 100 Park Avenue, New York City. *Architect:* Kahn & Jacobs, New York, N. Y.; *Consulting Engineer:* Jaros, Baum, and Bolles, New York, N. Y.; *Contractor:* George A. Fuller Company, New York, N. Y. Built at a cost of $15 million, the building incorporates Pittsburgh Steel Products Company's welded wire fabric reinforcing throughout the floors.

3. Franklin Simon Store, Garden City, Long Island. *Architect:* Herbert Beidler, Chicago, Ill.; *Contractor:* Andrew Weston, Inc., Woodmere, Long Island, N. Y. This is a typical example of the Franklin Simon chain of shopping stores incorporating Steeltex floor lath in floors and roof. Steeltex is used widely for construction of suburban stores of this type.

4. Convent of the Immaculate Conception, Jamaica Estates, Long Island. *Architect:* Charles M. Spindler, Brooklyn, N. Y.; *Contractor:* Caristo Construction Co., Brooklyn, N. Y. This $600,000 convent has just been completed. Its construction incorporates Steeltex floor lath over steel joists in floors and roof.

5. Nassau Terminal Building, Hempstead, New York. *Architect:* Harold Carlson, Garden City, N. Y.; *Contractor:* Marvin Construction Corp., New York City; *Contractor Supervision:* Fred T. Ley & Co., New York City. This bus terminal, containing 33 stores, over sixty thousand square feet of office space, twenty-four bowling alleys, and accommodating twenty-three buses at one time, was built at a cost of $1,500,000. Steeltex floor lath was used over steel joists in the floors and roof.

6. Wantagh High School, Wantagh, Long Island. *Architect:* Frederic P. Wiedersum, Valley Stream, N. Y.; *Contractor:* Jonwal Construction Company, Inc., Mineola, N. Y. This Long Island high school, built at a cost of $2.5 million, was completed last fall. Steeltex floor lath was used over steel joists in the floors and roof.



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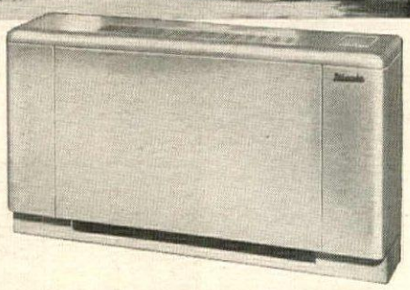
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BOOKS

Continued from p. 186

erations, location and components; by a ta of typical square-foot requirements for e component in hospitals of various sizes, a by a diagrammatic sample scheme.

Prototype schemes for entire hospitals for groupings of departments are delib ately omitted on the ground that "the ex ence of such plans has been largely resp sible for the retarding of progressive desig in fields where they have been used. "Ev hospital must be taken to be a special pr ect for a particular community and a par ular site, and a stock plan for even 50 b could only, by a miracle, achieve those fu tions."

Among the book's most rewarding aspe are its wealth of clear, direct-to-the-po comments on such questions as ceili heights, color and cost comparisons. Onl minute portion of the comment and fact material is specific to Canada.

While this is a government-sponsored te editorial responsibility was given to a co mittee consisting of nongovernmental Arc tects Eric R. Arthur (chairman), Douglas Catto and John B. Parkin, Consultant Harvey Agnew and Dr. Karl E. Hollis, w in turn drew information from a wide ran of specialists.

PLANNING TOMORROW'S SECONDARY SCHOO

Published by The School Planning Laborato School of Education, Stanford University, St ford, Calif. 64 pp. 11" x 8½". Illus. Sin copies, $4. Quantities of 25 or more, $3.50

The Stanford School of Education Conf ence on School Planning, held in the summ of 1954, was to assist American seconda school leaders. The purpose of this publi tion is to share the thinking of those w attended the conference with others who a facing school planning programs.

THE LESSON OF JAPANESE ARCHITECTURE.

Jiro Harada. Published by Charles T. Branf Co., 551 Boylston St., Boston 16, Mass. 192 8½" x 11½". Illus. $6.50

This book first appeared in 1936 when brought refreshing ideas to the notice US architects. Many of these ideas are n reflected in the contemporary architectu of the Western World. Examples: 1) T architectural tradition of Japan is bas upon a module—the mat. 2) The Japane have always realized the importance a effectiveness of light and space and strength of form and beauty of materi 3) They are skilled in relating the house a its surroundings, thus avoiding ugliness a incongruity.

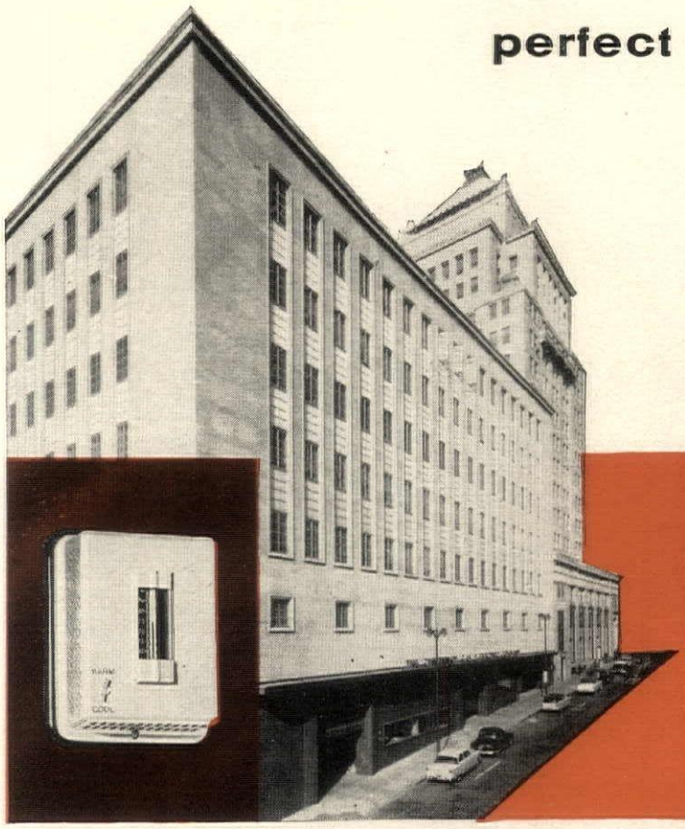
The author is attached to the Tokyo N tional Museum. He has made a speci study of Japanese architecture in relati to that of Europe and America, and is w known on both continents as a lecturer a author.

This new edition of his book has be restyled, some new illustrations have be included and a few notes have been add to bring it up-to-date.

continued on p. 1

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Conditioned air for the perimeter of the building is supplied by Carrier Weathermaster units controlled by Johnson Heating-Cooling Thermostats and Water Valves. Other thermostats control a ceiling system supplying conditioned air to the interior areas.



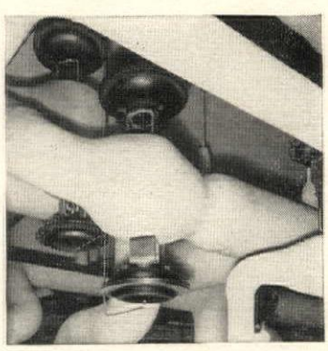
Inside this duct Johnson Damper Operators and Dampers insure precision control of the minimum and maximum outdoor air supply for Weathermaster units throughout the building.

Addition to The Cincinnati Gas & Electric Company, Cincinnati, Ohio. The Union Central Life Insurance Company, owner. The Cincinnati Gas & Electric Company, lessee. Harry Hake & Harry Hake, Jr., architects; James E. Allan, mechanical engineer; Frank Messer & Sons, Inc., general contractor; Peck-Hannaford & Briggs, heating, ventilating and air conditioning contractors, all of Cincinnati.

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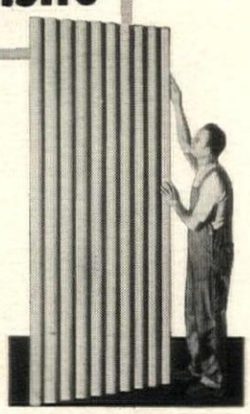
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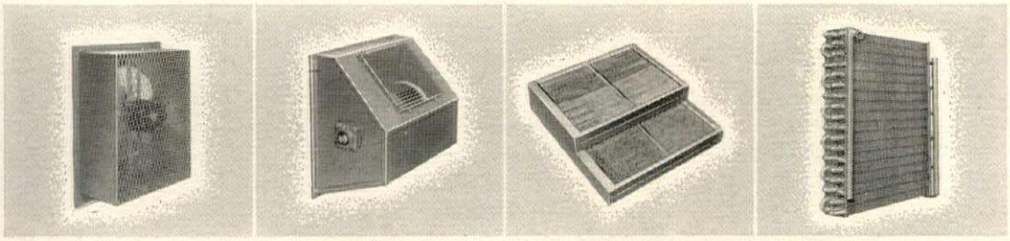
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Complete standardization of parts permits a 4-way flexibility never before available. With copper coil installed it's an evaporative condenser. Substitute the copper decking and it's a cooling tower. And either type of unit can be arranged with blower fan or propeller fan assembly.

Cooling tower or evap, you'll be amazed at the compact size of these Bush units. Arranged as the CDT cooling tower or IEC evaporative condenser, shallow depth of all copper decking or all copper Inner-Fin coil provides high capacity with minimum bulk. Reduced static pressure and low fan horsepower assure quiet, economical operation.

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Request Bush Bulletin #830, containing complete information and specifications.



Propeller fan can be used on unit arranged as either cooling tower or evap.

Blower fan can be used on unit arranged as either cooling tower or evap.

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With ALL COPPER Inner-Fin coil installed, unit is an evap.

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BOOKS

Continued from p. 190

PROCEEDINGS OF A CONFERENCE ON THIN C CRETE SHELLS—at Massachusetts Institut Technology, Cambridge, Mass., June 21-23, —a report. 134 pp. 8½" x 11". Illus. $5

A conference on thin concrete shells held at MIT last June (AF, Aug. ' Sponsored jointly by the Department Architecture and the Department of C and Sanitary Engineering, the confere had as its purposes the stimulation interest in thin concrete shells and the p vision of an opportunity for exchang ideas and reviewing recent developments this field.

One day was devoted to each of the foll ing: architecture, structural analysis design, construction.

The proceedings have been compiled make available a written record of papers presented, in some instances p mitting more detailed treatment than possible in the limited time allotted to e speaker.

BUILD YOUR OWN SUMMER CAMP OR CA By Jeffrey Livingstone. Published by McGr Hill Book Co., Inc., 330 W. 42nd St., New Y 36, N.Y. 152 pp. 9" x 8". Illus. $4.50

Although written for the layman, Livi stone's book may well interest his fell architects. It starts off with plans specifications for ten cottages, ranging fr a simple, basic cabin of 1½ rooms to m elaborate camps and cabins. For each these structures, the dimensional floor pla the various outside elevations, the foun tion plans, structural and finishing deta and the finished cottages are illustrat Additional construction information and list of necessary materials are also giv

Following these ten cottages is a portfo of plans and photographs of summer pla that have already been built.

The author is a consulting architect a a one-time editor of *Architectural Record*.

MECHANICAL AND ELECTRICAL EQUIPMENT F BUILDINGS. Third Edition. By Gay, Fawc & McGuinness. Published by John Wiley & So Inc., 440 Fourth Ave., New York 16, N.Y. pp. 5½" x 8¾". Illus. $8.50

Claimed to be the only comprehensive wo of its kind, this greatly up-dated textbo (originally published in 1935) covers t design, specifications, installation, operati and maintenance of machinery in building The authors include acoustical equipment their definition of mechanical equipment.

RADIANT HEATING. Second Edition. By Richa W. Shoemaker. Published by McGraw-Hill Bo Co., 330 W. 42nd St., New York 36, N. Y. pp. 6¼" x 9¼". Illus. $7

Practical planning and construction help how to design and install radiant heati systems in all types of structures.

continued on p. 1

CODE REQUIREMENTS *for cleanouts are seldom more than* MINIMUM REQUIREMENTS *... leaving clients vulnerable to repeated unnecessary expense*

Day-to-day cost of maintaining buildings can become a very large item if gaining access to drainage-line stoppages requires destruction of fittings, walls or floors. Lack of sufficient accesses and use of cleanouts which merely meet code requirements are the causes of such needless expense. As anyone who has ever tried to remove one knows, ordinary "cleanout plugs" freeze immovably in a matter of months. SUPREMO PERFECT SEAL CLEANOUTS will *always* provide quick, sure access and positive re-sealing, whether the installation is two months or twenty years old.

Code requirements can be hazardous in the matter of *cleanout location*, as well. Every building drainage plan presents a new set of potential "trouble zones". Provide SUPREMO PERFECT SEAL CLEANOUT access not only at the usual 50-foot intervals, but at every foreseeable trouble zone. It is a client obligation, which, if observed, will pay dividends for years to come.

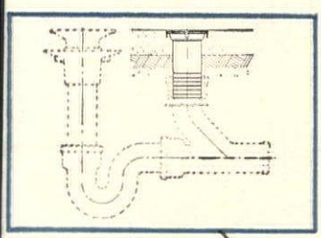
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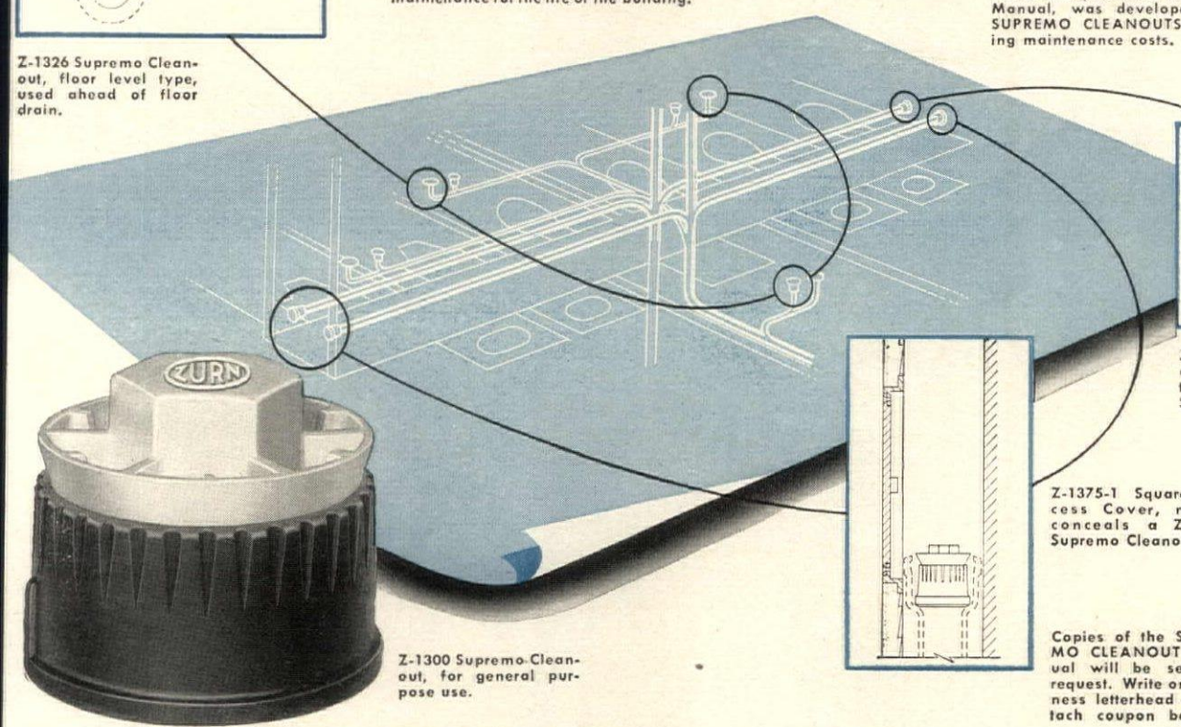
.... EXCEED CODE REQUIREMENTS — PROVIDE SURE, QUICK NON-DESTRUCTIVE ACCESS TO DRAINAGE LINES WHENEVER IT IS NEEDED!

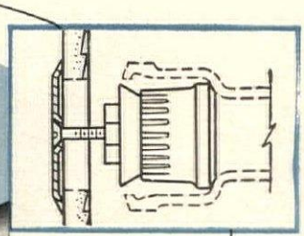


Z-1326 Supremo Cleanout, floor level type, used ahead of floor drain.

Isometric drawing of typical rest room drainage lines. Supremo Cleanouts installed ahead of changes in direction of flow and at upper terminals of horizontal lines assure low cost of maintenance for the life of the building.

WHERE SHOULD CLEANOUT ACCESS BE LOCATED? Below, in isometric view, is a drainage plan for a typical rest room, conceived to illustrate the use of various SUPREMO PERFECT SEAL CLEANOUTS. This plan, one of several presented in the new SUPREMO CLEANOUT Manual, was developed to suggest ways in which SUPREMO CLEANOUTS can be used to reduce building maintenance costs.





Z-1370-2, Round Access Cover, used here to conceal a Z-1300 Supremo Cleanout.

Z-1375-1 Square Access Cover, neatly conceals a Z-1300 Supremo Cleanout.

Z-1300 Supremo Cleanout, for general purpose use.

Copies of the SUPREMO CLEANOUT Manual will be sent on request. Write on business letterhead or attach coupon below.



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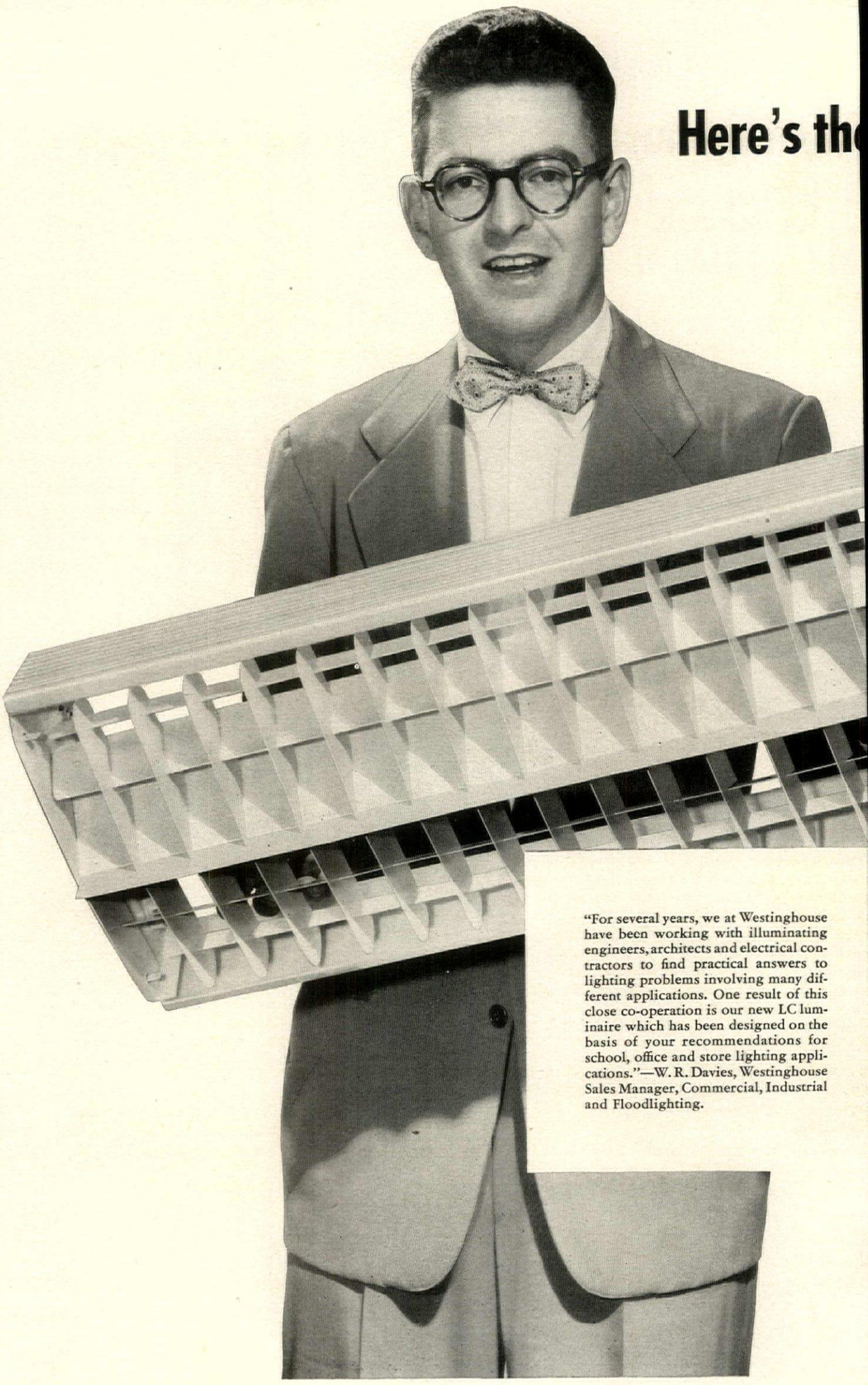


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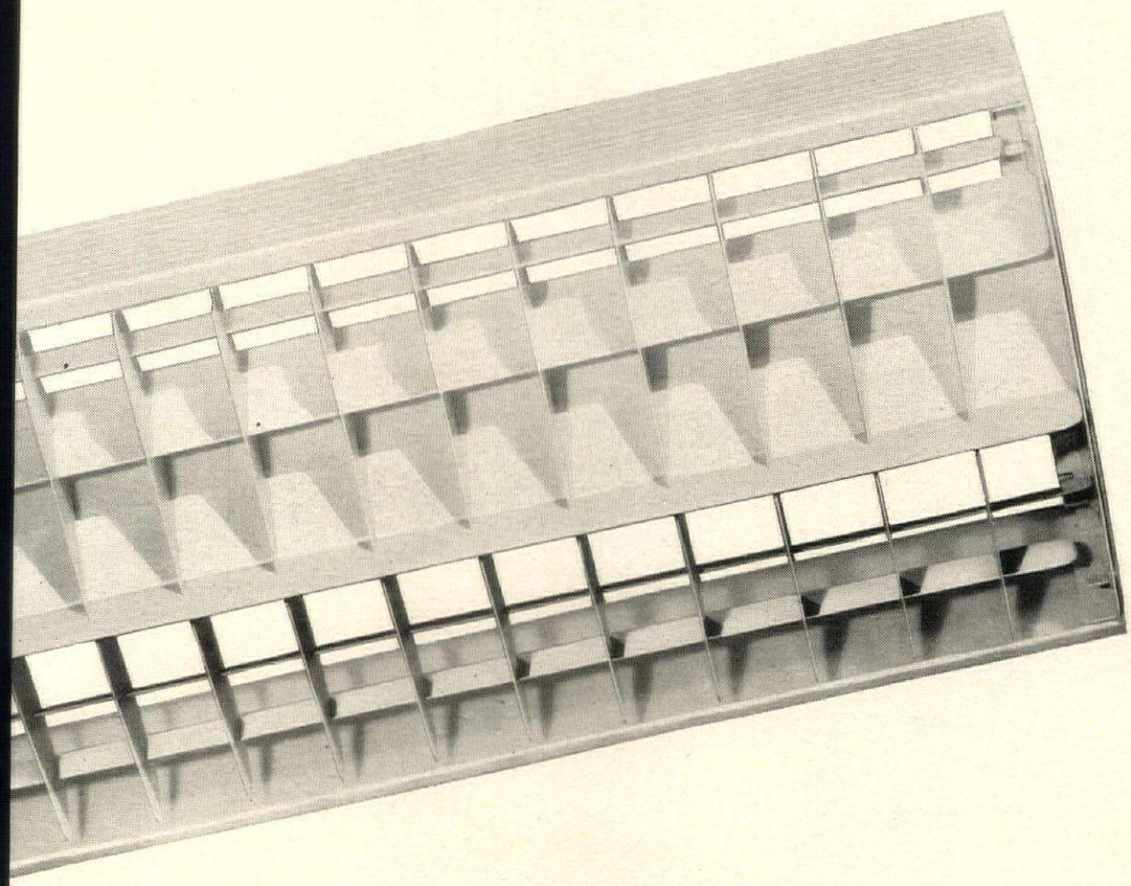
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Westinghouse luminaire you helped design

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Westinghouse has taken your recommendations and incorporated them into the design of this completely new luminaire. One of your requirements was that the usual dark areas at the ends of fixtures be minimized. This was accomplished in the LC design by providing a wrap-around plastic side panel with luminous corners. Another of your requests was for versatility of application in schools, offices and stores where comfortable light and quality illumination are prime essentials. The new LC answers this demand with controlled brightness.

You asked for shallow design—the new LC offers a shallow design which readily adapts to varying requirements, harmonizing with any room architecture.

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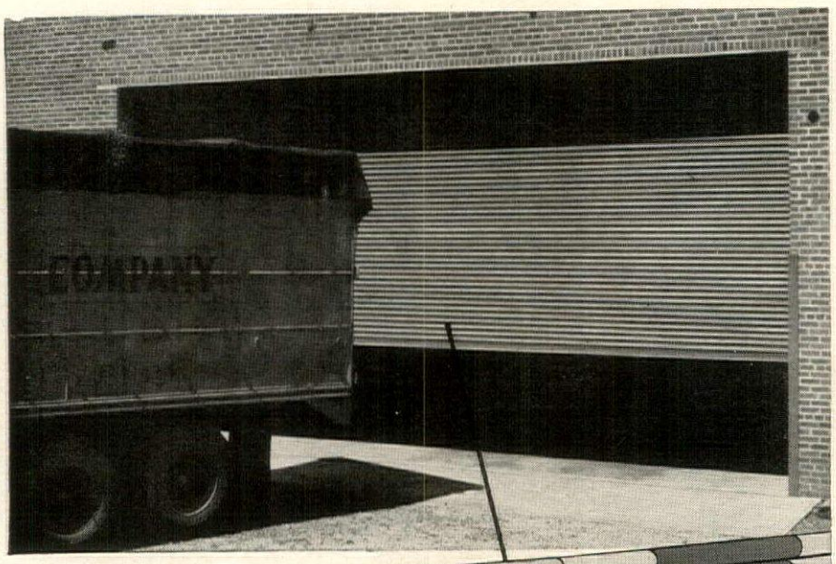
You asked for moderate initial cost—the Westinghouse LC is priced right to meet requirements for quality illumination at a moderate cost.

You asked for low maintenance and operating cost—both are built in the LC. Units are protected from corrosion by the Bonderite process to assure durability. And all ballasts are ETL approved, which means maximum life and minimum maintenance.

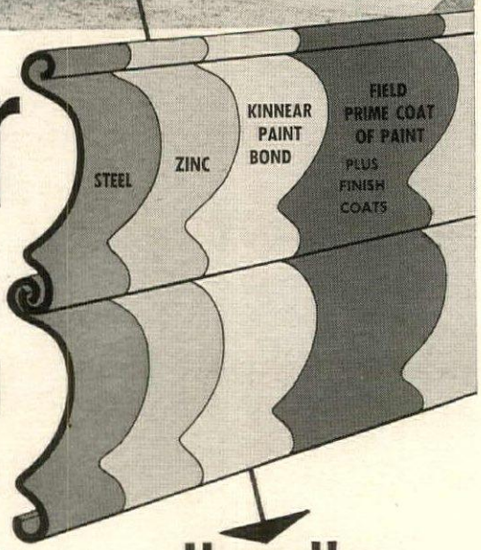
For more information about the new LC—or about our lighting fixture warranty program—call the Westinghouse distributor nearest you. Write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-04362

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Heavily Galvanized

No *wonder* users report 30, 40 and 50 years of *efficient, daily* service from

Kinnear Rolling Doors are as well known for *extra years of service* as for convenience, space-economy and protection.

Two of the major reasons for this are shown in the drawing above at right.

The rugged interlocking steel slats are *heavily* galvanized – with 1.25 ounces of pure zinc per square foot of metal, by ASTM standards.

Then Kinnear's Paint Bond, a special phosphate solution is applied to make sure paint applied later will *cover thoroughly, adhere immediately, and stay on longer.*

That's why Kinnear Rolling Doors cut maintenance costs to the bone, and deliver peak efficiency year after year!

Opening straight upward, Kinnear Rolling Doors coil compactly *out of the way* above the doorway. Materials placed within inches of the face of the door curtain won't hinder its smooth, easy operation. Surrounding floor and wall space is fully usable at all times.

Kinnear Rolling Doors are built to fit openings of any size. Kinnear Motor Operators add the convenience of push-button control, with remote-control switches at any number of points, if desired.

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BOOKS

Continued from p. 194

SIMPLIFIED DESIGN OF STRUCTURAL STEEL. Harry Parker. Published by John Wiley & So Inc., 440 Fourth Ave., New York 16, N.Y. pp. 5¼" x 8". $5.75

The first edition of *Simplified Design Structural Steel* was published in 19 Certain steel shapes then offered by t rolling mills have been discontinued and n shapes have been added. In addition, mo fications have been made in the Americ Institute of Steel Construction's specifi tion for the design, fabrication and erecti of structural steel and new formulas, n working stresses and design procedures ha been advanced.

This new edition contains revised tab of properties of structural shapes that a in agreement with the sections now ava able. Throughout the book discussions a illustrative examples have been modified accordance with current specifications a unit stresses. Many new safe load tab have been added.

MODERN TRAFFIC CONTROL. By Joseph C. graham. Published by Funk & Wagnalls, E. 24th St., New York 10, N.Y. 312 pp. 5½' 8½". $4.50

There have been many technical pamphle and periodicals written on traffic control, b this is the first attempt to present his mat rial for the general reader as well as t traffic engineer, city planning boards a law-enforcement agencies. The author, traffic specialist for the New York *Time* received a Ralph Horgan award for vit contributions to traffic safety during 1953.

MASTERS OF MODERN ART. By Alfred H. Ba Jr. Published by Museum of Modern Art, Ne York, N.Y. Distributed by Simon & Schust 1230 Fifth Ave., New York, N.Y. 240 pp. 10 x 11¼". Illus. $15

The 25th anniversary yearbook of the M seum, this big, almost square book is a live account of the modern visual arts—paintin sculpture, prints, architecture (only a pa or two), furniture, photography and film It is richly illustrated with 356 photograp —77 in color. The author is Alfred H. Ba Jr., director of the collection at the Museu

THE MOSCOW KREMLIN—ITS HISTORY, ARCH TECTURE AND ART TREASURES. By Arth Voyce. Published by the University of Ca fornia Press, Berkeley 4, Calif. 147 pp. 7½" 11". Illus. $10

This first comprehensive, illustrated stud of the Kremlin in English traces the arch tectural history of the Kremlin from th first rude wooden palisaded compound to th medieval stone citadel and the principal mo ern additions, including the Lenin Maus leum. The Kremlin's unique collection of a treasures, secular and ecclesiastic, is di cussed and illustrated in great detail.

continued on p. 20

announcing

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The new clay tile adhesive that cuts installation costs up to 20%!

Makes clay tile practical for every use



Look behind clay tile for the big news in construction methods today. CTA-11 enables contractors to set tile faster at up to 20% savings in cost. In new installations, thanks to CTA-11, builders can now use "dry wall"—and get a clay tile job that will last a lifetime. Remodeling jobs are simplified, too, for new CTA-11 eliminates the job of rebuilding walls. Tile can be set easily on the existing surface.

CTA-11 is tough, resilient and durable, too—resisting cracks, moisture and settling. For setting ceramic floor tile, specify CTA-12 and profit from similar cost-cutting advantages.

CTA-11 for walls . . . CTA-12 for floors . . . to make the beauty and utility of clay tile practical for every application. For the complete details on CTA-11 and -12, write today to 3M, Department 182, 417 Piquette Avenue, Detroit 2, Michigan.

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"or equal"...?

Published with the permission requested of Maguolo & Quick, prominent St. Louis Architects, this resume of their policy with respect to the "or equal" phase of specifications, is of widespread interest to Architects and Contractors alike.

" A paragraph allowing substitutions of lighting equipment has been inserted in the electrical specifications and so worded to *dispel any notion that the specifications are restrictive.* The procedure outlined in this paragraph for obtaining approval of any substitutions protects the owners against the possibility of the basic standard of quality being subverted.

Our experience has taught us:–

(a) The electrical bids should be uniform and the standard of quality of lighting equipment should be established in the specifications. This insures all electrical bidders being on an equal basis.

(b) Electrical bids can be distorted when some bidders are allowed, or find it necessary, to play with the lighting fixtures. Such a bidder's assumption of a thing to be equal, and the pressuring for approval, many times hides the value and the proper cost credit from being passed along to the owner. This makes for a very unhappy ending.

(c) The standards set up in the specifications have evolved through our experience from project to project. We have learned one thing positively: that the lighting equipment business, unfortunately, is unique in that too much equipment is "sold" on the basis of catalog illustrations and not on the true merit of quality of design, construction, performance and ease of maintenance.

(d) If a commonly used and rather insidious phrase "or equal" is put in the specifications, we have found that many electrical bidders *presume* to judge what is equal to what is wanted by the owner in the way of quality. In effect, some bidders redesign the project to their liking and at a profit to themselves and the utter dissatisfaction of the owner after the installation is complete. It is difficult to combat a thing that resolves itself to an opinion, and the phrase "or equal" does just that.

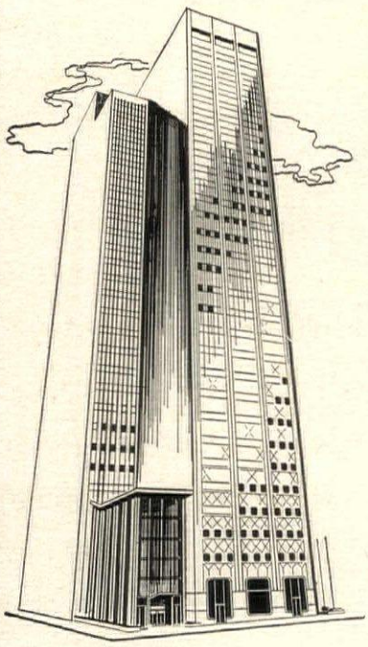
(e) If the more firm phrase "or approved equal" is put in the specifications, we have found that salesmen descend upon the office in droves a few days before the bids are due and try to stampede us into a decision *without an opportunity to consult with the owner.* An intelligent analysis cannot be made under such pressure of time. We know such action results in the *distress to us as your designer* and to *you* who must live with the equipment for twenty or more years.

(f) We have learned that the best procedure is one that established the standard of quality as a basis for bidding. Then, after the rush of bidding and contract letting is over, any substitutions that might be *beneficial to the owner* and result in a saving can be intelligently considered. A complete review can then be made by looking at two samples: one lighted and mounted, the other unlighted and displayed for a deeper analysis of the quality of fabrication and finish.

(g) This insures a painless, positive and clear-cut determination of whether the saving offered in the substitution is a real or a false value. "

This advertisement is sponsored by Day-Brite Lighting, Inc. of St. Louis in the interests of clients of Architects and Engineers.





Alcoa Building, modern home office of the Aluminum Company of America, Pittsburgh, Pa., was designed by Architects Harrison and Abramovitz, New York, N. Y.

Washrooms of another notable building finished in Carrara Glass

● Over and over again leading architects turn to Carrara Structural Glass when it comes to the specification of a wall finishing material for washrooms in important new buildings. And Carrara Glass has many outstanding qualities which make it worthy of this architectural selection.

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Additional information on Carrara is available from Pittsburgh Plate Glass Company, Room 5179, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

Carrara ... the quality structural glass

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BOOKS

Continued from p. 198

MATERIALS AND METHODS IN ARCHITECTURE. Selected by Burton H. Holmes. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 412 pp. 9" x 12". Illus. $10

This big book is an offset reprint of technical articles which have appeared in *Progressive Architecture* during the last six years—divided according to methods, materials data, environmental control and equipment.

HOW TO GET THE MOST OUT OF OUR STREETS. Published by the Transportation and Communication Dept. Chamber of Commerce of the US, Washington 6. D.C. 51 pp. 9" x 12". Illus. Paper back. $1. Special prices for quantities

CITY PLANNING AT YALE. A Selection of Papers and Projects. Edited by Christopher Tunnard and John N. Pearce. Published by the Graduate Program in City Planning, Department of Architure, Yale University, New Haven, Conn. 86 pp. 6" x 9¼". Illus. $1.50

ACCELERATED URBAN GROWTH IN A METROPOLITAN AREA. A Study of Urbanization Suburbanization and the Impact of the US Steel Plant in Lower Bucks County, Pa. Published by the Institute for Urban Studies, University of Pennsylvania. Philadelphia 4, Pa. Vol. I: 63 pp. 8½" x 11". Vol. II: 262 pp. 8½" x 11". $4. Both volumes, together, $5

BIBLIOGRAPHY ON PRESTRESSED CONCRETE. American Concrete Institute, 18263 W. McNichols Rd., Detroit 19, Mich. 86 pp. 8½" x 11". $2

REINFORCED CONCRETE AND PRESTRESSED CONCRETE STRUCTURES. Riccardo Moandi. Libreria Internazionale "Dedalo," Via Barberino, 73, Rome, Italy. 141 pp. 8½" x 10". Illus. $7.35

SIMPLIFIED SITE ENGINEERING FOR ARCHITECTS AND BUILDERS. By Harry Parker and John W. MacGuire. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 250 pp. 6½" x 8". Illus. $5

A SIMPLE METHOD FOR EVALUATING BLAST EFFECTS ON BUILDINGS. By the Department of Propulsion and Structural Research, Armour Research Foundation of Illinois Institute of Technology, Technology Center, Chicago 16, Ill. 39 pp. 8½" x 11". Illus. $3

TECHNIQUES OF PLANT MAINTENANCE AND ENGINEERING, 1954. Proceedings of the Technical Sessions held at the Fifth National Plant Maintenance and Engineering Show, Chicago, January, 1954. Clapp & Poliak, Inc., 341 Madison Ave., New York, N.Y. 291 pp. 8½" x 11". $7.50

NEW WAYS OF SERVICING BUILDINGS. Edited by Eric de Maré, A.R.I.B.A. The Architectural Press, 9-13 Queen Anne's Gate, London, S.W. 1, England. 228 pp. 7½" x 9½". Illus. $4.20

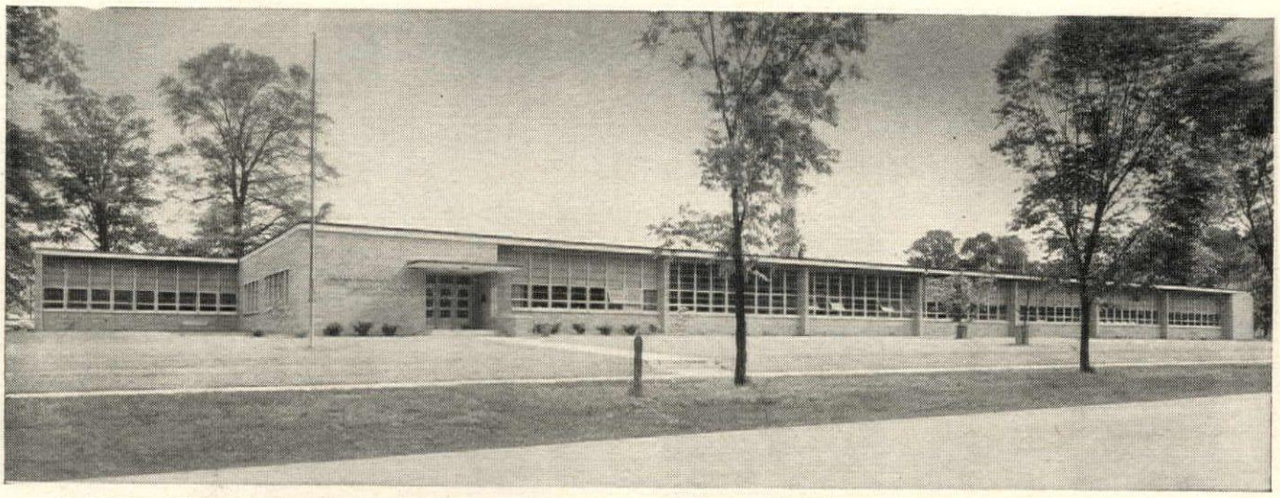
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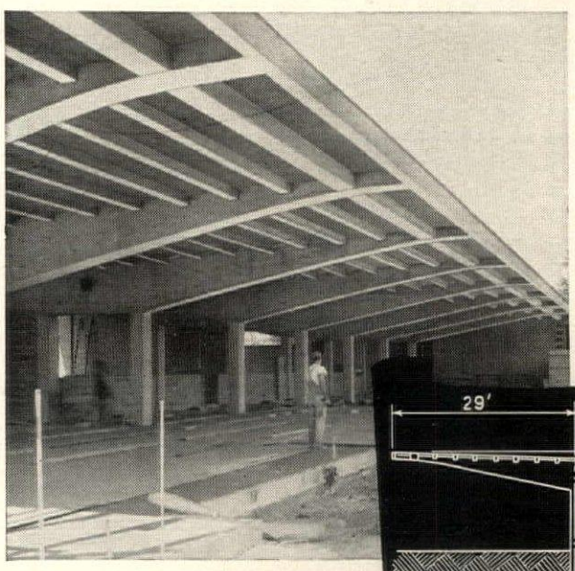
540 North Michigan Avenue, Chicago 11, Ill.



Merle Sidener School, Indianapolis. Architects: Daggett, Naegele & Daggett; engineers: Fink & Roberts; contractor: Cannon Construction Co.



Above: The all-concrete roof covers two rows of outside classrooms and a central corridor. With its overhang, the roof is 68 ft. wide. Below: 29-ft. concrete cantilever beams extend from corridor columns over the classrooms and exterior walls.



Right: cantilever beams extend across auditorium from opposite walls, meet at center. Floor here is lowered 4 ft.

Concrete and Cantilever Design Cut Costs for Modern School

Attractive, modern appearance distinguishes this fine school, completed at a cost of only 92¢ per cu. ft.—20 to 25 per cent less than the cost of other new buildings of comparable size and quality in the area.

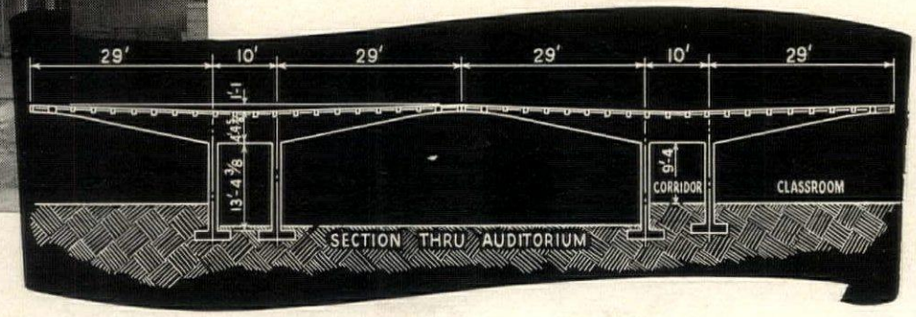
Concrete cantilever beams at 17′ 2″ centers are an outstanding feature in the design. Supported on twin concrete columns that form a central corridor, they extend beyond the exterior walls of the classrooms as roof overhang. Concrete ribs between the cantilever beams carry lightweight precast concrete panels that form the roof.

In the auditorium, cantilever beams from opposite walls join at the center of the room to form a 58-ft. roof span (see drawing below). Exposed concrete masonry, used for partitions and backup throughout the structure, assures maximum firesafety, economy and durability.

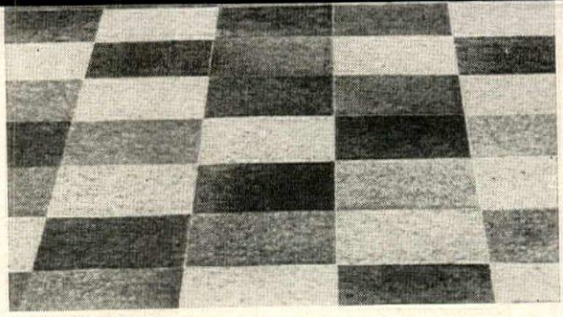
Concrete construction for schools is moderate in first cost, means lower maintenance expense and extra long life. These factors add up to ***low annual cost***—which pleases school officials and taxpayers alike.

Write for free booklet on concrete school design and construction, distributed only in the U. S. and Canada.

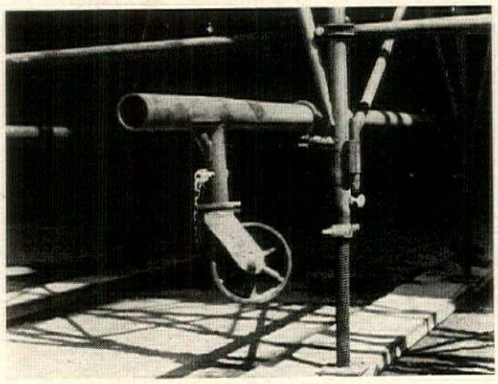
PORTLAND CEMENT ASSOCIATION
Dept. A2-7, 33 West Grand Avenue, Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work



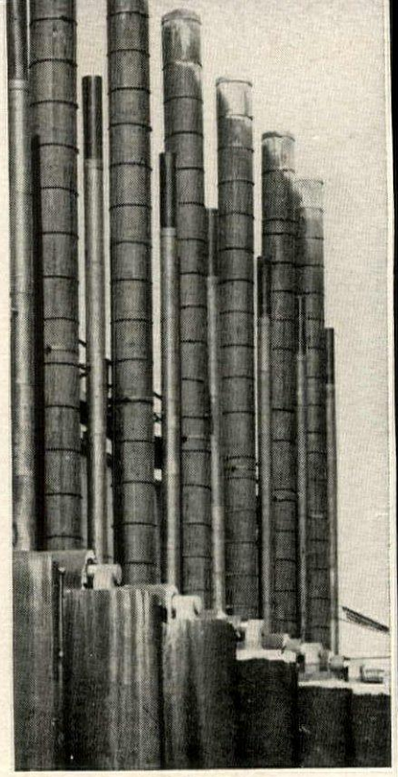
PRODUCTS



Cork stays down on slab (p. 210)

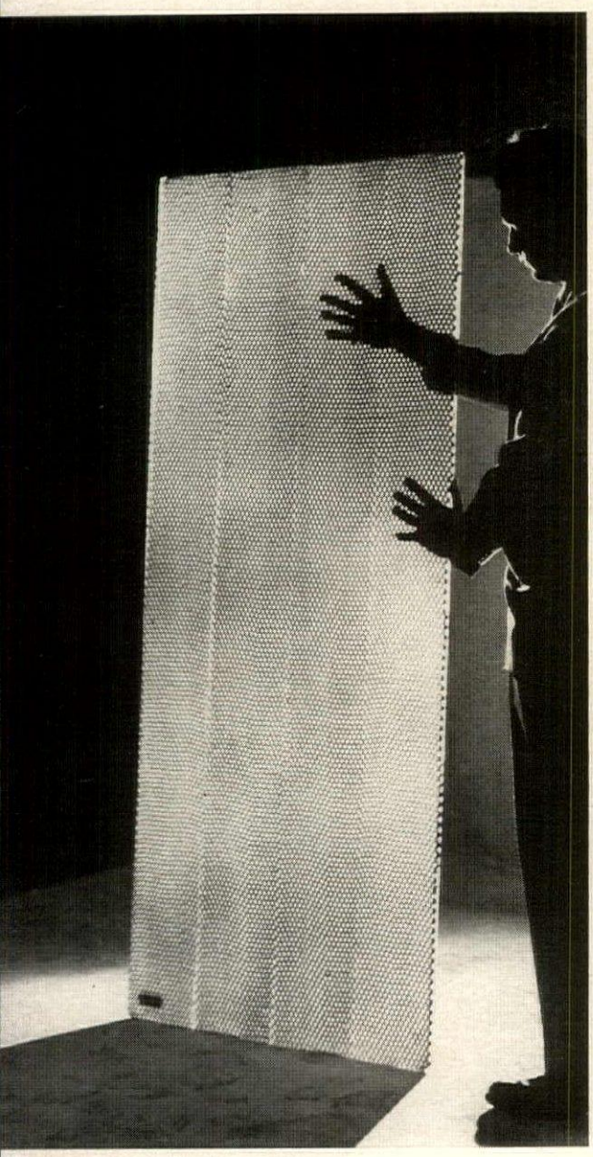


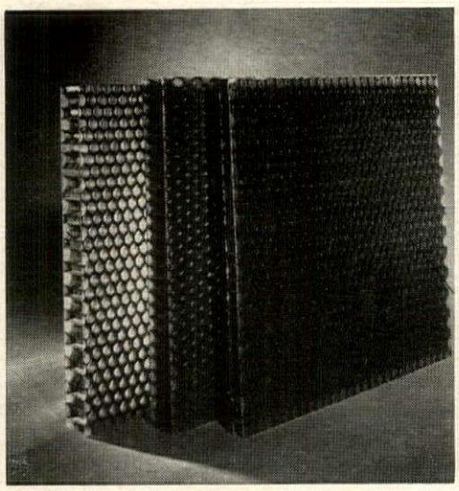
Form shoring on wheels (p. 210)



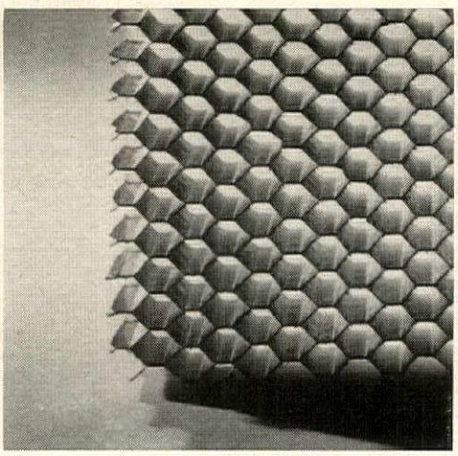
Chimneys stop fuming (p. 218)

Sandwich panel combines modern building materials—paper, cloth and plastic





Panels of any thickness from ⅜" up can be obtained in Lampincore sandwiches for interior partitions, skylights, exterior walls. Honeycomb for big panels (photo left) was made in four strips, but 36"-wide one-piece cores of any length will be fabricated for quantity orders.



Honeycombs in recent years have been revisited by more than bees. Makers of flush doors, metal partitions and spandrel walls have made good use of the strong hexagon motif in cellular cores of paper, cloth and aluminum. But bedding company Englander, renowned for putting people to sleep, is now alerting people to the design potential of moldable, see-through honeycomb building panels.

Laminating translucent plastic skins (polyester or epoxy, reinforced with woven glass yarn or filaments) to honeycombs of sundry materials, sizes and densities, the firm's Baltimore plastics division may soon be fulfilling many an architect's vision of a light-transmitting, self-supporting wall with its own insulation and finish.

A design, as well as assembly-line advantage of the plastic skins is that they can be formed in compound curves. Interlocking connections also can be molded as integral parts of the panels. *Lampincore*'s high-compressive, tensile and shear strengths are attributable largely to the capillary action of special epoxy resins which literally crawl up into the cellular walls. This excellent adhesion of skin to core allows for edgewise compression of 1,000 psi. Corrosionproof and weather-resistant, the naturally tinted skins (integral chemical colors range from appropriate honey tones to sea green) can be made fire-resistant and are suitable for uses in a temperature range of —100° F. to 350° F. Thin *Lampincore* panels (about ⅜") for decorative use run about $1.50 to $2.25 per sq. ft.; structural panels range $2.25 to $4, depending on kind of core and facing.

Manufacturer: Englander Co., Plastics Division, 227 N. Warwick Ave., Baltimore 23, Md.

continued on p. 206



for problem floors

When you select flooring materials for unusual or severe conditions, look into the unusual combinations of properties offered by the five types of resilient tiles made by Kentile, Inc. In practically every case, one of them will be just right for the job, whether conditions call for serviceability under heavy foot or industrial traffic, ease of maintenance, or resisting alcohol, acids, alkalis, oils and greases, chemicals and foodstuffs. All of them help to create an impressive decorative composition. Uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness and built-in durability—all of these qualities make this the world's most popular line of resilient tile floorings.

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PRODUCTS

Continued from p. 204



ALUMINUM ELECTRICAL BUS has good conductivity, high-strength properties

RABC, Reynold's aluminum bus conductor material, combining good electrical conductivity with excellent workability, has a significant cost advantage over copper—especially installations handling large electrical currents. Because alloying aluminum increases its strength but reduces current-carrying capacity, Reynolds Metals worked with electrical engineers and contractors in the field to determine the most practical ratio of these characteristics.

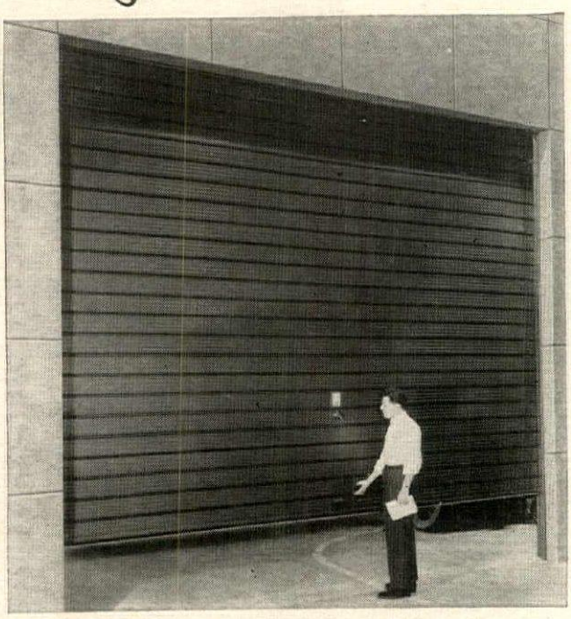


First goal in development of the new material was to make a bus with high strength in the direction of short circuit forces. (To compensate for the edge copper has in conductivity and to make most efficient use of the aluminum, wider aluminum bus is advisable rather than thicker to provide more surface for heat dissipation.) The short-circuit strength varies directly with tensile strength and width, and so a 4"-wide bus of aluminum of 29,000-psi tensile strength compares favorably with 3"-wide copper having 37,500-psi tensile strength—both bars being the same ¼" thickness. Thus, a 4" bar of *RABC* could replace the copper without changing spacing of supports or sacrificing maximum heat dissipation. Although *RABC*'s conductivity, 79% that of copper, is lower than the ECH17 aluminum bus already in use, which rates 82%, the new bus can take bends better and has higher compressive strength — important where bolted steel joints are used.

RABC's price of 42½¢ a lb., compared with copper's 45¢ and ECH17's 60¢, is translated into an appreciable saving when costs are figured on a linear-foot basis for the three types of comparable bus bar capable of carrying about the same juice: 3" x ¼" copper runs $1.30; 4" x ¼" ECH17, 71¢ and 4" x ¼" *RABC*, 50¢.

Manufacturer: Reynolds Metals Co., Louisville, Ky.

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Roly-Door
steel sectional doors
RESIDENTIAL • COMMERCIAL • INDUSTRIAL

CLEAN, MODERN FUNCTIONAL SIMPLICITY that blends with all types of architecture is the hallmark of Morrison Roly-Doors.

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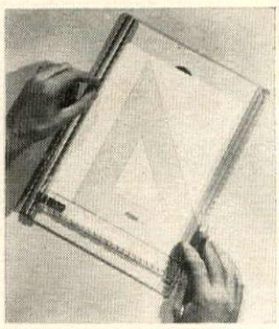
OVER 100 STANDARD SIZES ready for immediate delivery and facilities to produce special sizes to individual specifications provide a Roly-Door for every overhead door requirement.

NATIONWIDE SALES AND SERVICE . . prompt delivery and expert installation service are offered by Roly-Door Distributors and Dealer-Installers located in the principal cities of the U. S. and Canada. They are listed in classified telephone directories.

Complete Roly-Door Specifications are available in Sweet's Architectural File or from:

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Also manufacturers of MOR-SUN WARM AIR FURNACES and MORRISON SERVICE BODIES
In Canada, Roly-Door Distributors, Ltd., 1330 Bloor Street W., Toronto 4, Ont.



MINIATURE DRAWING BOARD
sketches in field or at lunch with client

The *Klippit* is a portable aluminum drawing board of English design, light in weight and small enough (13¾" x 10¼") to slip in a briefcase or into a trench coat pocket. It contains its own drawing equipment: a sliding "T" square, transparent ruler, architectural scale and paper fastener. No drawing pins are needed; a spring mechanism holds several sheets of paper down their whole length. Retail price: $7.50.

Manufacturer: Instrumentation Associates, 138 Haven Ave., New York 32, N. Y.

continued on p. 210

HOW TO OPEN A BUILDING FOR YOUR CLIENT

Many building owners feel a desperate competitive need to remodel. They want the front of their buildings to be a standing invitation to passersby to come in.

When such a client seeks your advice as his architect, here's a practical suggestion you can make:

Open up the "blind entrance" by putting in a bank of ½" L·O·F *Tuf-flex** Doors. These new frameless doors offer a clear, inviting view of what's going on inside.

Tuf-flex Doors are 3 to 5 times tronger than regular plate glass of the same thickness. And the new ½" door weighs 66 lbs. *less* than the common ¾" door, so it's easy to operate. The fittings are beautiful, too.

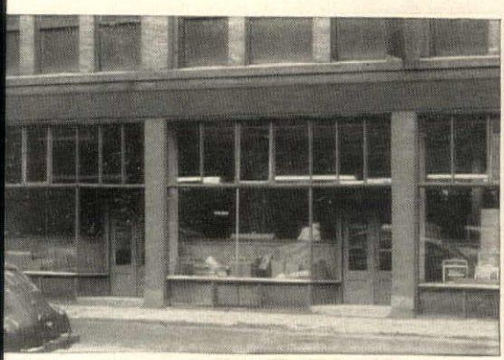
For complete information on *Tuf-flex* Doors, see your L·O·F Glass Distributor or Dealer. He's listed under "Glass" in the yellow pages of phone books.

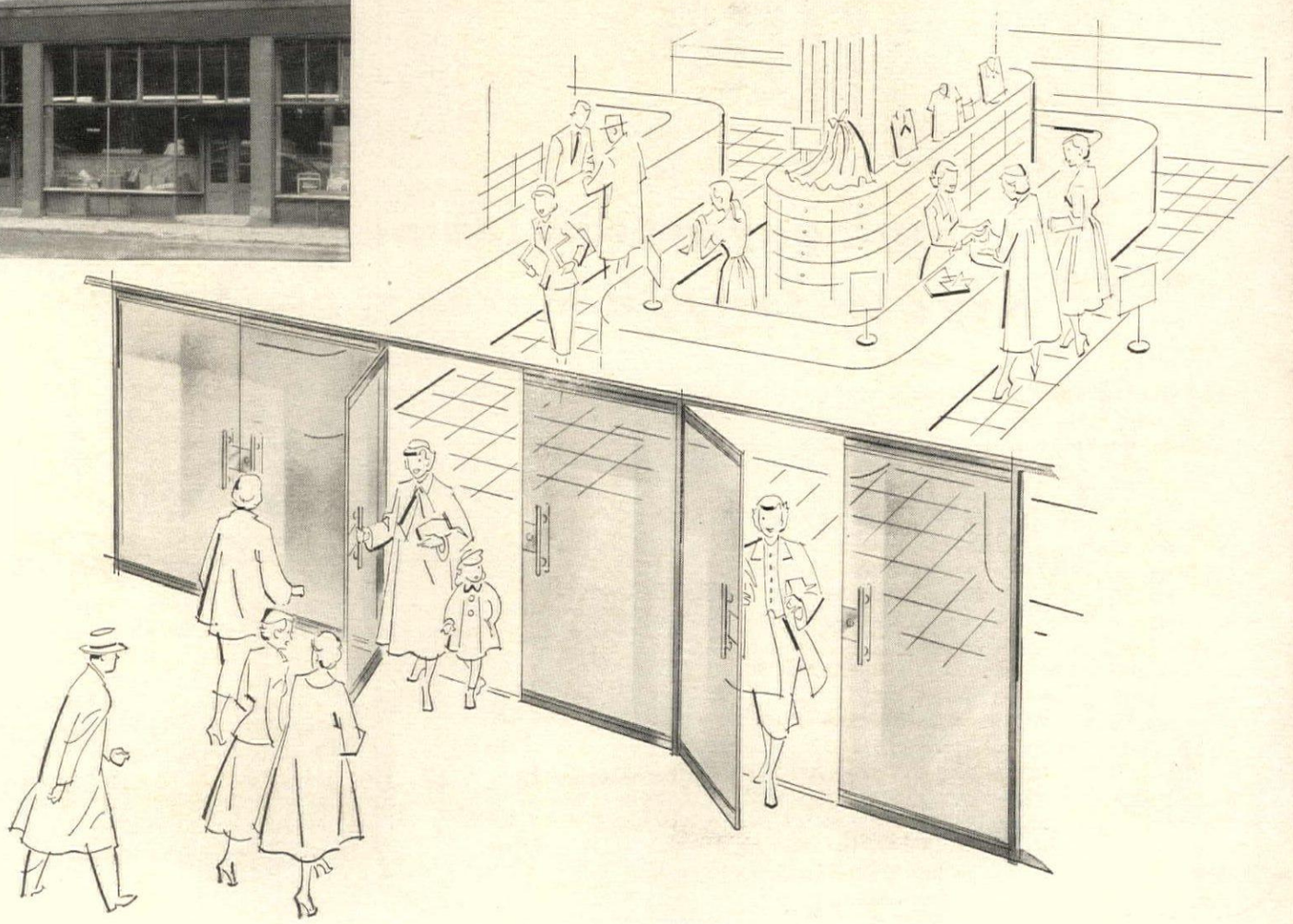
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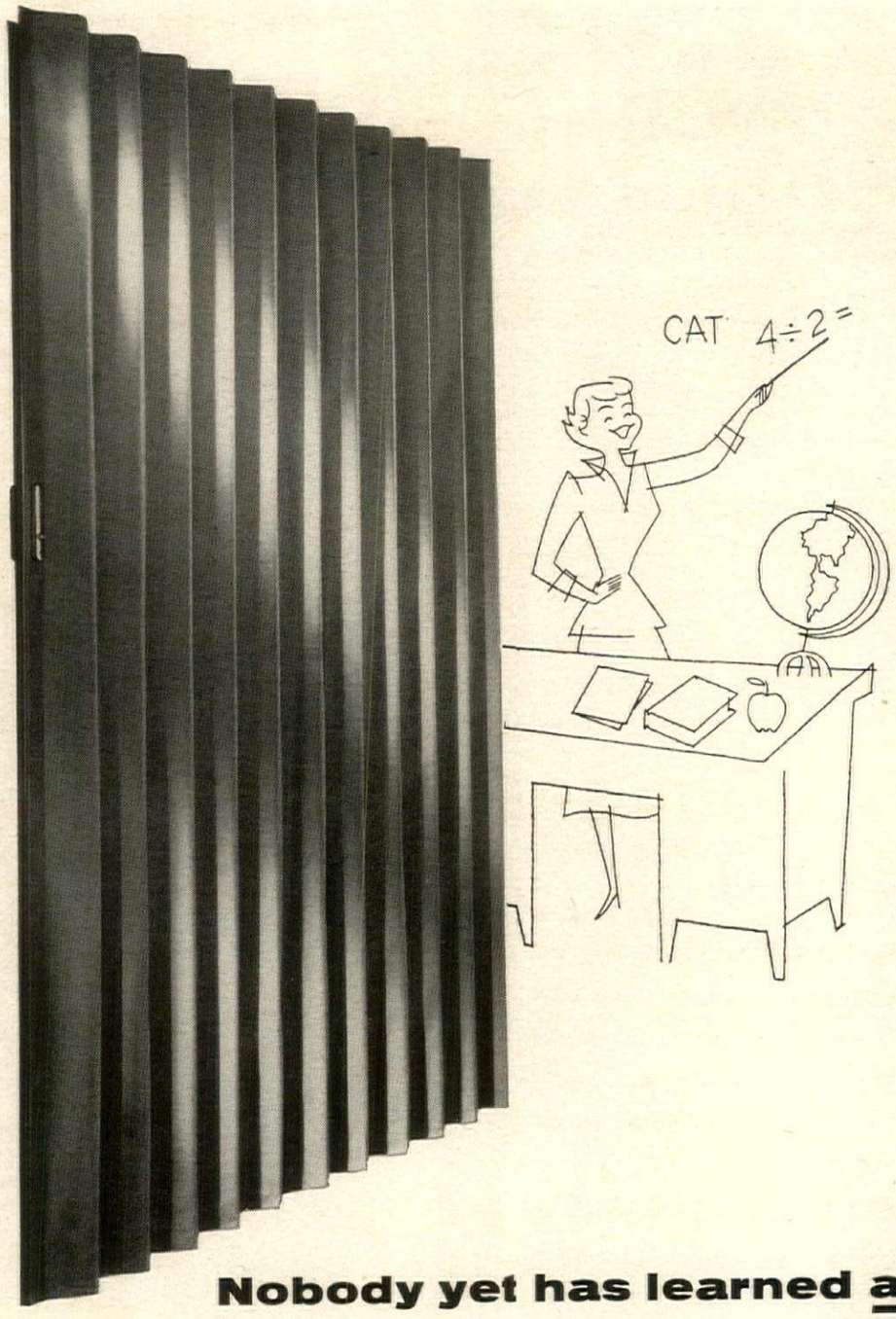
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Space requirements which change hourly or daily can be met quickly and easily. And space needs which are likely to change months or years in the future need not require expensive, time-consuming remodeling if MODERNFOLD doors and walls have been installed with growth in mind.

MODERNFOLD doors are available in two lines: Custom, which comes in any size and a multitude of colors, and Spacemaster, which fits standard-size door openings and can be painted or slip covered.

In any size, MODERNFOLD doors assure an almost unlimited life of efficiency and service because of their balanced, double-strength steel framework. And their washable vinyl covering has to meet the most rigid specifications in the industry for flexibility, resistance to cold, abrasion resistance and flex resistance.

Switches and overhead tracks make it possible for one MODERNFOLD Custom door to serve in more than one location...to meet a variety of fast-changing demands for space. In fact, there's just no limit to the ways MODERNFOLD makes space more flexible.

If you have a problem in space division, the MODERNFOLD distributor (listed under "Doors" in classified directories) will be glad to show you the Custom line. Your building supply dealer has the Spacemaster line available. Or write New Castle Products, Inc., Dept. B32, New Castle, Indiana. In Canada: New Castle Products, Ltd., Montreal 6.

Full details in Sweet's file

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DOORS

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Patterns for natural *Beauty* unlimited with modern VIBRAPAC Block

in every way..VIBRAPAC Concrete Block *make good!*

In appearance: Now, with Modern VIBRAPAC Block, you will find "the sky is the limit" for creative design and construction. Varieties of ashler patterns, interesting textures and distinctive color tones offer opportunities for *beauty* at its *permanent best* in homes and all types of buildings. Charm is added, too, by using VIBRAPAC Block for fireplaces, garden walls, planters and other practical uses.

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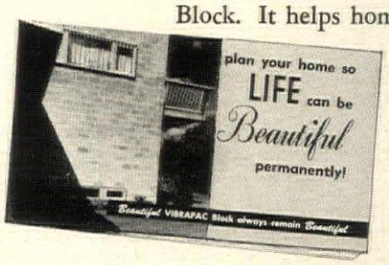


BES-STONE SPLIT BLOCK
has that quarried stone character

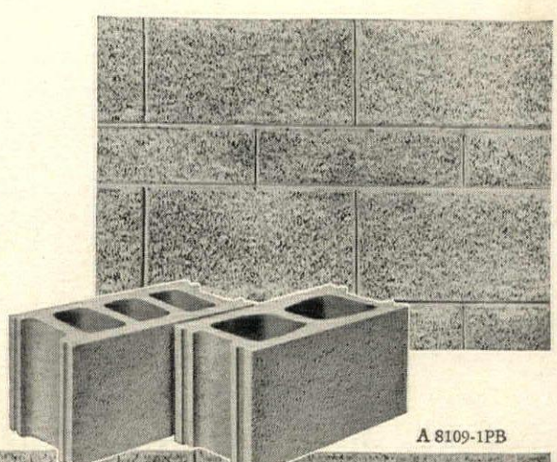


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This Booklet Helps You Make Profitable Decisions —
Its 24 pages show many attractive exterior and interior adaptations of VIBRAPAC Block. It helps homemakers "make up their minds" that it pays to make the most of modern concrete masonry. Ask your nearby Concrete Block Plant for a free copy of this book, or write to: BESSER Company, Box 179, Alpena, Mich.



VIBRAPAC BLOCK
— Modern 3 core and 2 core units.



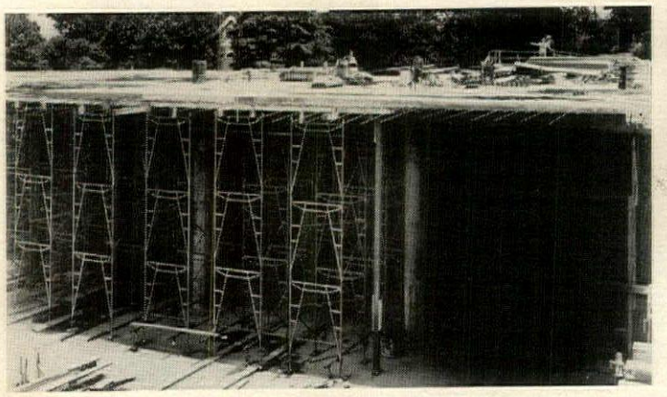
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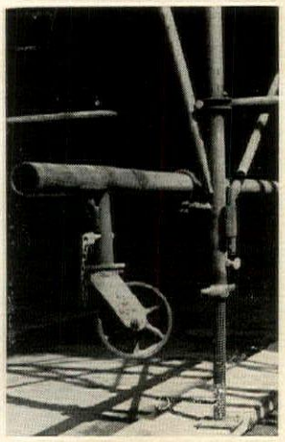
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for Block-Making Plants All Over the World

PROMOTERS OF HIGH QUALITY CONCRETE MASONRY FOR MORE THAN A HALF CENTURY

PRODUCTS *continued from p. 206*





ROLLING SCAFFOLD saves shoring costs

New wheel-on-jack attachments enable *Ezebilt* scaffold shoring units to be shuffled around on the job with little rebuilding. Engineered to contractors' specifications, the mobile units eliminate the costly knocking down and re-erection of individual shores. In a recent Pittsburgh job calling for laying a 250′ x 400′ ceiling over the first floor, each shoring unit was simplified by putting up three parallel 50′ runs, braced with Universal's patented boltless mechanism, and tied together with pipe and clamps to support a 50′ x 25′ form area for an 8½″-thick slab—a total load of 195,000 lb. After the concrete was poured and cured, each unit in the assembly was lowered about 6″ on the screw jacks so the casters could take the 22,000-lb. rolling load of the forms. Upper scaffold panels served as work platforms for stripping forms which remained practically intact. A tractor then towed the scaffold-shoring units to the next bay for a repeat pour with the same forms, and then to two more bays for pouring with the same, undismantled shoring or formwork.

Manufacturer: Universal Manufacturing Co. Zelienople, Pa.

SUPERSTICK ADHESIVE holds down any flooring on grade

"Is there any flooring material that can be used on concrete slab besides asphalt tile?" is a question familiar to architects, contractors and manufacturers. Obviously it depends on the slab. If absolutely vaportight, then the kind of tile is no problem; if not, then only the porous asphalt and asbestos types give satisfactory service, i.e., will not delaminate from the adhesive bed. Another approach, that of a super-glue resistant to heat, alkali and water, is the one taken by floor-covering Manufacturer Congoleum Nairn.

C-N reports its new *Three Twenty* adhesive can be used on grade, even over radiant heat, for all kinds of tile—vinyl, rubber, linoleum, vinyl asbestos or cork. It also recommends it as a strong bond for terrazzo, marble and quarry tile and as a wall adhesive for various surfacings. *Three Twenty* may be used in lavatories, laundries on sink counters and other areas where there may be surface water. Light in color, noninflammable, the new mastic boasts easy spreading and fast initial tack. It costs $6.25 a gal. in 5-gal. drums.

Manufacturer: Congoleum Nairn, Kearny, N. Y.

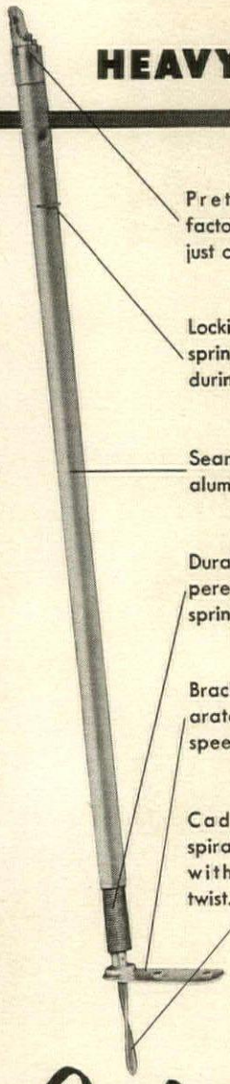
continued on p. 214

NEW GIANT OF THE INDUSTRY



Caldwell HELIX

HEAVY DUTY SPIRAL SASH BALANCE



Pretensioned at factory. Easy to adjust on the job.

Locking piece holds spring out of tube during installation.

Seamless, rustproof aluminum tube.

Durable, oil tempered high carbon spring.

Bracket arm is separately attached to speed installation.

Cadmium plated spiral torque rod with graduated twist.

SPECIFICALLY DESIGNED FOR INSTITUTIONAL AND COMMERCIAL SASH WEIGHING UP TO 70 LBS.

CHECK THESE BIG ADVANTAGES

1. Requires no head or side room, no mortising of frame
2. 25% less wood is removed in routing.
3. Specially designed for quick and easy installation.
4. Tension can be adjusted after balance is installed.
5. Allows modern window appearance through narrow trim.
6. Assures smooth, effortless window operation throughout travel of the sash.
7. Guaranteed for LIFE of the building.

WRITE TODAY FOR COMPLETE INFORMATION!

Caldwell

Specify Spirex spiral spring sash balances for up to 30 lb. sash.
Caldwell clock spring sash balances available for up to 105 lb. sash.

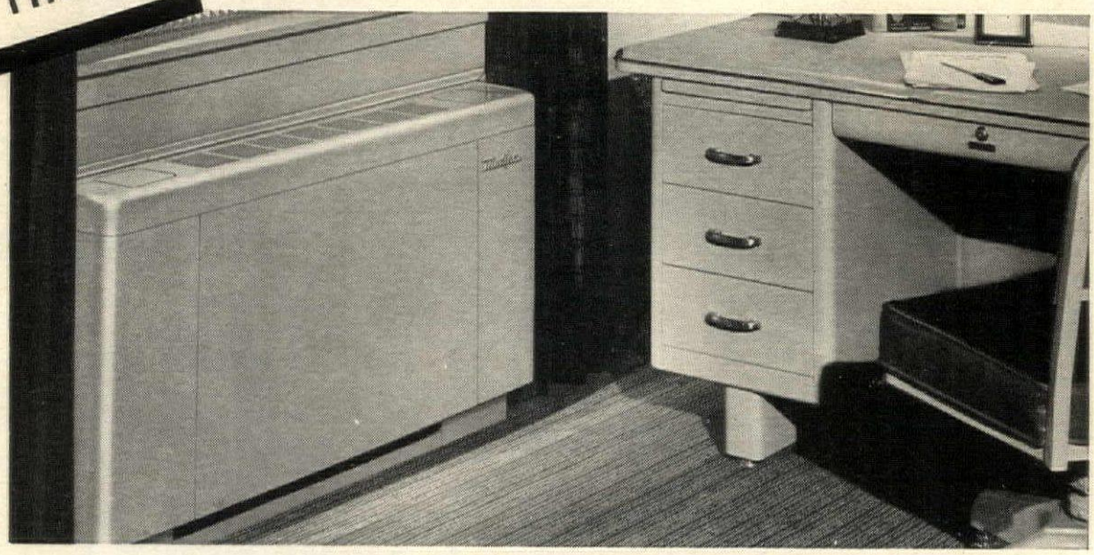
CALDWELL MANUFACTURING CO., 69 Commercial St., Rochester 14, N. Y.

NOW — for low-cost, year 'round air conditioning of individual rooms

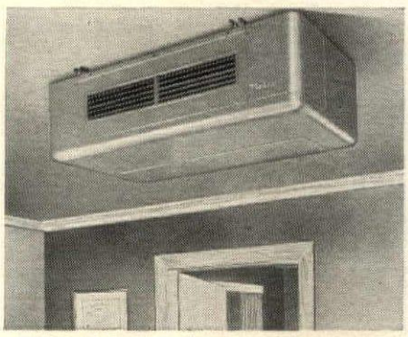
YOUR CHOICE OF 4 TYPES OF THE NEW

Modine Airditioner

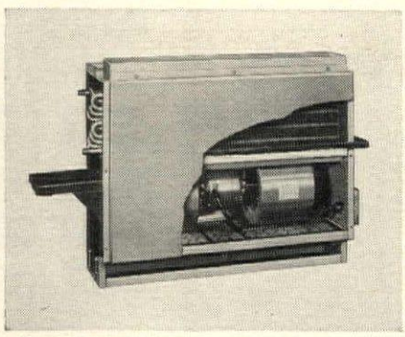




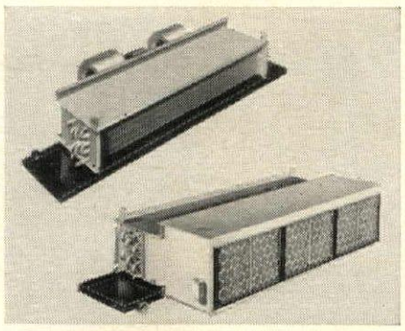
CONSOLE MODEL—superbly styled and finished—blends gracefully with any interior decor. Design facilitates recessing—only 6 in. need project into room. Also for free-standing installation.



CEILING MODEL — deluxe unit for exposed installation on ceiling—saves floor space.



CONCEALED MODEL (front panel cutaway) permits out-of-sight installation in wall.



OVERHEAD MODELS—with or without plenum and filter for use in furred space.

HERE'S low-cost cooling, heating, ventilating, filtering, dehumidifying and circulating of air for individual rooms. Ideal for hotels, offices, apartments, motels, hospitals and similar multi-room applications. AIRditioners* save cost of installing central duct systems in new buildings. On modernization jobs, they solve the difficult problem of providing supply and return ducts in existing walls.

Cold water from a central chiller or other source is piped to each unit for summer cooling. Heating is accomplished with hot water from a central heating plant. *The same piping* —water supply and return, and drain —serves each unit for both cooling and heating. And AIRditioners are *individually controllable.*

Get all the facts on the new AIRditioner from the Modine representative listed in your classified phone book. Or clip this coupon and mail it today.

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Modine Airditioner

MODINE MFG. CO.
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Racine, Wis.

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AND LOOK-MACOMBER STEEL DECK AVAILABLE NOW IN LONG LENGTHS

THIS MEANS — WIDER PURLIN SPACING, LESS PLATES TO HANDLE

LOW COST ERECTION — MACOMBER EXPANDED RIBS SPEED ERECTION

ALL THIS— AND SIDING TOO...IN THE NEW MACOMBER STEEL DECK CATALOG D-55.

WHERE DO WE SEND YOUR COPY?

ORIGINATORS OF THE *OPEN WEB STEEL JOIST*

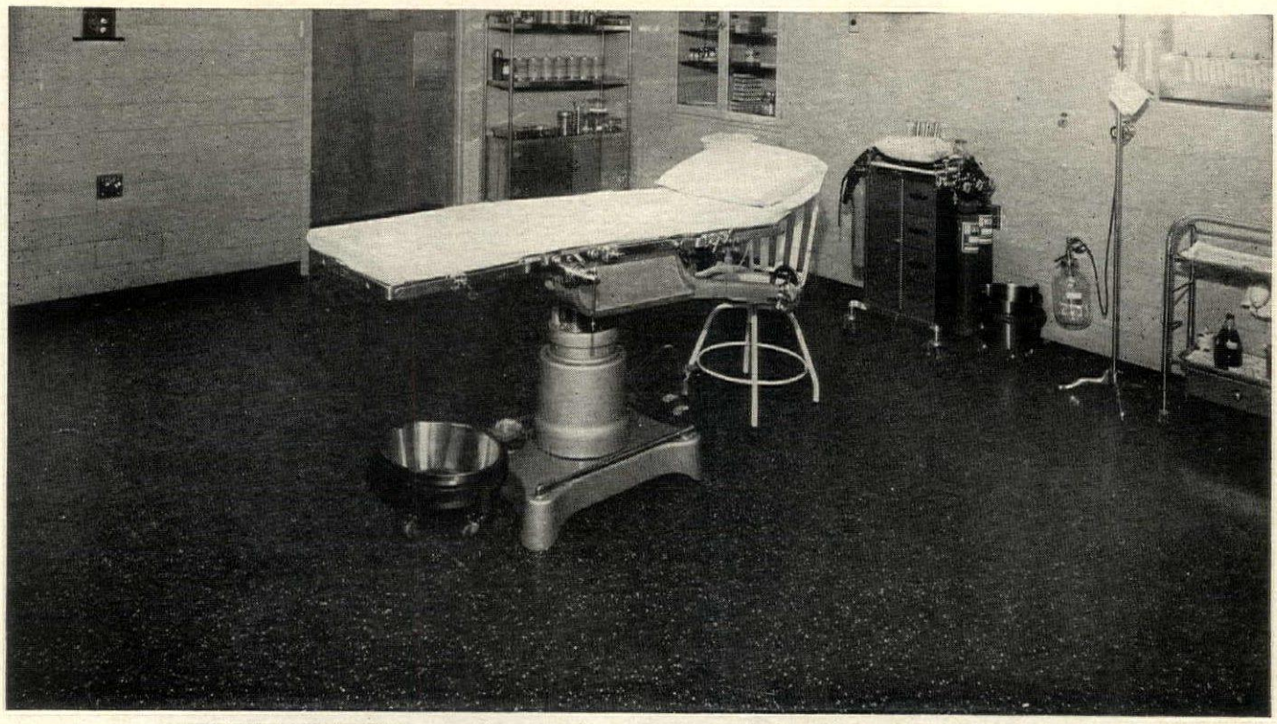
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V BAR JOISTS • LONGSPANS

BUILDING PRODUCTS
STEEL TRUSSES • STEEL DECK

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• ENGINEERING • FABRICATING AND ERECTING •



MODERATELY CONDUCTIVE operating room floor provides added safety at St. Elizabeth's Hospital, Dayton, Ohio. *Architects:* Schmidt-Garden & Erickson, Chicago. *Terrazzo Contractor:* Serena Art Terrazzo & Mosaic Co., Inc., Dayton. *General Contractor:* James McHugh Construction Co., Chicago.

Special treatment for hospital floors ... with Terrazzo



DURABLE BEAUTY of corridor at St. Elizabeth's will withstand heavy wear, frequent scrubbing. Smooth, even surface of terrazzo cleans easily and economically.

Hospital floors made with terrazzo remain bright and attractive in spite of heavy foot traffic, rolling equipment and continuous scrubbings. In the operating room shown above — where absolute cleanliness is a must — terrazzo's smooth surface is easy to clean . . . and keep clean. In addition, for greater safety in such rooms where anesthetics or oxygen therapy are used, terrazzo floors can be made moderately conductive by an acetylene carbon admixture. These special floors guard against possible explosion caused by static electricity.

Only terrazzo offers such a wide latitude of design possibilities . . . assures durable beauty at low annual cost. And no matter what design you choose, you can obtain almost unlimited colors and tones when you use Atlas White Cement.

Whenever a job calls for lasting good looks, long-term economy and ease of cleaning, consider terrazzo made with Atlas White Cement. Ideal for wainscoating and stairways, too. For more information, see SWEET'S Catalog, Section 12g/Un and 3d/Un, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

AF-WCT-82



FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

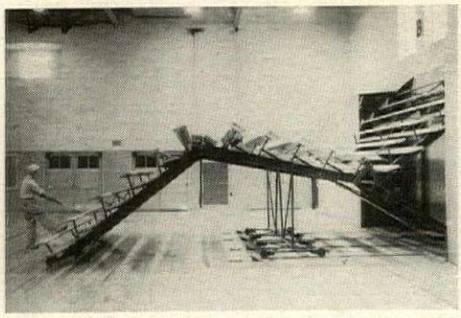
FOR TERRAZZO, PAINT, SLABS, STUCCO

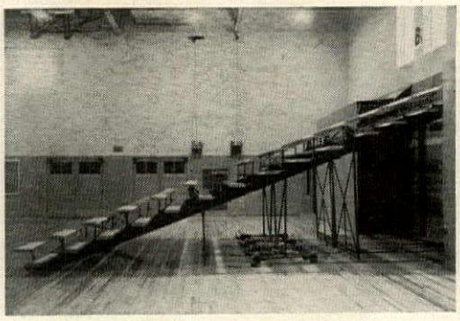
UNITED STATES STEEL HOUR—Televised alternate weeks—See your newspaper for time and station.

PRODUCTS

Continued from p. 210









CONSULTING ENGINEER ON INSTALLATION:
S. B. STRAUSS, ATLANTIC CITY

CONTRACTOR ON INSTALLATION:
CLAREMONT ENGINEERING, PHILA.

Now!

Aircoustat Silence at Atlantic City Convention Hall

Amazing Aircoustat ***packaged*** silencing for air conditioning is now quieting fan and air noise at this popular convention, trade show and exhibition headquarters.

Whether you are called upon to silence an existing air conditioning system or are designing a new installation, you'll find that Aircoustat will provide the practical, economical solution to fan and air noise . . . just as it has at Atlantic City.

This compact, completely ***packaged*** unit is easy to install. Incorporated as part of the duct work, Aircoustat requires no special tools for installing. And results are amazing: one ***7 foot*** Aircoustat reduces noise level below what ***100 feet*** of commercial duct lining could accomplish . . . with low pressure drop.

Selection is no problem. Aircoustat is so engineered that if it fits geometrically, it fits acoustically. Available in 14 standard sizes for use with all styles and sizes of ducts, and in 8 types to meet any desired conditions.

Write TODAY for complete information on

Aircoustat

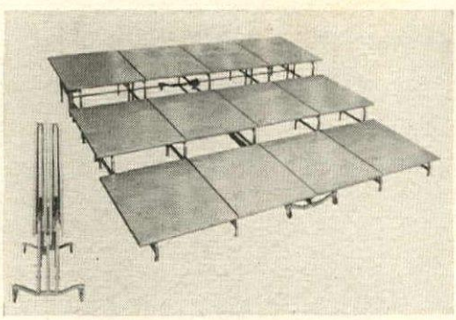
SILENCE SERVICE

Industrial Sound Control Inc.
45 Granby Street, Hartford 12, Conn.

DOUBLE-JOINTED GRANDSTAND stacks against gymnasium wall

Engineered to absorb the grandstand energies of demonstrable teen-agers—and provide adequate knee room when they do sit down—*Amweld Easi-Fold* bleachers are constructed of welded steel, supported by hinged heavy-duty I beams. Because of demands made in most schools on every square foot of space, *Amweld* has not sacrificed storability to sturdiness. One man in minutes can open and wheel out the well-balanced, single- or double-fold unit, or bend it back against the wall and slip a protective cover over the tracks. A unit 10 to 16 rows deep will fold up to 5′ for storage. The full 2′ back-to-back space allows more seats for long-legged youths in less room, since they do not have to sprawl sideways.

Manufacturer: American Welding & Mfg. Co., Institutional Products Div., Warren, Ohio.



TELESCOPIC BANDSTAND wheels away after the ball is over

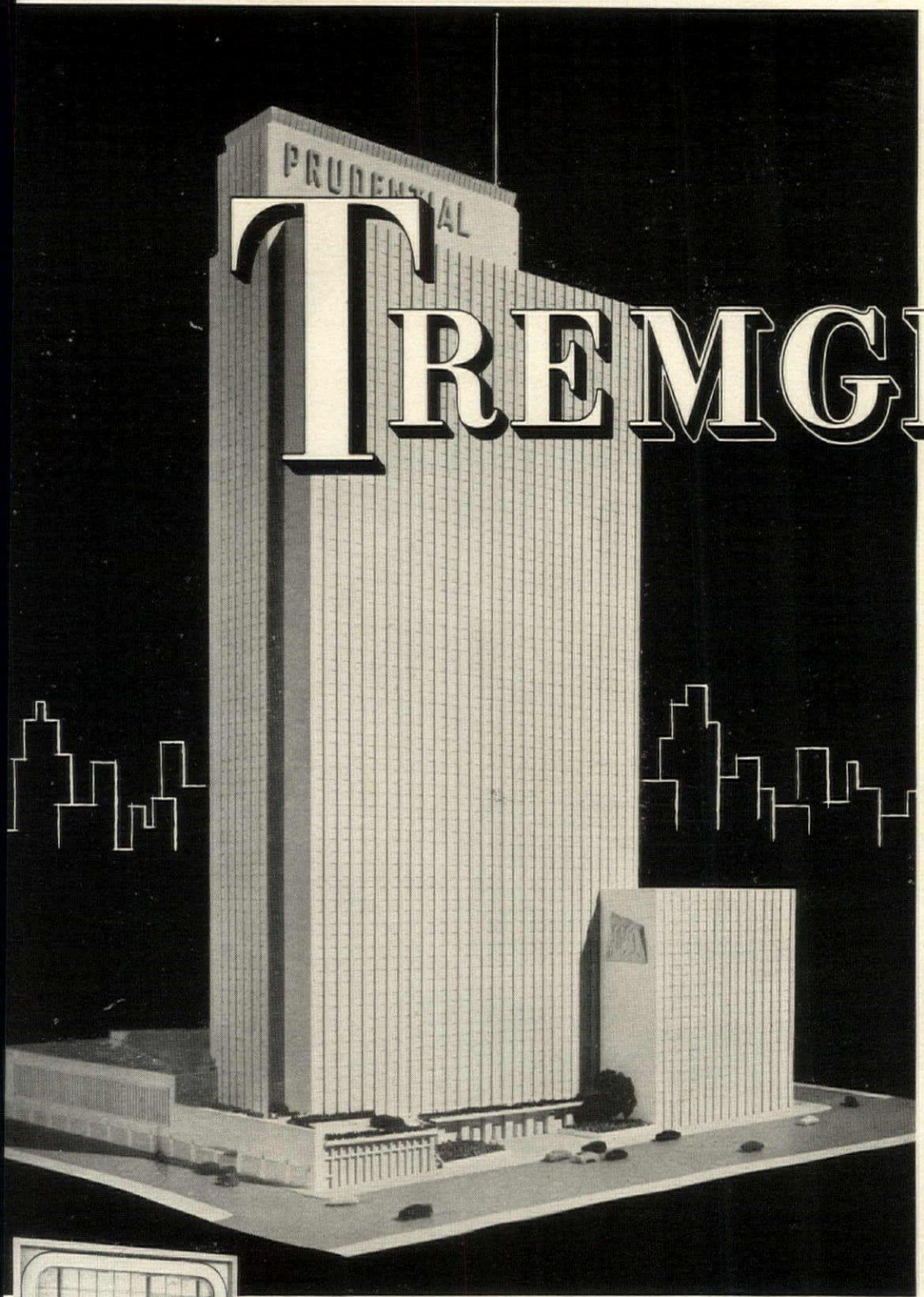
An Erickson folding bandstand can convert a school gym to prom ballroom in minutes. Marketed for clubs and community centers as well as schools where the same rooms are used for different activities, the new portable stand features a *Fold-A-Way* mechanism that telescopes the 48 sq. ft. three-tier platform into a compact unit on wheels. In its folded state, it will travel through narrow doorways and store in about the same space as a desk. Two or more units clamped together will support the local symphony.

Platforms are built of 1⅛″ plywood, mounted on 1⅛″-square steel tubing. Available in heights of 8″, 16″ and 24″, the 4′ x 12′ *Fold-A-Way* sells for $170; a 4′ x 10′, $155.

Manufacturer: Haldeman-Homme Mfg. Co., 2580 University Ave., St. Paul 14, Minn.

continued on p. 218

The *Safe* Glazing Specification Selected for Chicago's Tallest Building



TREMGLAZE

MASTIC GLAZING COMPOUND

Safe for Modern Glazing of Modern Windows

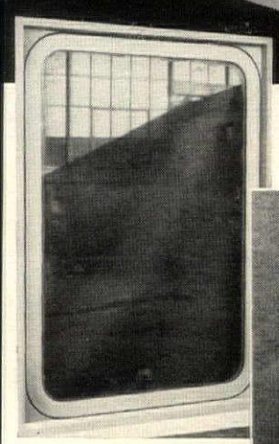
Tremglaze is the first glazing compound to combine fast setting, long elastic life. In tests in a special pressure chamber at Adams & Westlake laboratories, Tremglaze resisted wind and water infiltration at 50 MPH. Tremglaze Aluminum—requiring no painting—is the safe specification for *modern* glazing of modern aluminum, galvanized—bonderized and stainless steel windows.

ARCHITECTS:
Naess & Murphy

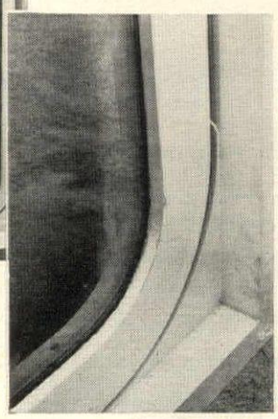
GENERAL CONTRACTOR:
George A. Fuller Co.

WINDOWS BY:
Adams & Westlake

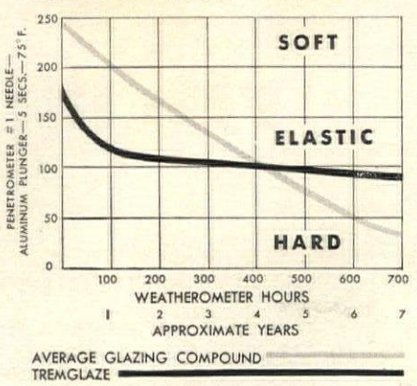
GLAZING CONTRACTOR:
The Pittsburgh Plate Glass Co.



TREMGLAZE PASSES EXACTING TESTS AT THE ADAMS AND WESTLAKE LABORATORIES



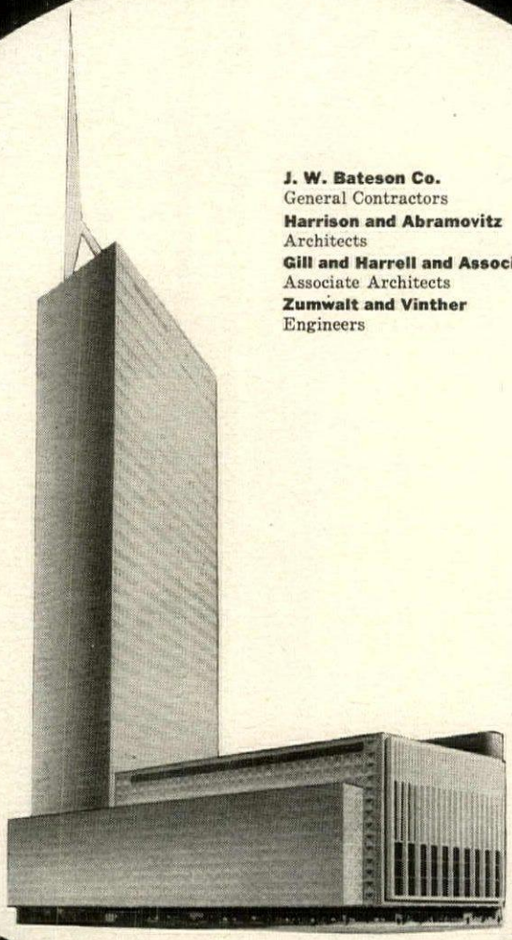
TREMGLAZE—SETS FAST—STAYS ELASTIC



TREMCO

PRODUCTS AND METHODS FOR BUILDING MAINTENANCE & CONSTRUCTION

THE TREMCO MANUFACTURING CO.
Cleveland 2, Ohio
THE TREMCO MFG. CO. (CANADA) LTD.
Leaside, Toronto, Ontario



J. W. Bateson Co.
General Contractors
Harrison and Abramovitz
Architects
Gill and Harrell and Associates
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New Texas Star . . . The Republic National Bank Building

Another complex and highly technical electrical installation entrusted to the proven know-how of Fischbach and Moore.

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FROM COAST TO COAST *An organization that has to its credit every conceivable type of electrical installation.*

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"FREES RENTAL SPACE"... among advantages cited on first "packaged" air conditioned office building in New York

usAIRco *dual circuit central station RK's cool each floor independently . . . provide 285 tons of refrigeration capacity*

To increase rental space in the multi-story rental office building recently completed at Queens Plaza, Long Island City, architects Wechsler & Schimenti specified usAIRco's selfcontained central station air conditioning equipment. By using these units, no cooling tower is needed on the roof, permitting construction of a penthouse for rental income.

A 30-ton dual circuit "Refrigerated Kooler-aire" (DRK) is located on each of the nine floors, a 15-ton DRK serves the penthouse and one section of the ninth floor. Each unit occupies an enclosed equipment room in the central service core of the structure. Each DRK has two complete refrigeration circuits, one or both of which operate automatically depending on load variation requirements . . . another important operating economy.

All the elements of a built-up system—blower section, compressor section and evaporative condenser—are contained in each unit. All component parts are factory tested and balanced, delivered in perfect order for immediate installation. Only three simple connections are necessary: to ducts, water supply and drain, and power supply. Extensive condenser water piping and refrigeration piping are unnecessary, resulting in a major building and operating economy.

Fresh air supply and exhaust air is handled by two shafts running the entire height of the building. Under the owner's plan of leasing full floors to individual tenants, metering of equipment is possible, because each floor's air conditioning system operates independently. Each tenant controls his own equipment, automatically regulated by wall thermostats.

Air conditioning contractor is J.W.Hubert Corp.,New York.



For Details Write Robert N. McLain

UNITED STATES AIR CONDITIONING CORPORATION

MINNEAPOLIS 14, MINNESOTA *Export. 13 E. 40th St., N. Y. 16, N. Y., U. S. A.*

usAIRco
30 YEARS OF AIR CONDITIONING

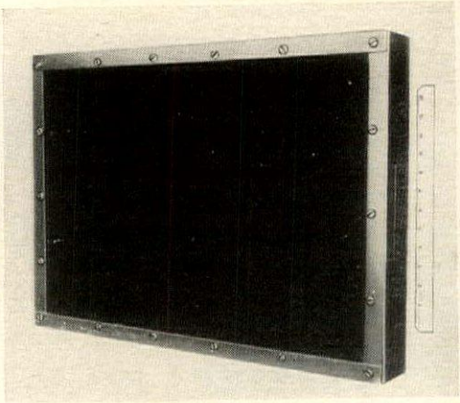


PRODUCTS

Continued from p. 214

FUME CONTROL takes smells out of industry, puts waste gases to work

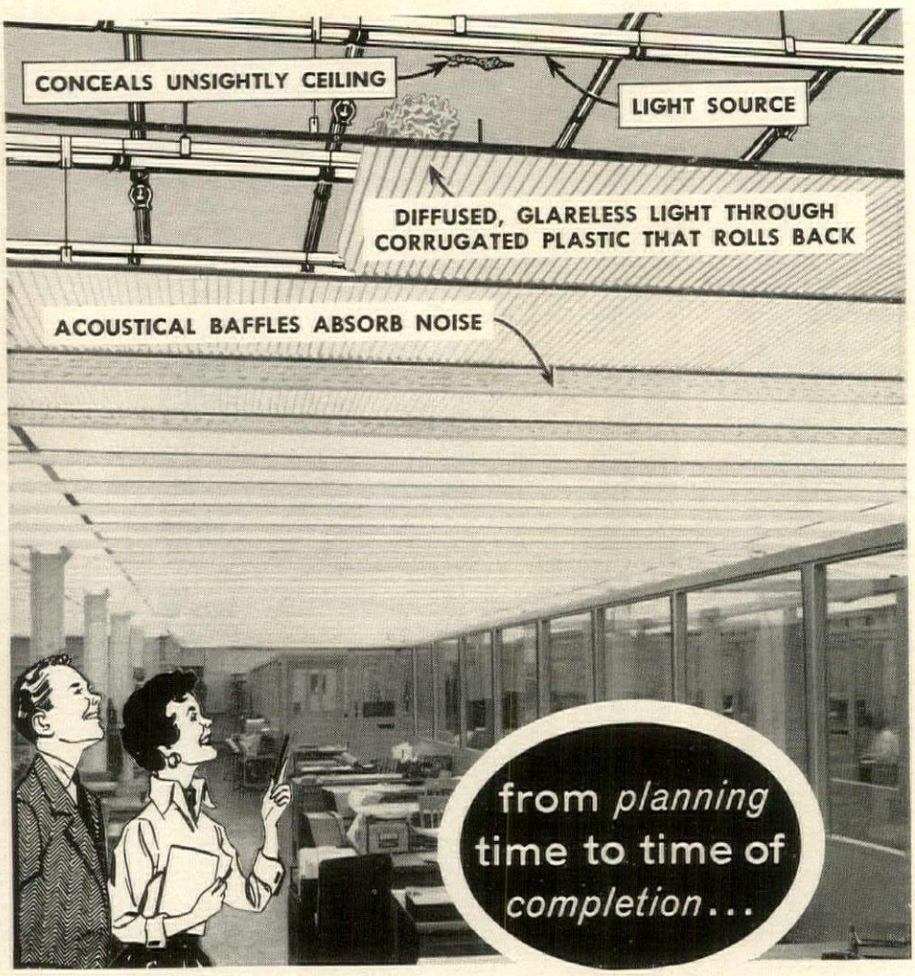
Platinum is helping rid congested industrial areas of polluting gases and fumes. Acting as the catalyst in the efficacious odor-control method developed by Catalytic Combustion, a platinum-coated chromium alloy mat affects a chemical reaction (without undergoing change itself or becoming part of the end products) to convert many noxious fumes into harmless odor-free and color-free gases.



Heat thrown off as a by-product of the oxidation can, with supplementary equipment, be captured and put to use.

The basic catalytic unit, weighing 30 lb., is adapted to various manufacturing processes and installed by the firm's own engineers. While installations may look quite different, mechanics are fundamentally the same: fumes are drawn from processing equipment, heated if need be, passed through a fan and discharged through the porous catalyst, minus smell and color. These gases are then available for heat recovery, reuse, or discharge to stack. The technique also can be applied to exhausts of nonindustrial furnaces and existing equipment to eliminate fire hazards and duct condensate. However, if fumes contain large amounts of sand, fly ash and similar substances, these unburnable solids must be removed by dust collectors before catalytic incineration

Manufacturer: Catalytic Combustion Corp., 4544 Grand River Ave., Detroit 8, Mich.



will *your* specifications be outdated?...see the *newest!* **See an Acusti-Luminus Ceiling near you!** *Lighting, sound control, air flow combined!*

The trend is to allover ceilings of glareless, shadowless light that also provide sound control and a ceiling-wide plenum for air conditioning and heating. ACUSTI-LUMINUS CEILINGS are easy to maintain. They're made from unbreakable, corrugated LUMI-PLASTIC and labeled by UL for installation under sprinkler systems. Three essential elements for modern interiors are combined at a cost that's lower than conventional illumination and sound control alone.

over 4500 installations!

See the functional beauty of an ACUSTI-LUMINUS CEILING for yourself... *send the coupon below for* free *illustrated booklet and location of an installation near you.*



Luminous Ceilings, Inc.
Dept. A-I, 2500 W. North Ave.
Chicago 47, Ill.

Please send me your free illustrated booklet and tell me where I can see an ACUSTI-LUMINUS CEILING installation!

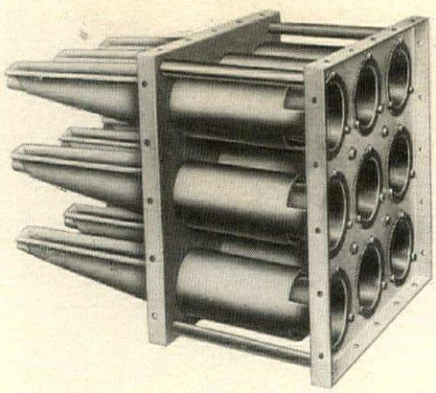
Name and title_____

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Firm name_____

Address_____

City & State_____



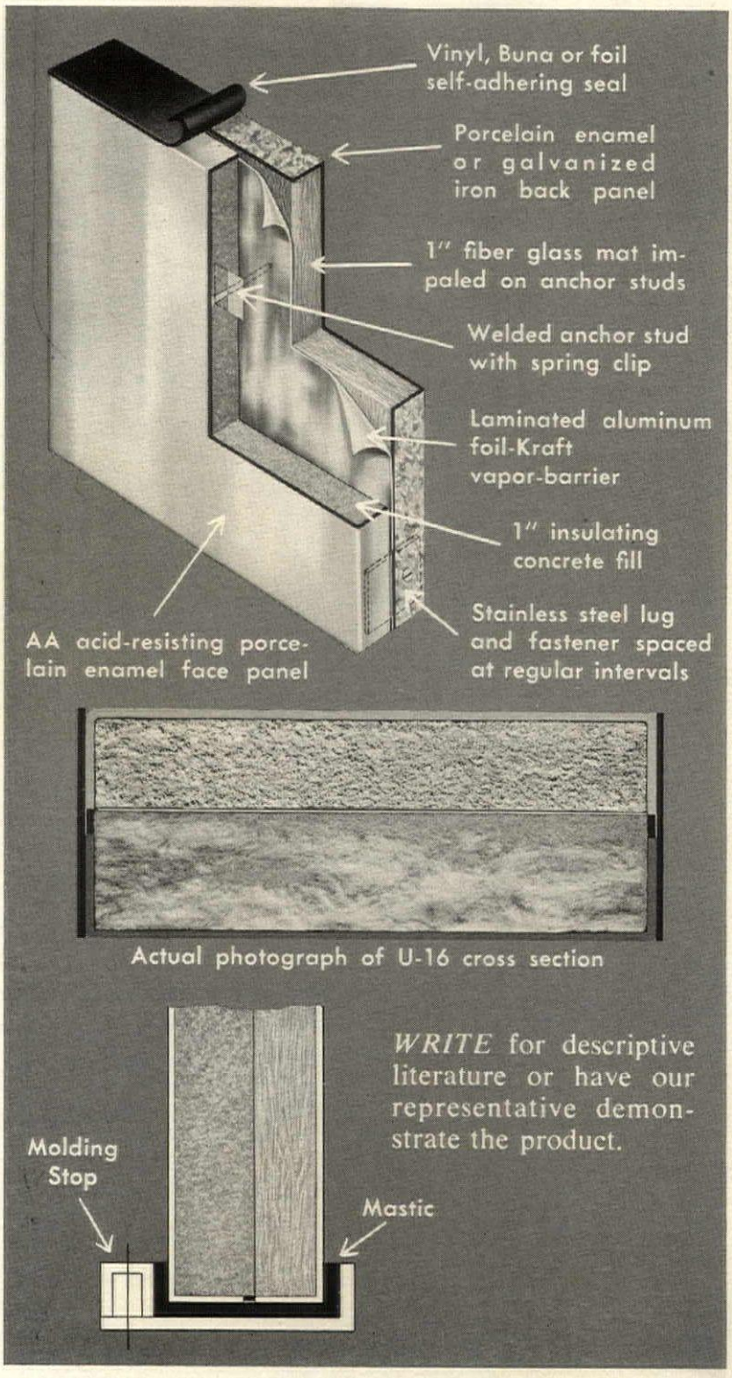
DUST AND ASH COLLECTOR works effectively on fluctuating air volumes

Power plants burning pulverized coal and rock products—and urban areas near them—can benefit from equipment such as the American Air Filter's new dry granular dust collector, the *AMERclone*. Inverting the flow pattern of most centrifugal units, the compact collector operates well over a wide range of air volumes. Key to its outside-in behavior is the conical shape of *AMERclone*'s inlet. Dust-laden air enters the small end at an angle and the particles are sent swirling against the walls of the cone while clean air travels through without altering course.

continued on p. 222

NOW a U-16 PANEL for Curtain Walls

Porcelain Enameled



Actual photograph of U-16 cross section

WRITE for descriptive literature or have our representative demonstrate the product.

only 2" thick
9 lbs. per sq. ft.
.16 U-factor
broad size range

Now you can specify a standardized curtain wall panel that offers the advantages of porcelain enamel . . . gives an excellent U-factor even in 2" thickness . . . offers flatness and rigidity . . . positive mechanical fastening . . . incombustibility . . . plus an effective vapor-barrier and other features you have been looking for.

And, you can utilize the lifetime durability of porcelain enamel in 50 standard colors . . . any special color . . . or a host of multi-color stipple variations.

The Erie U-16 panel is mechanically sound, tightly sealed on all sides, and erects with all edges shielded from the weather. It will adapt to any mullion bar suspension system and is available in sizes up to 32 square feet. Worth investigating. Why not today?

THE Erie ENAMELING COMPANY
ERIE, PENNSYLVANIA
CHICAGO · PHILADELPHIA

Now!

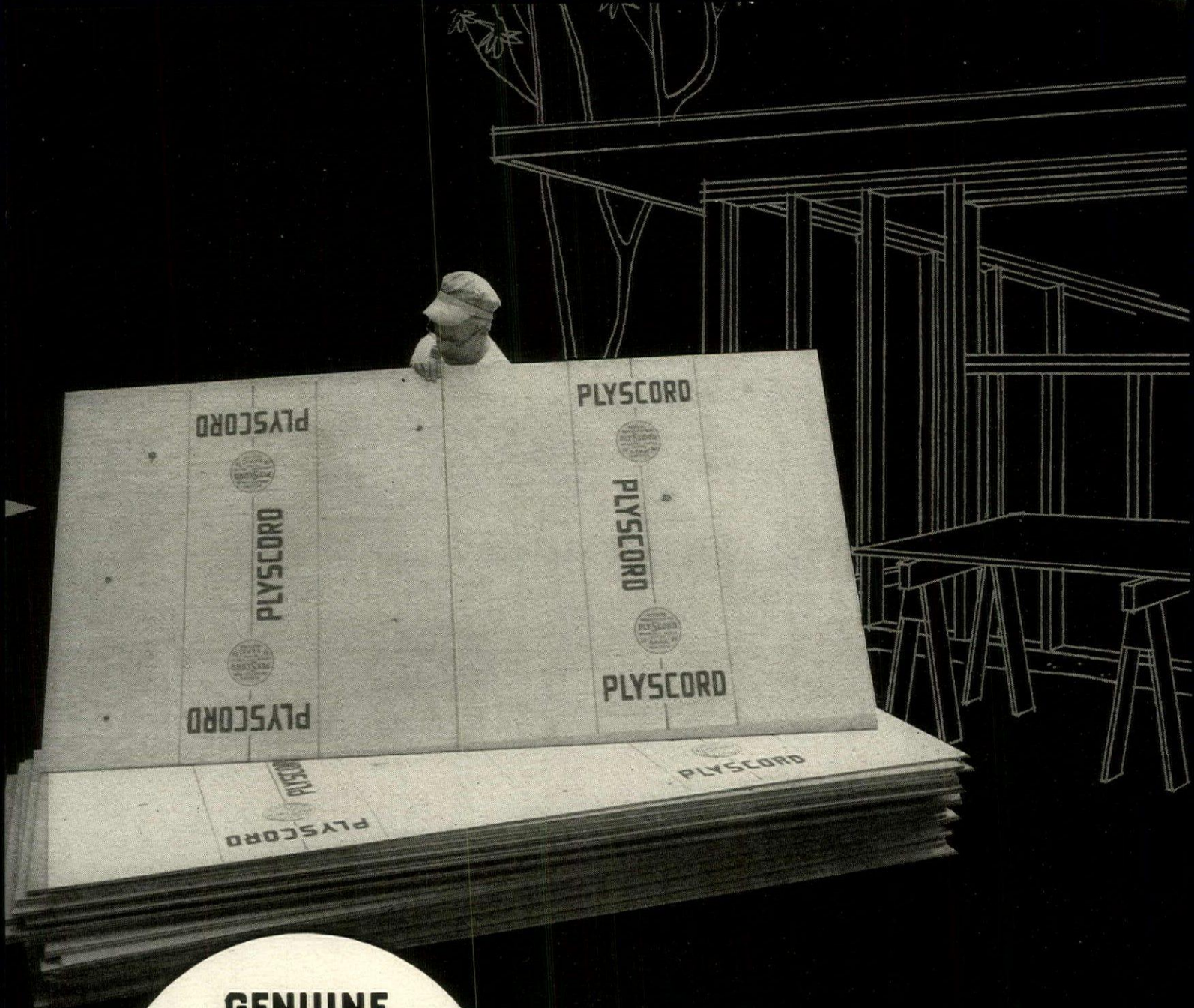
Genuine PLYSCORD® Sheathing Marked in Big, Bold Letters for Positive Identification

It's easier than ever to be sure of uniform quality when you buy fir plywood sheathing. Big, king-size marking identifies genuine PLYSCORD, the only plywood sheathing quality-tested by DFPA* to protect the buyer and assure performance.

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



NEW: A handy slide rule giving thickness and nailing recommendations for Plyscord sheathing on various stud, joist and rafter spacings. Free. Write DFPA, Tacoma 2, Washington.



GENUINE

DOUGLAS FIR PLYWOOD

PLYSCORD®

INTERIOR TYPE GRADE C-D

SHEATHING

DFPA® TESTED QUALITY

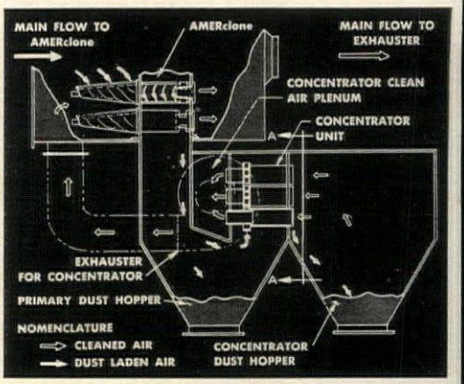
You can be sure
when you see this
DFPA Trademark

PRODUCTS

Continued from p. 218

This straight-through passage allows the collectors to handle whatever dust concentrations come along with equal effectiveness—a feature particularly good in eliminating fly ash. Nine tubes with a face area 20″ square make up one *AMERclone* cell rated at 3,000 cfm; any number of these can be grouped as needed.

Besides the cell, a basic *AMERclone* unit includes a secondary exhauster for disposal of 10% of primary air and collected dust



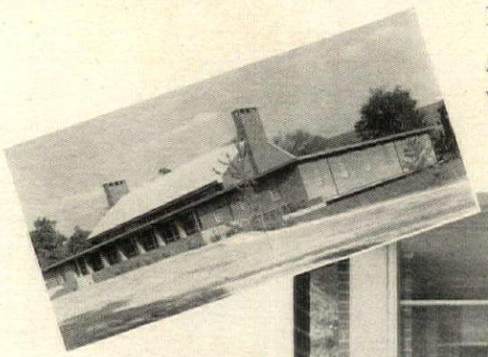
bled off by the cones. In a test installation on a boiler burning pulverized coal and rated at 300,000 lb. of steam per hour *AMERclones* trapped 1½ tons of fly ash per hour. Standard units, made of cast gray iron, are used for temperatures up to 750° F.; for hotter applications, equipment is fabricated of special materials.

Manufacturer: American Air Filter Co., Inc., Dust Control Div., Louisville 8, Ky.

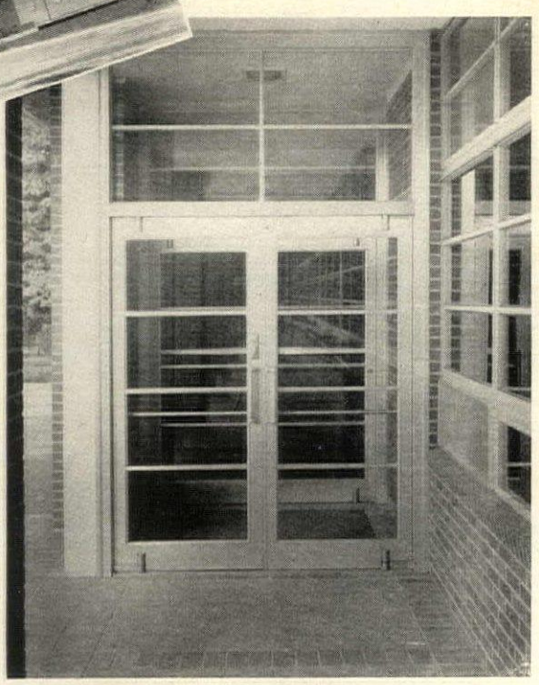
VANDERBILT *University*

NASHVILLE, TENN.

ARCHITECTS
Warfield & Associates



16 Balanced Door Units in the dining hall of Vanderbilt U.



more . . . . Ellison doors



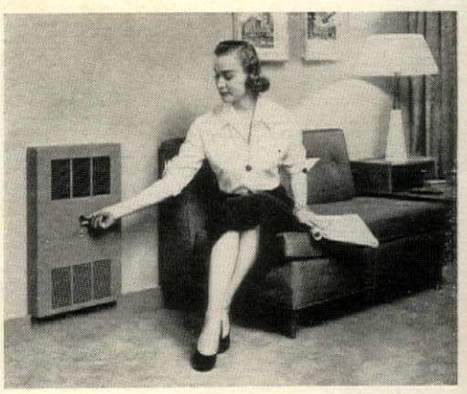
The Door that lets TRAFFIC through QUICKLY

Ellison

ELLISON BRONZE CO.
Jamestown, New York

representatives in 73 principal cities in the United States and Canada

the BALANCED DOOR



COMPACT ROOM CONDITIONER uses forced water for quick-response heating and cooling

Installed on any one- or two-pipe central forced hot or chilled water system, the twin-fan *Dual Vector* provides room-zoned air conditioning at modest price. Sized to fit between studs in wood frame construction, the 25½"-high air conditioner is practical for motels and other small structures as well as apartments and hotels—in fact for any building requiring rapid response heating and cooling, controllable in each room either manually or by thermostat. Its 3⅝"-deep wall box fits into the studs; just the 2-⅜" cover panel extends from the wall. Heating capacities of the two models (the larger is 32" wide) are 9,200 and 20,500 Btu's with 200° F. water; cooling 5,200 and 10,500 with 42° F. water. Selling to the trade for about $58 and $98 ($10 more with thermostat), each unit includes a removable filter and a two-speed double fan.

Manufacturer: Union Asbestors & Rubber Co., 332 South Michigan Ave., Chicago.

continued on p. 226

modern design calls for COOLITE



New Thomy Lafon Elementary School, New Orleans, La.; Curtis & Davis, Architects; A & O Builders, General Contractors

Mississippi Heat Absorbing, Glare Reducing Glass Brightens Classrooms Without Excessive Solor Heat or Eye-Fatiguing "Raw" Sunlight



The Thomy Lafon School, New Orleans, La., acknowledged to be an outstanding modern design, makes extensive use of Coolite, Heat Absorbing, Glare Reducing Glass. It's unique qualities fit the aim of the architects and engineers, Curtis & Davis, to obtain "the ultimate in scientific achievement for natural lighting . . . a truly functional architecture adapted to human values and physical needs". For Coolite floods classrooms with softened, glare-free light for easier seeing . . . absorbs up to 50% of the solar heat to help keep interiors comfortable.

Coolite removes the harmful qualities of "raw" sunlight . . . helps students see better, feel better, work better. Coolite permits use of large glass areas without undue heat . . . makes rooms appear larger, friendlier.

Consider Coolite for your classrooms when you build or remodel. Translucent glass by Mississippi for better daylight illumination is available in a wide variety of patterns and surface finishes to fit any daylighting need within any school budget.

Mississippi maintains an experimental school building on factory grounds for the study of daylighting. Take advantage of the company's wide experience. It's technicians are ready to help you with every daylighting problem.



Send today for catalog, "Better Daylighting For Schools." Write Dept. 14.

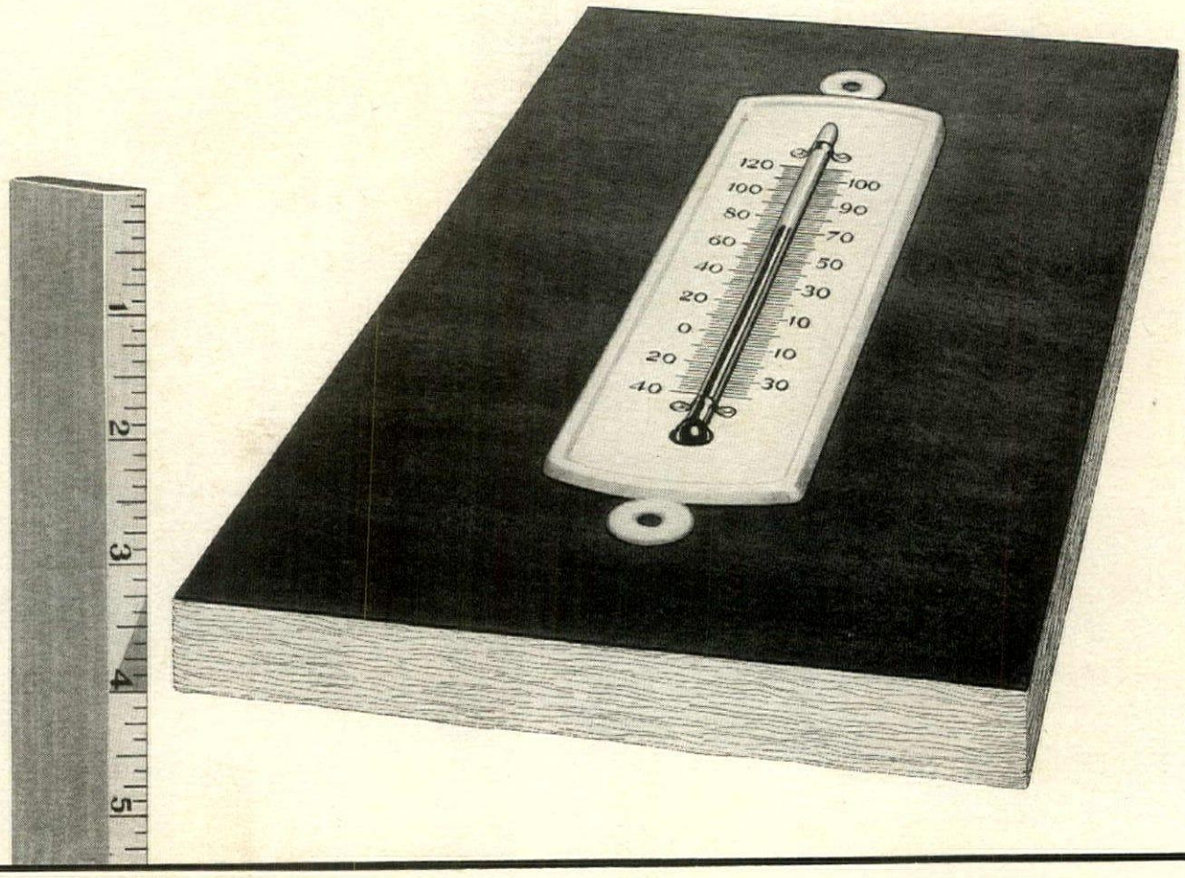
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NEW YORK • CHICAGO • FULLERTON, CALIF.

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

It's not thickness but thermal efficiency that counts



That's why more architects specify Fiberglas than any other roof insulation!

Once upon a time it was the practice of architects to specify roof insulation by thickness. Today, this practice is obsolete because only ¾-*inch* of Fiberglas* does the same insulating job as a *full inch* of most other materials. In addition to its exceptionally low "k" factor, Fiberglas Roof Insulation is fire-safe, dimensionally stable, rot-proof, moisture-resistant and resilient enough to withstand normal traffic loads without rupture. Its light weight and easy workability also save time and labor costs during application.

For complete technical data, see our listing in Sweet's File, or write either to one of the distributors listed below, or to Owens-Corning Fiberglas Corporation, Dept. 171-B, Toledo 1, Ohio.

Distributed East of the Rockies by

Certain-teed BUILDING PRODUCTS

FLINTKOTE BUILDING MATERIALS

RUBEROID

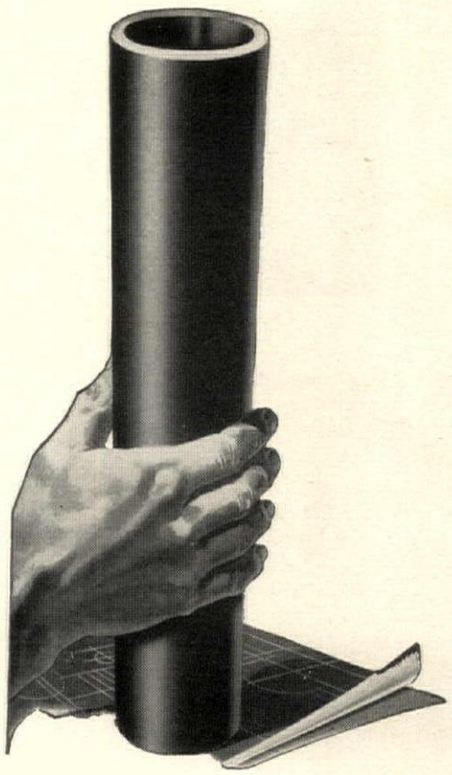
and through Fiberglas Sales Offices

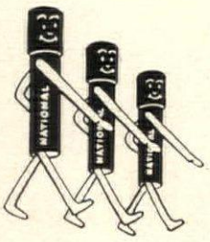
OWENS-CORNING FIBERGLAS

★Fiberglas is the trade-mark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation.

In all types of building and industrial applications...

NATIONAL PIPE IS CHOSEN CONSISTENTLY *because*—





It's uniform throughout—National Pipe is uniform in metallic structure, ductility, strength, corrosion resistance, surface finish and diameter.



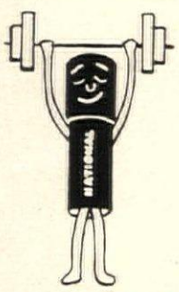
It threads and cuts easily—Absence of slag inclusions, laminations and blisters assures smooth, strong threads . . . clean cuts.



It coils and bends well—National Pipe has that extra strength and ductility so necessary to meet the demands for smooth, uniform coils and bends.



It makes sound joints—Uniformity and accuracy in manufacturing have made unequalled pipe jointing records for National Pipe . . . whether welded or threaded.



It's strong—Close metallurgical control of chemical and physical properties gives National Steel Pipe "built-in" strength.



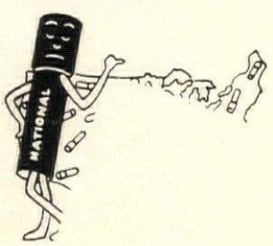
It's rigidly controlled—From the raw material to the finished product, one organization has rigid control over the manufacturing steps that produce National Steel Pipe.



It's thoroughly tested—Each and every stage of production is carefully checked by the finest instruments . . . the most experienced men.



It's constantly improved—For over 60 years, National Steel Pipe has constantly been improved to meet the most difficult requirements.



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NATIONAL *Steel*

SEE THE UNITED STATES STEEL HOUR. It's a full-hour TV program presented every other week by United States Steel. C

UNITED STATES

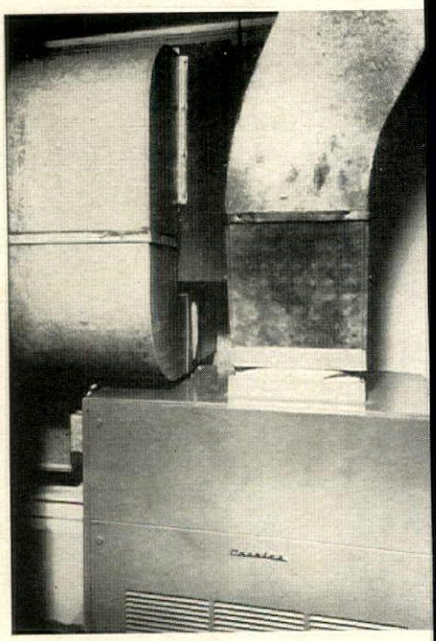
PRODUCTS

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WATERLESS AIR CONDITIONING packaged for commercial use

Grown-up models of the no-water air-conditioner package Carrier developed three years ago for the home market are now going into big buildings. Intended for use where water supply may be limited or restricted or where there are piping difficulties, these new *Weathermaker* two-piece packages employ air-cooled refrigeration. Neatly boxed, the main unit which circulates the cool, filtered, de-



humidified air can be installed directly in space to be conditioned or in a concealed to work via ductwork. Addition of a hea coil gives the Weathermaker year-ro utility.

Except for the air-cooled condenser components are housed in the cabinet; condenser may be installed on a roof or back, or even inside the building with d to bring in its supply of air. Prices, inclu installation but assuming no ductwork, ra from $1,000 for a 2-hp model to $2,900 the 7½-hp unit. In many cases requiring bigger cooling capacity, *Weathermakers* in multiple still are economical becaus their initial package price and low opera cost.

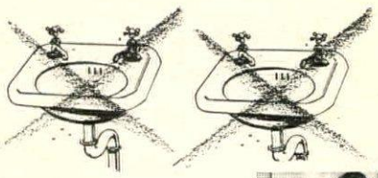
Manufacturer: Carrier Corp., Syracuse,

Each BRADLEY Duo-Washfountain

Sprayhead replaces faucets

Bowl is self-flushing

Replaces two bowls like these



Foot-Pedal controls water supply. No spring faucets needed to stop waste of water.



Typical installation in women's washroom.

Washing facilities for two are provided for by each foot-controlled Bradley Duo-Washfountain. The number of piping connections is thus cut in half and water waste is prevented.

There are no faucets to touch or maintain, since Bradleys provide clean running water from a central sprayhead. Foot-control automatically cuts off water supply and eliminates infectious contacts. The self-flushing bowl prevents collection of contaminating water.

Ultra-sanitary Bradley Washfountains are widely used in modern factories, mills, offices, schools and institutions. To assist in specification preparation, write today for Bulletin K-958 . . .

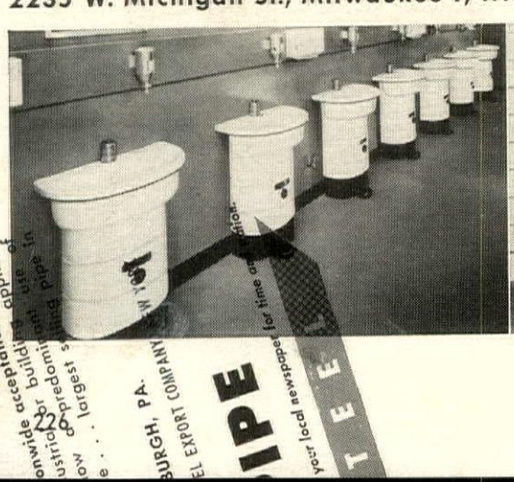


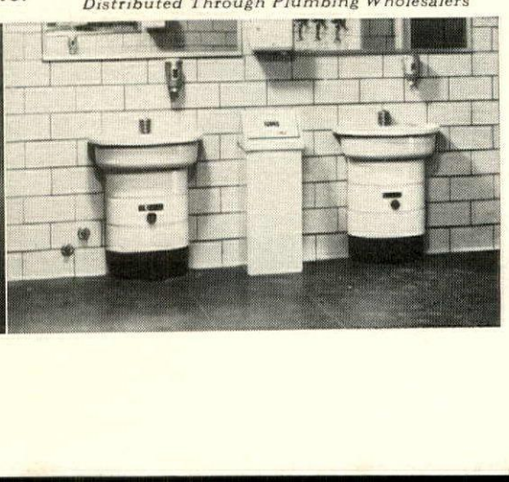
For details and specifications, write for free copy of Bulletin K-958

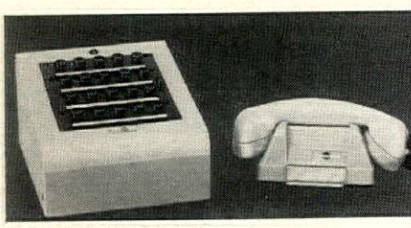
BRADLEY WASHFOUNTAIN CO.
2235 W. Michigan St., Milwaukee 1, Wis.

BRADLEY Duo Washfountains

Distributed Through Plumbing Wholesalers







MOTEL INTERCOM SYSTEM is easily inst with screw driver

An architect working on a motel can specify (at modest cost to the client) h type intercommunications. *Motel-O-Phon* private telephone system operating thro a push-button central station, enables gu and manager to call any room in the m Each control unit can handle 20 phones, central stations can be interconnected to commodate up to 200.

Remarkably easy to install, each unit its own power supply which is plugged a regular 110-v. A.C. wall outlet; a two-ductor wire is run from each phone to central station. All connections can be m with a screw driver. List price of the g plastic house-phone instrument is $29 the 20-line control box is about $350; plug-in power-supply unit (good for 20 200 lines): $150.

Manufacturer: Connecticut Telephone Electric Co., Meriden, Conn.

continued on p.

CHAIRS FOR CHILDREN, BY HARRY BERTOIA—

Identical to the famous original version,
but scaled down in proportion.
Sturdy enough for the most active
youngster—and for teacher too.
Designed to introduce new comfort and
handsome new contemporary design
to the children's room.
In two heights—11" and 14".



KNOLL ASSOCIATES, INC., 575 MADISON AVENUE, NEW YORK 22 • BOSTON, CHICAGO, DALLAS, DETROIT, MIAMI, WASHINGTON

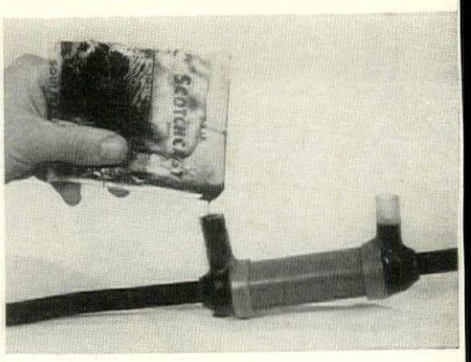
PRODUCTS

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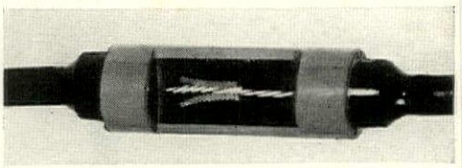
SPLICING KIT makes vapor-sealed cable splice from a squeeze bag



All ingredients for turning out a factory-quality cable splice in the field easily and quickly are packaged in the *Scotchcast* splicing kit. Proving excellent protection for electrical connections under difficult conditions—test applications have been made underground and underwater—the new technique is based on the use of the *Unipak*, a

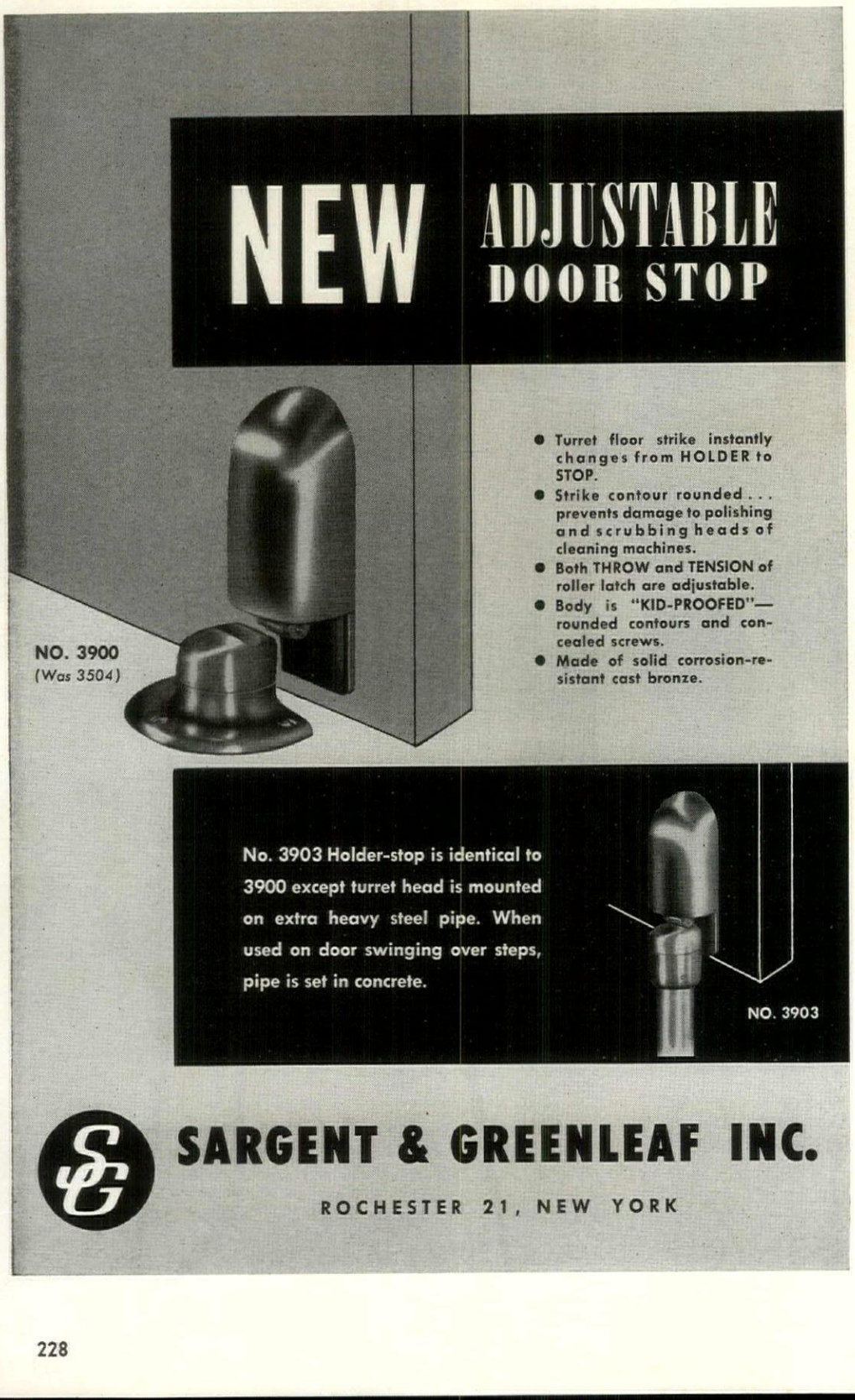


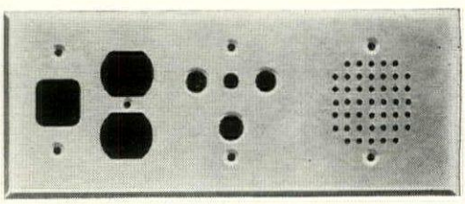
two-part plastic bag containing epoxy resin and activator. A squeeze ruptures an inner seal of the *Unipak* and kneading mixes resin and hardener into epoxy casting material—an embedment used on myriad assembly-line parts for its high dielectric and excellent adhesion characteristics, as well as its moisture resistance. In use, the *Scotchcast* vinyl molds are slipped on the wire ends, spring connectors turned on with the fingers and the bag contents squeezed into the sprews (a kind of hand-powered injection molding process) to hermetically seal the splice in epoxy. The



whole operation takes about 15 to 20 minutes. No heat is needed and the only tool is a pocket knife used for stripping the two one-use molds. Suitable for wire sizes 10 to 4 Awg, the kit sells for $4.66 in single orders; $3.03 each in orders of 1,000.

Manufacturer: Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul, Minn.





CUSTOM FACE PLATES for multiple outlets

School, hospital and hotel architects and electrical contractors who have been using face plates in tandem for ganged electrical outlet boxes can now bring these small but bothersome detail problems to Colonial Electric, a Cleveland firm which takes on single job-lots involving special stamping and finishing. One- to six-gang face plates, with openings for tumbler or push-button switches, pilot lamps, telephone outlets, etc., in any arrangement or sequence, are available at prices ranging from 18¢ to $1.40; and sizes over six-gang are supplied on special order. Made of stainless steel, the custom plates are satin finished and lacquer coated; black phenolic plates are also available.

Manufacturer: Colonial Electric Co., 11462 Euclid Ave., Cleveland, Ohio.

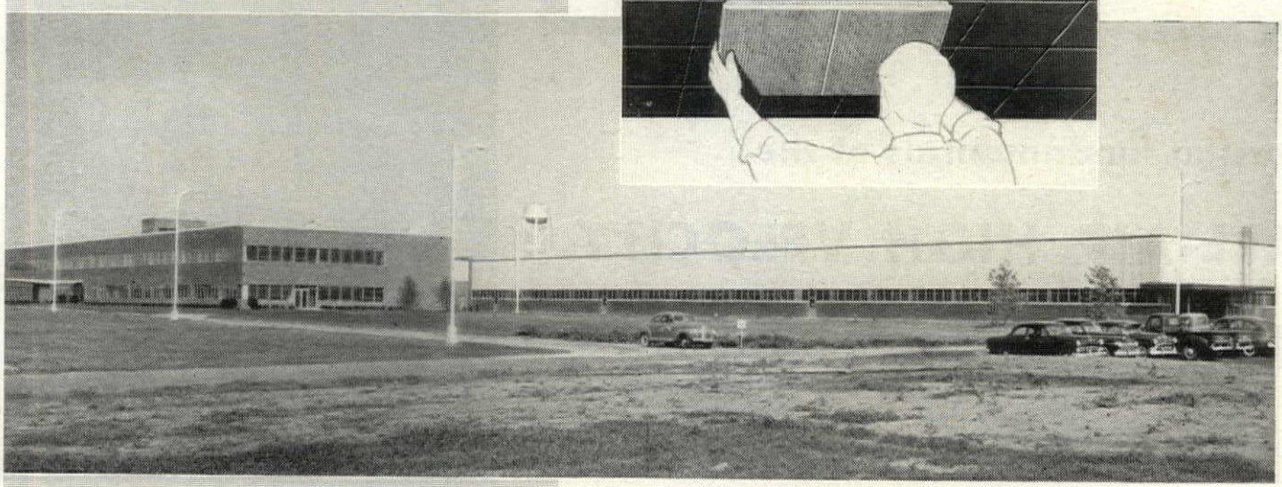
continued on p. 232

IDEAL "INDOOR WEATHER" WITH... multi-vent®

LOW VELOCITY AIR DIFFUSERS

FOR WESTINGHOUSE





Westinghouse Meter Division Plant, Raleigh, N. C. Robert and Company Associates, Atlanta, architects and engineers. Virginia Engineering Company, Inc., Newport News, General Contractors.

Partial list of prominent companies which have recently installed Multi-Vent in offices, plants and laboratories.

Boeing Airplane Co.
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FOR GENERAL OFFICES—LABORATORIES ENGINEERING DEPARTMENTS—TEST ROOMS

As in the Westinghouse plant, illustrated above, and in other industrial plants, Multi-Vent is specified where true air conditioned comfort or accurate control of air movement, temperature and humidity is demanded.

Because Multi-Vent is designed and engineered for easy installation and to handle high loads and high ventilating requirements, with a uniform low rate of room-air motion, it meets the most exacting demands of industrial processing and scientific research.

Flush or completely concealed in the ceiling, Multi-Vent distributes air at low-velocities by gentle pressure displacement, thus providing a degree of air conditioned comfort unmatched by any other diffuser. Write for detailed literature.

THE PYLE-NATIONAL COMPANY
1376 North Kostner Avenue, Chicago 51, Illinois

MULTI-VENT DIVISION
Sales and Engineering Representatives in Principal Cities of United States and Canada





Design fundamentals of the

ALL-AIR HIGH VELOCITY distribution system

By F. J. KURTH | *Vice President of Engineering*

Anemostat Corporation of America

A national survey reveals that today, more than ever, engineers are studying, learning and using high velocity-high temperature differential air distribution. Here is a brief discussion of the advantages of the all-air high velocity system over conventional and mixed cycle (air and water) systems.

1. No Coils — No Clogging — No Odor—There are no coils in the all-air high velocity units. Damp coils collect lint and emit dank odors, and the coils must be cleaned periodically.

2. No Individual Fans — Filters — or Electric Motors — The all-air units operate entirely with air which is processed in the main equipment rooms. The 100% induction units utilize the kinetic energy of the high velocity air to mix primary air with the room air.

3. No Conflict of Trades — The all-air units are installed by the sheet metal trades only.

4. More Effective Use of Outside Air in Spring and Fall— More primary air is delivered to the all-air units than to induction coil units. This allows the engineers to operate in the Spring and Fall on outside air and thereby save refrigeration.

All-air high velocity units offer scientific air diffusion. Each high velocity unit is provided with an aspirating or high induction type air diffuser which is scientifically designed to diffuse air without drafts. Each unit can be pressure balanced by an easy-to-operate balancing device and a calibrated orifice. In fact, the Anemostat all-air high velocity system can be balanced more accurately than other systems and in less than half the time required to balance a low velocity system.

High velocity units require practically no maintenance after installation. They have valves of the non-corrosive, die-cast, "rocket-socket" type, which are patented by the Anemostat Corporation of America. All units can be adapted for the following variations:

1. Single duct for zone control or individual thermostatic or manual remote control.

2. Dual duct for thermostatic control or any other type of control.

3. Single or dual duct units with the diffuser fastened to the unit, or remote from the attenuating unit.

4. Under-the-window, sidewall or ceiling type installations.

5. Can be provided with standard aspirating diffusers or 100% induction type diffusers.

6. Induction type units handle temperature differentials up to 33° below ambient.

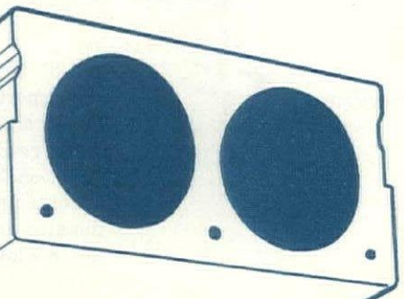
Selection Manual Contains Data on High Velocity Units

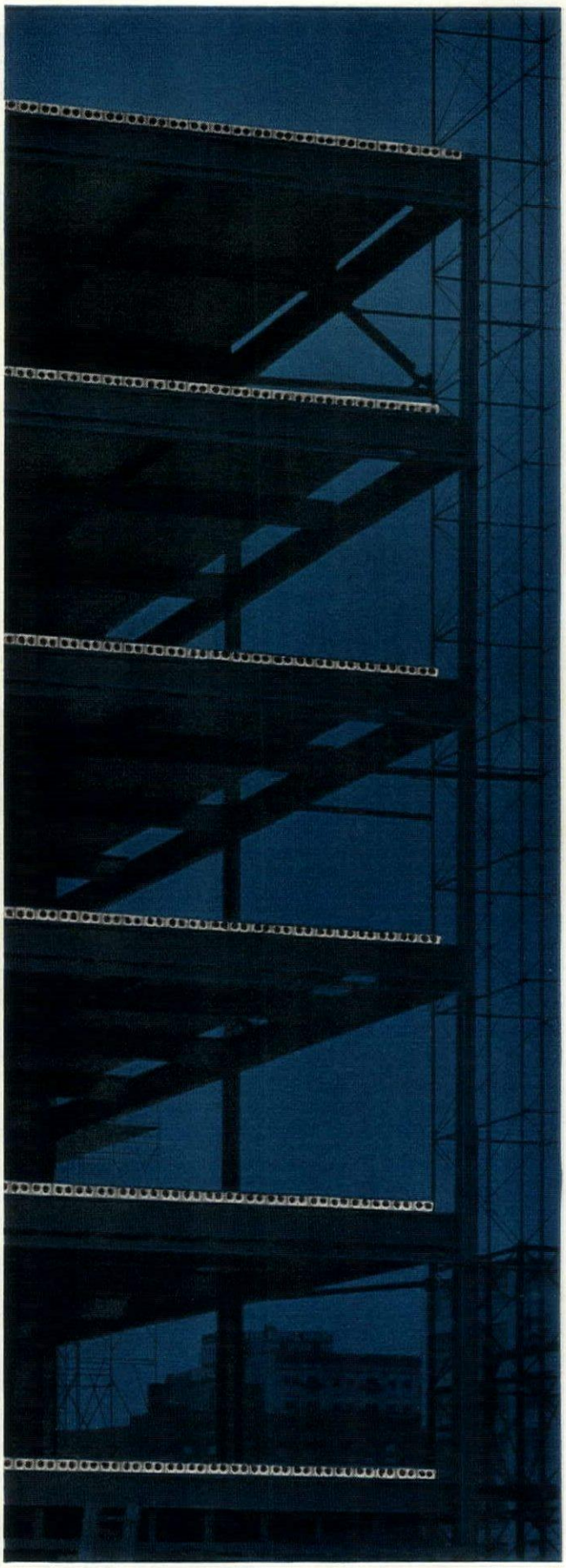


New Selection Manual 50 gives extensive selection and application data on high velocity all-air distribution systems. Write on your business letterhead for Selection Manual 50 to the Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.

lollow Cores

flexicore
ecast floors
ovide ducts
r heating or wiring systems





black circles along each floor of this building are the hollow cores of fire-safe core slabs. They run through each slab from end to end.

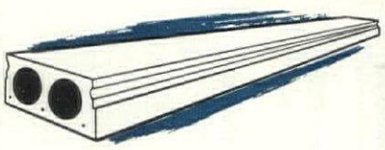
ow would *you* use built-in raceways like these?

. E. Beyster and Associates, used every fifth core for telephone cable or electric g in this addition to a building used by The Michigan Bell Telephone Co. Other lers use the cores for hot air ducts or piping.

addition to many such money-saving uses, these cores cut dead load nearly , increasing the load capacity of the structural concrete floor.

lexicore is dependable, too. It's precast to the exact lengths you need, with a fully controlled mix and pre-stressed reinforcing steel accurately positioned. Be- e slabs are mass-produced and quickly installed the cost is low. You save the ance, expense and delays of formwork and on-the-job pours. You save con- ction time, too (several months on large projects) because it's easy to erect 2500 000 ft. a day in almost any weather.

all the Flexicore manufacturer nearest you for full information or a look at nearby icore installations. There's no obligation at all.



exicore slabs are . . .

low cost, kiln-cured concrete units—prefabricated to order in inch variations of length reinforced for specified loading. Grouting of joint keys locks these monolithically cast s into a single, rigid floor or roof unit. Slabs clear-span up to 22′ 6″ or 26′ 8″, depend- on cross-sections. Cross-sections range from 6″ x 12″ to 8″ x 16″. Hollow cores, 4⅛″ ⅛″ in diameter, increase load carrying capacity by reducing dead load. Smooth under- s form finished ceiling without plaster—require only caulking and painting.

llow cores for heating and cooling

ow cores of Flexicore floors make possible a *ect comfort* heating system that combines circu- g air and radiant heat. It is widely used for story structures. The same duct system can be for summer cooling.

Write Nearest Manufacturer Below For This Literature

Flexicore Catalog
Flexicore Split-System Heating
Job Report on Cooling
How to Erect Flexicore
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Florida—Tampa
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REdwood 9705

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Arrowcrete Corporation
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GRand 9-2216

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Universal Concrete Pipe Co.
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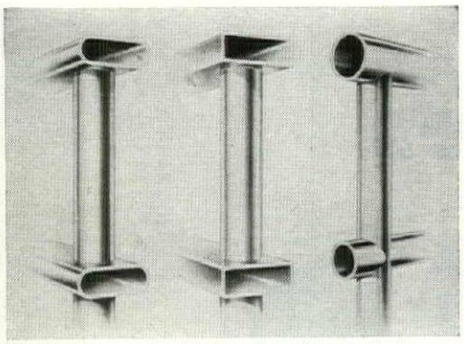
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Murray Associates Ltd.
EMpire 4-4362

Puerto Rico—
Rio Piedras
Flexicore of Puerto Rico, Inc.
Phone Rio Piedras 1205

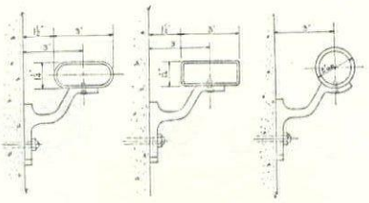
PRODUCTS

Continued from p. 228



BOLTED RAILINGS offer stiff resistance to shimmy and impact

Variations in color and surface texture of welded joints are obviated in *Econo Rail* tubular aluminum and bronze railings. Using bolt-through construction to tie the lightweight ⅛"-thick extruded members together, the rigidly reinforced joints are vibration-free and impact resistant. *Econo Rails* come with 2" and 2½" o.d. round cross members

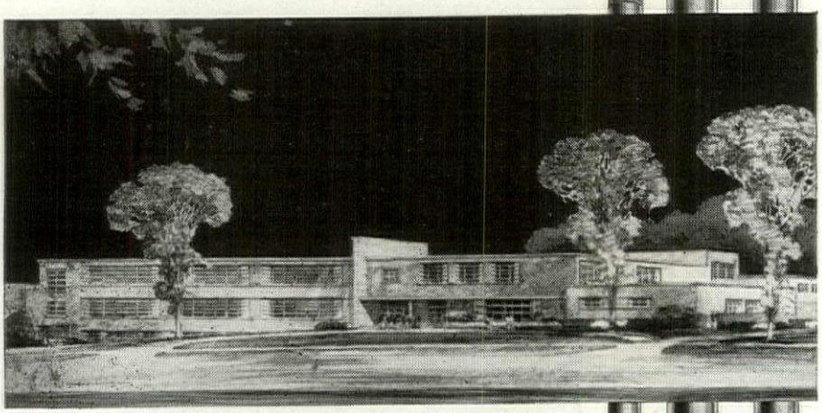


and 3"-wide ovals and rectangular sections, all supported by 1¾"-round uprights. Prices for straight runs of the factory-assembled units, ready to fasten in place, range from $3.45, one rail high, to $8.45 for three.

Contemporary designers who hanker occasionally—and understandably—to work with the mellow brass-copper alloys in modern form will be pleased that the same firm is also fabricating a new line of narrow-stile extruded bronze doors, with or without transoms and sidelights, at production-line prices. Folders of details are available on both railings and doors.

Manufacturer: Newman Brothers, Inc., Cincinnati 3, Ohio

Designed to serve many generations...



EDGEWOOD SCHOOL, HIGHLAND PARK, ILLINOIS
ARCHITECT: CHILDS & SMITH, CHICAGO
PLUMBING CONTRACTOR: J. G. WEBER, CHICAGO

and Clow "IPS"* (threaded) Cast Iron Pipe will last the life of the building!

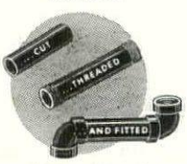
Highland Park is one of Chicago's better North Shore suburbs. Gracious design and functional superiority are prerequisites of its buildings. Thus, even its most time-hallowed structures are pleasantly distinctive today. And its new Edgewood School, low in line and embodying all that's truly modern in equipment as well as design, will remain a credit to the community a century from now. Moreover, its Clow "IPS"* (threaded) Cast Iron Pipe downspouts, drains and waste lines will still be serving faithfully . . . because Clow "IPS" Pipe is corrosion-proof, requires *no* replacement, *no* upkeep. Installation is fast, economical . . . permanent.

*Iron Pipe Size O. D.



Clow "IPS" (threaded) Cast Iron Pipe has the same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random lengths in 4, 6, and 8" sizes.

Clow Cast Iron Pipe can be...

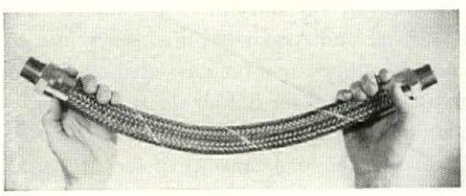


on the job, with ordinary tools of the piping trade.

JAMES B. CLOW & SONS

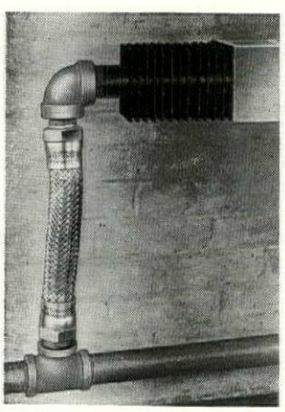
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WHOLESALERS OF PLUMBING AND HEATING SUPPLIES
Publishers of the Clow Bulletin



BENDABLE PIPE links out-of-line outlets, compensates for thermal expansion

The audible clink, clank, clunk manifested by many a wet heat system as it warms up or cools off is just one of the annoying piping situations *Flexpipe* corrects. Hooked into riser and supply lines, the flexible connection of phosphur-bronze (98¾% copper, 1¼% tin) compensates for thermal expansion and contraction, thereby getting to the cause of the sound effects. A length of *Flexpipe*, which is sheathed in wire braid for strength and comes with brass male fittings at both ends, can also be used as link between mis-



aligned outlets on finned tube installations, steam condensate drains and for unit heaters. Attached to compressor lines it dampens much of the noise by absorbing vibration. Price, per assembly, starts at $1.65 for the ¼"-diameter 8" length. Other sizes are made up to 1½", and lengths up to 28".

Manufacturer: American Brass Co., American Metal Hose Branch, Waterbury 20, Conn.

continued on p. 236



Here's What Roofers Say About
RUBEROID SPECIAL ROOFING BITUMEN

These letters prove one point: Ruberoid Special Roofing Bitumen is an *alternate* for coal tar pitch on flat roofs—not a substitute. With tar and pitch again in short supply, it is important that architects, too, recognize Special Bitumen for what it is – an excellent roofing material proven on thousands of jobs for over half a century!

In the old days, famous names in bitumen (Keystone, Imperial, Trinidad Lake, Warren, etc.) were specified by architects even though the cost was 25% to 50% above roofing pitch. Ruberoid Special Bitumen is produced by the same time and job-tested formula with one important difference—*it no longer carries a premium price tag*. In some areas it is actually less expensive than pitch because of transportation costs.

At Ruberoid, we will continue to supply as much pitch as we can produce or obtain. However, deliveries are slow and there just won't be enough for every job in some areas. When writing flat roof specifications, don't jeopardize building schedules because of pitch shortages. Include Ruberoid Special Roofing Bitumen as an alternate. It will do the job just as well—at no additional cost.

Ruberoid will issue its customary 10, 15, or 20-year Surety Bond guarantees on satisfactory application of Ruberoid Specifications when applied by Ruberoid approved roofing contractors on roof deck inclines of 0" to 1" per foot on non-nailable roof decks, and from 0" to 2" per foot on nailable decks, using Ruberoid Special Roofing Bitumen in conjunction with Air-Vent Asphalt Felt as alternates for coal-tar pitch and tarred felt.

The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

It's New! It's Sensational!

VULCAN Baseboard

YEAR-ROUND • HEATING-COOLING

"Home Conditioning"

integrated with famous
VULCAN
TRIMLINE



. . . a new concept in year-round "home conditioning"

Never has there been anything like it — the first integrated year-round baseboard heating-cooling system for the American home.

Advanced engineering that retains 100% of its heating performance and still furnishes a comparable amount of cooling comfort.

In Winter — smooth, balanced distribution of heat from Vulcan's famous TRIMLINE baseboard radiation.

In Summer — controlled flow of "cooled" air from entire length of the same baseboard.

Tested, Proved — exhaustive research plus hundreds of testing hours, both in the laboratory and in the field, have proved the value of Vulcan Baseboard "Home Conditioning."

. . . originators of fin-tube baseboard radiation; and manufacturers of TRIMLINE for residential baseboard heating at its best.

For Descriptive Literature and Data Write to:

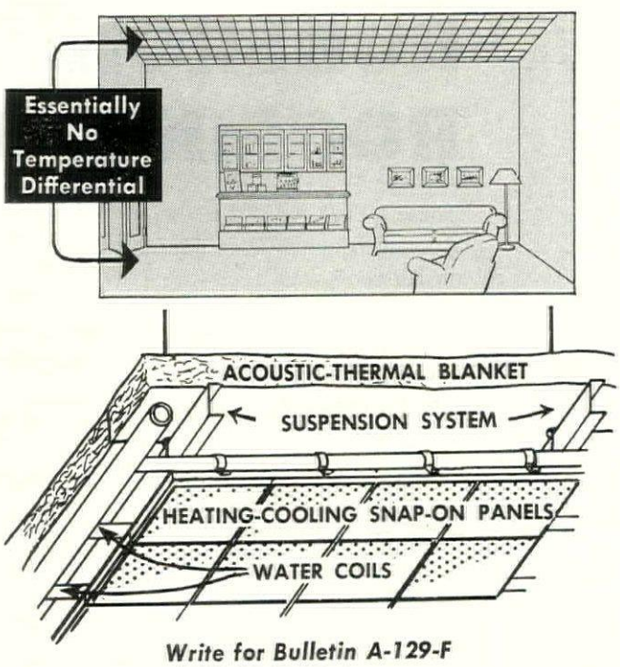
The VULCAN Radiator Company
775 Capitol Ave.
Hartford 6, Connecticut

How well informed are you about the . . .

BURGESS-MANNING 3-Way Radiant Panel Functional Ceiling?

Your clients will be asking!

Yes — word is getting around, as it will when something really good makes its appearance. Here is the most modern, efficient and economical method of heating, cooling and acoustic control ever devised — it's easy to layout, easy to install and competitive in cost. No other method can provide the same uniformity of temperature with essentially no differential from floor to ceiling. It has never been done before. The Burgess-Manning 3-Way Radiant Panel Functional Ceiling is completely self-contained — suspended construction and fully automatic. Know the facts and be prepared to recommend and specify the method that offers a new versatility and substantial savings in space, material and fuel.



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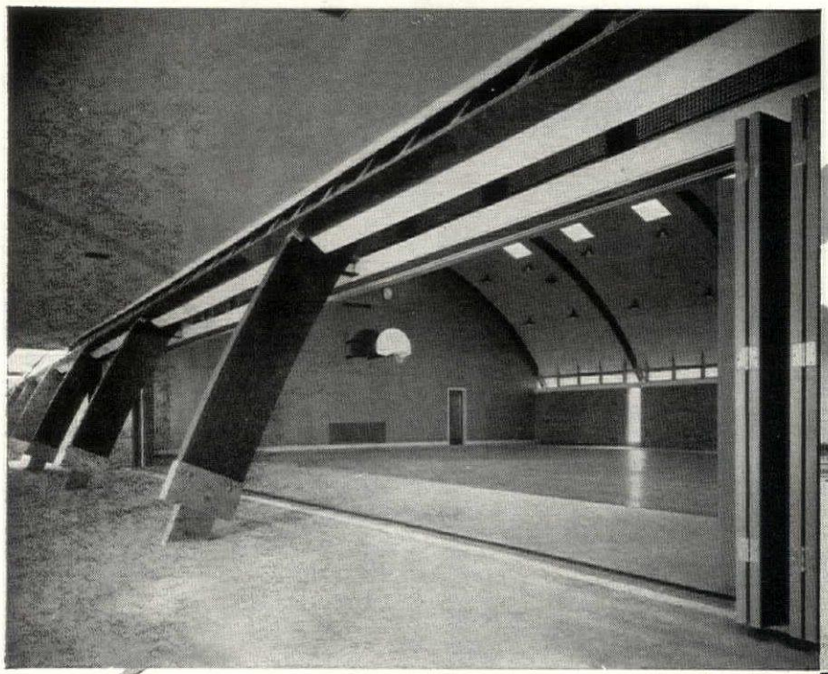
Architectural Products Division of

BURGESS-MANNING COMPANY

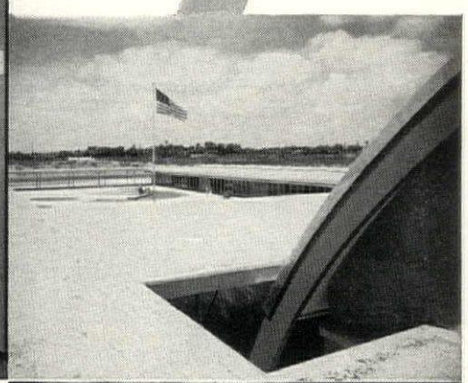
5970 Northwest Highway, Chicago 31, Ill.

Manufacturers of 3-Way Functional Ceilings and Telephone Acousti-Booths

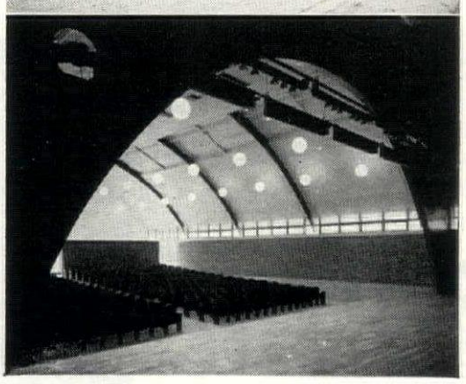
$10 Per Square Foot SCHOOL Uses RILCO ARCHES



modern, efficient design gains national attention







The Mirabeau B. Lamar Junior High School in Laredo, Texas, is unusual in several respects. It was built at the amazing low cost of only $10 per square foot. It incorporated several new design features which have attracted national attention. Using one of the most economical forms of Rilco Laminated Wood Arches, the architects have achieved an unusually interesting, attractive and practical result.

Architects Caudill, Rowlett, Scott & Associates, Bryan, Texas, and A. A. Leyendecker (Associate Architect, Laredo, Texas) are to be complimented on their fresh approach to the ever-present problem . . . low-cost building for maximum efficiency and attractiveness.

The Rilco Glued Laminated Wood Arches used in the construction of the combination auditorium and gymnasium of the school helped keep costs down because of: 1) low original cost; 2) ease of erection, pre-cut and drilled for connection hardware; 3) erected with local labor and equipment.

Rilco Arches are made of selected West Coast Douglas Fir. They are manufactured with modern precision equipment under rigid factory control, and wrapped in heavy water-resistant paper for shipping.

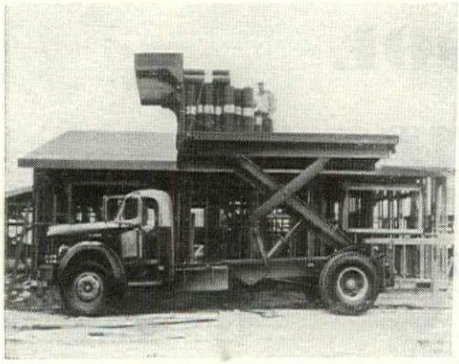
Rilco experienced engineers will be glad to consult with you about your requirements and give "on the job" cooperation. Write now for complete information on Rilco for your jobs.

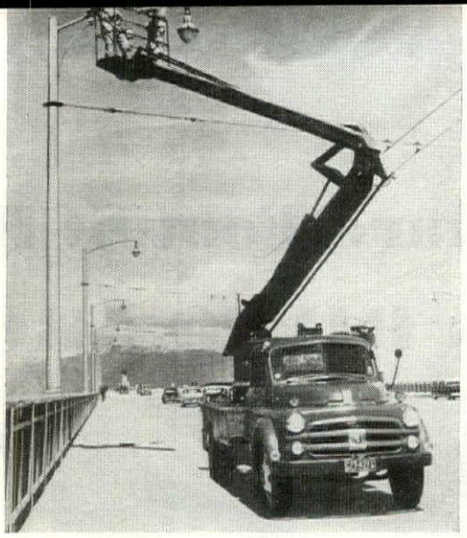
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PRODUCTS

Continued from p. 232



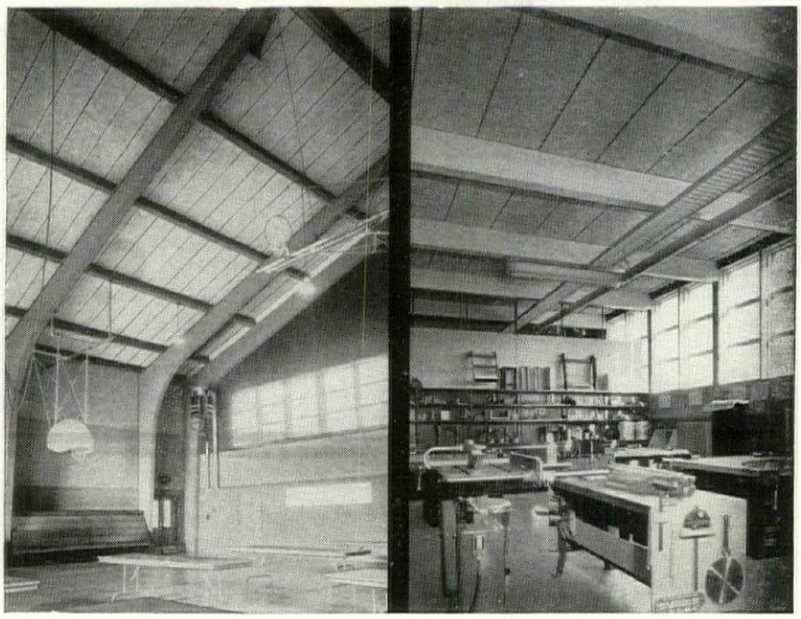




LONG-NECKED TRUCKS simplify materials handling and building maintenance

Developed for Los Angeles' Pioneer Roof Co. by Reo Truck Leasing, Inc., a combination of a Reo truck and a Gar Wood hoist (photo, left) permits the unloading of roofing material and roofers at working level. The truck has a 14′ steel platform, able to carry a net load of 16,000 lb. The scissors hoist can lift the platform 11′ above ground, permitting the unloading of bulky roofing material directly on the roof itself. The outfit can be leased from any of Reo's leasing subsidiaries, or purchased. The truck, including taxes, lists at about $6,900 F.O.B. Lansing; the hoist, installed, is about $2,000.

Manufacturers: Reo Motors, Inc., Lansing 20, Mich. Gar Wood Industries, Inc., Wayne, Mich.



Junior High School, Keene, New Hampshire
3¼" Composite Porex
Architect: J. A. Britton
Gen. Contractor: MacMillan Co.

Indoor maintenance in high bay areas as well as outdoor construction are facilitated by Pitman's Giraffe (middle photo, above) which has an elbowed boom with a 40′ stretch. The *Giraffe* lifts up to 1,500 lb. (without an outrigger, up to 450 lb.), has continuous 360° rotation, features foot-operated controls on the working platform. Operated by its own independent power source, the *Giraffe* is sold as a self-contained unit for $7,250 F.O.B. Kansas City. *Manufacturer:* Pitman Manufacturing Co., 300 W. 79th St., Kansas City 14, Mo.

America's new *Econmobile* hooks a hydraulic hoist onto an industrial tractor for a versatile power lift. Outfitted with pallet fork, the *Econmobile* lifts 1¼ tons of brick, block or mortar 17′ up (and with auxiliary tower, 22′) and deftly deposits the load on a scaffold. Masonry contractors have found that half the men on the job can be freed for more pertinent work and that double handling of material is eliminated. A wide range of attachments increases the truck's usefulness to the general contractor. An aggregate bucket equips it for loading bins with job-mixed concrete. Equipped with a 14 cu. ft. cement bucket, the *Econmobile* can be used to pour concrete walls over open excavations without costly scaffolding. With chain boom, the small tractor will place light structural steel or hoist up roofing. It will also do earth-moving jobs when equipped with dozer blade. Price on basic hoist and tractor assembly is $4,500 F.O.B. Attachments run it up to $5,200.

Manufacturer: American Road Equipment Co., Omaha.

continued on p. 240

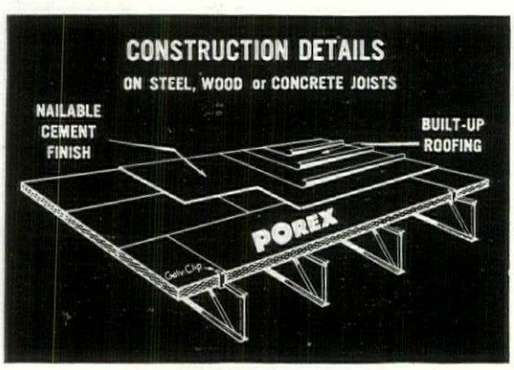
POREX ACOUSTICAL CEILINGS

Heat Insulation, Sound Control and Fire Protection ...all in one ROOF DECK!

When roof decks must provide maximum quality at minimum cost, architect after architect specifies POREX . . . because POREX combines all these properties:

- **STRUCTURAL STRENGTH**
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- **NAILABILITY**
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- **HEAT INSULATION**
- **SOUND CONTROL**

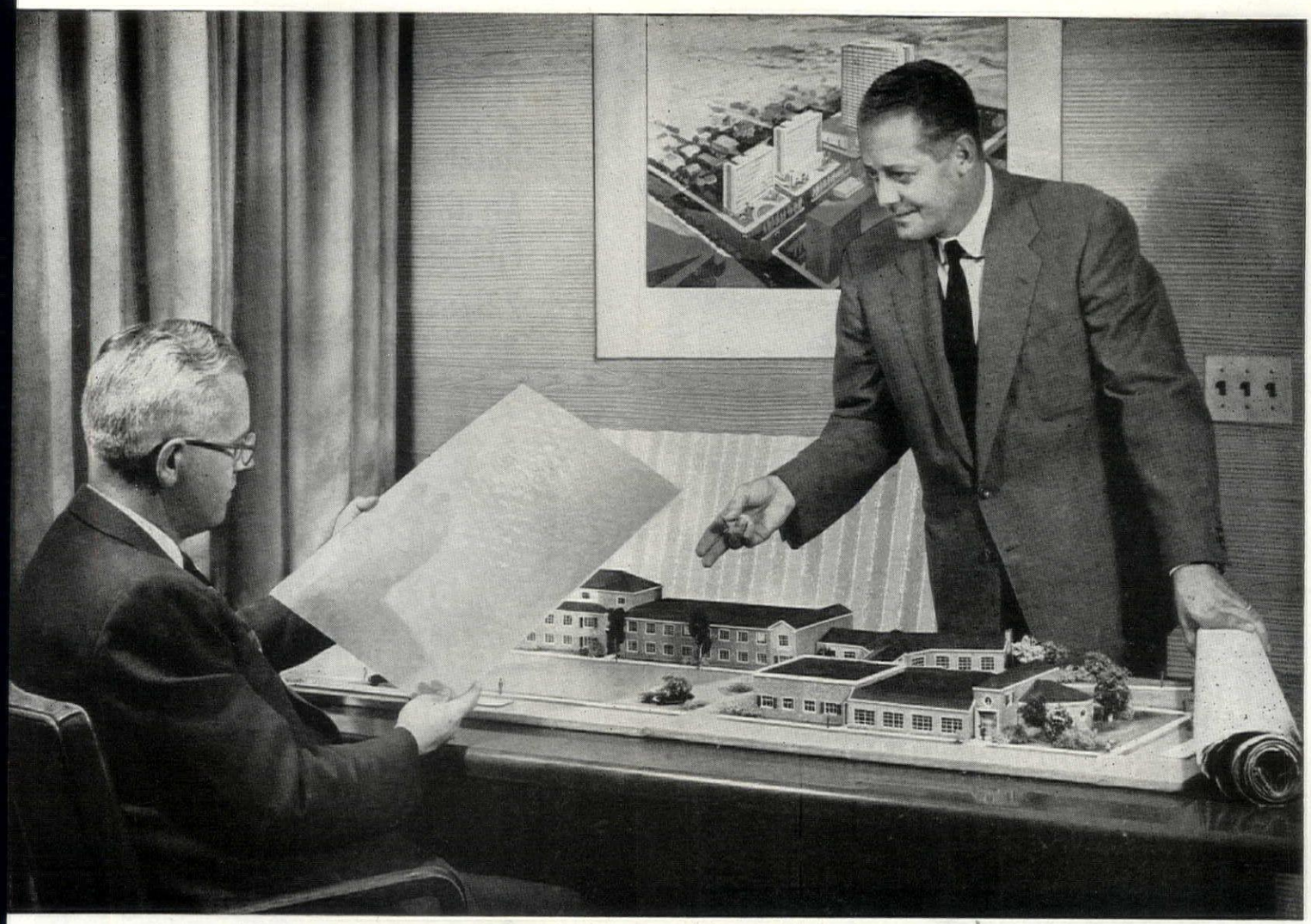
Plain POREX for short spans and Composite POREX for long spans are also ideal for Auditoriums, Gymnasiums, Armories, Churches, Factories and many others.



SAFE UNIFORM LOADS

Type of POREX	Thickness Slab	Thickness Finish	Weight lbs/ Sq. ft.	Safe loads lbs/ sq. ft. span 1′4″	2′8″	3′4″	6	8′
Plain	2″	¼″	7	100	60	—	—	—
Plain	3″	¼″	10	—	90	50	—	—
Composite	3″	¼″	14	—	—	—	100	60

POREX MANUFACTURING CO., North Arlington, N.J.
Precast lightweight concrete products since 1920



For modern building requirements where specific flame resistance is needed, certain fabricators can supply panels and sheets with HETRON polyester.

Hetron's specific flame spread rating makes it possible to utilize the advantages of polyester-glass fiber sheet for interior applications

Now, when clients ask for polyester-glass fiber sheet, or when its use will contribute to utility and beauty, you can specify it even in coded areas where specific flame resistance may be required.

Glass fiber sheet made with HETRON* is self-extinguishing, and has high flame resistance, permanently built in.

Definite flame spread ratings

It has specific flame spread ratings of 75 or less, equivalent to the Building Officials Conference of America classification of "slow-burning." This rating, established in independent laboratory tests, compares with ratings of 100 for red oak and as high as 500 for veneered wood.

You can specify HETRON-based sheet wherever you want the advantage of polyester-glass fiber construction—plus permanent fire resistance. (For exterior applications where ultraviolet exposure will be severe, we suggest you consult with your fabricator or with us.) The sheet is available from fabricators, in a wide range of sizes, gauges, and colors, flat or corrugated, translucent or opaque. It is priced only slightly higher than sheet made with ordinary resins.

We do not make HETRON sheet, but will gladly send you complete information on where to get it. Write also for technical information and flame spread data on HETRON. Names of fabricators are available on request.

**Trade-mark*

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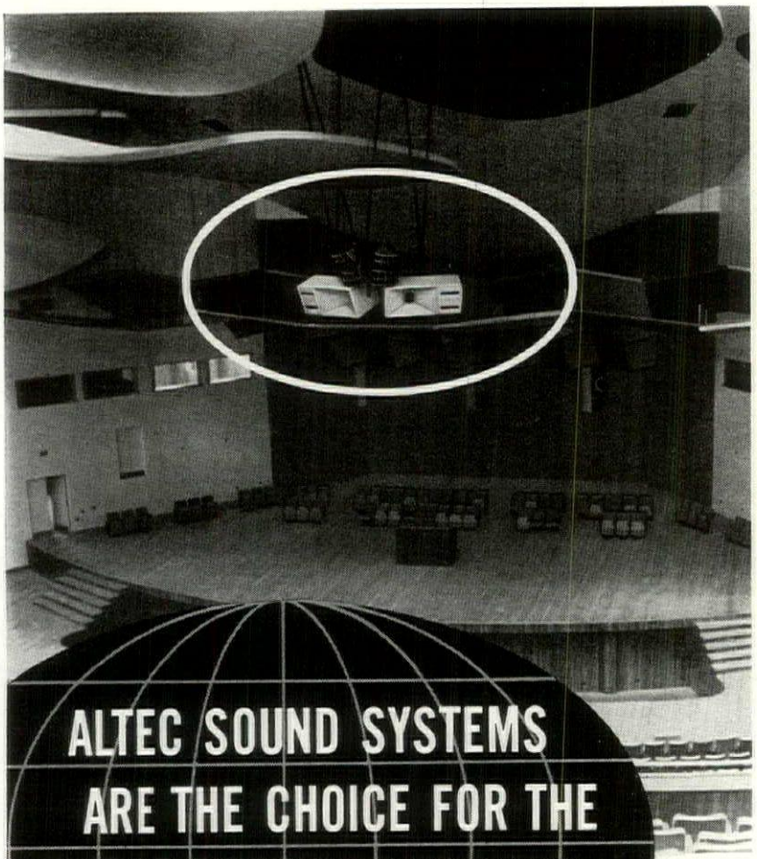
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Altec Lansing public address systems, carefully engineered and installed by an Altec Lansing engineering contractor, give the finest quality performance and years of trouble-free service. Easy to install, easy to service, Altec Lansing equipment is unsurpassed. The Blue Book of Satisfied Altec Lansing Customers lists the newest and finest department stores, schools, hotels, arenas, public buildings and other structures where public address systems are used.

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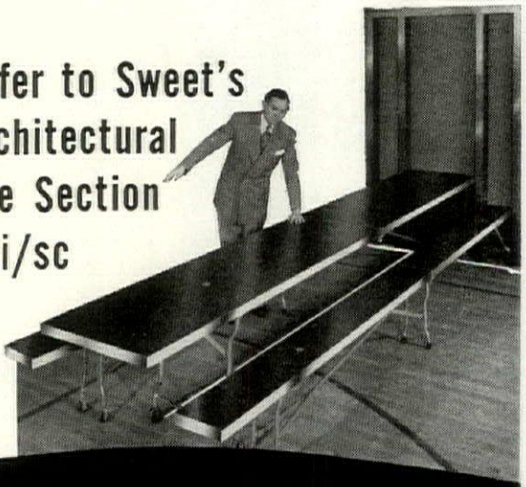
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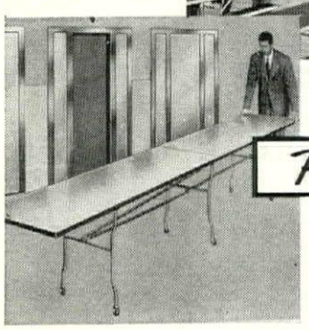
Refer to Sweet's Architectural File Section 22i/sc



Schools can be built for less, using Schieber Tables and Benches



In-wall



Port-a-Fold

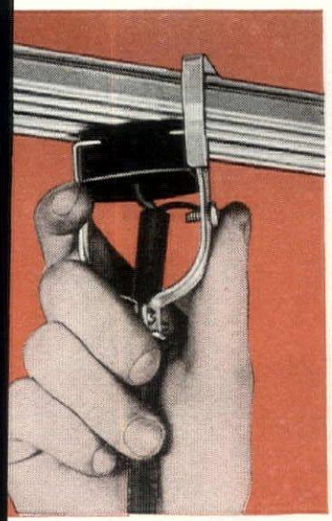
Mobil-Fold
Folding tables and benches also available in mobile truck assembly.

750 architects have met the limited school building budget problem by eliminating a single purpose room from their plans and equipping corridors and activities areas to serve double duty as lunchrooms. This can be done safely with Schieber equipment which has stood the test of time. The first installation made 18 years ago is still in daily use.

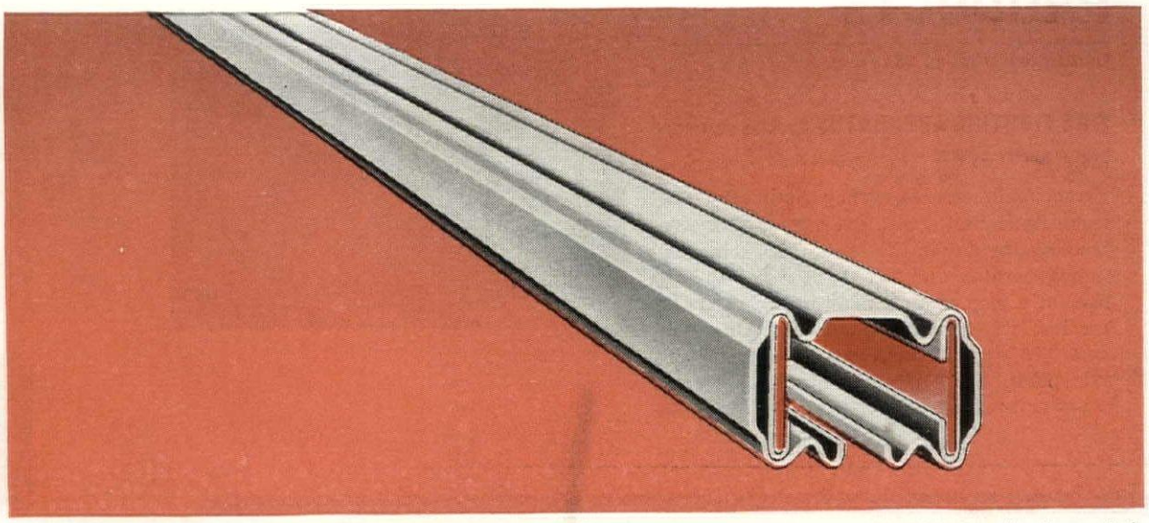
Schieber SALES COMPANY

Write for additional information and prices

Detroit 39, Michigan



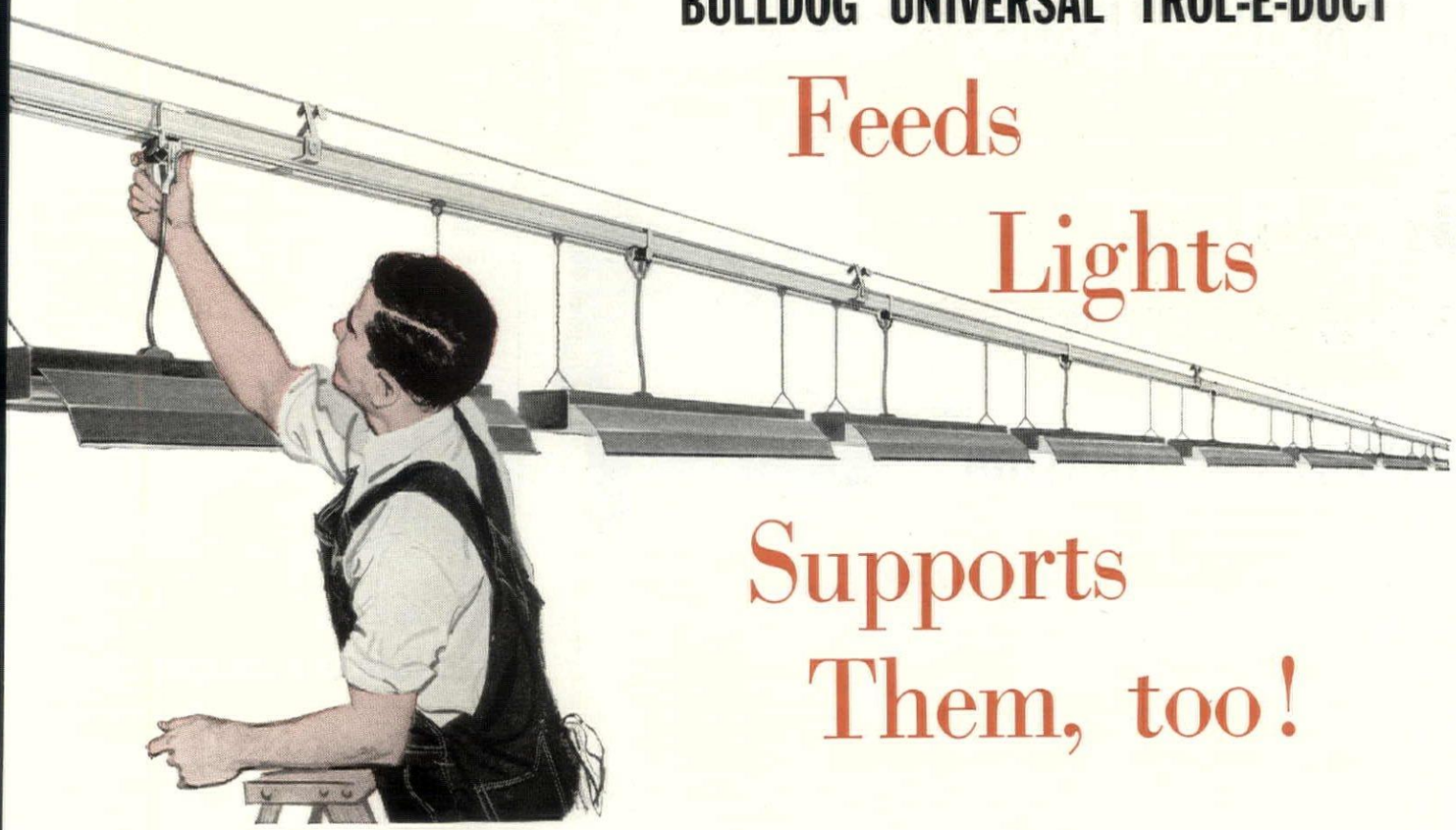
WIST AND LIGHTS ARE CONNECTED. ...og Twistout plugs give safe, positive ...rical connections in seconds.



IT'S A CONTINUOUS OUTLET. Cutaway view shows how copper bus bars run the entire length of Universal Trol-E-Duct, making it every inch an outlet. Moving trolleys that roll effortlessly on steel wheels are also available to bring mobility to small power tools.

BULLDOG UNIVERSAL TROL-E-DUCT

Feeds Lights Supports Them, too!



PROVIDES COMPLETE MOBILITY WITHOUT DOWNTIME OR REWIRING

No need to plan to suspend lights separately. Sturdy Universal Trol-E-Duct®—the *original* bus bar system for lights and small power tools—supports lights in addition to supplying *flexible* power to operate them.

Movable weight supports make it easy to position fixtures where they are needed. Twistout plugs tap power anywhere along the duct. Lights can be arranged, changed, added or removed as desired—without rewiring, power shutoff or downtime. Your clients save on over-all costs . . . get a safer, more efficient system.

Investigate the double utility, double value of BullDog Universal Trol-E-Duct.

Consult your BullDog Field Engineer or Qualified Distributor for all the facts. Or, write: BullDog Electric Products Company, Detroit 32, Michigan.

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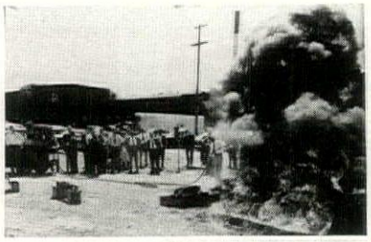
PRODUCTS

Continued from p. 236

FIRE FIGHTING APPARATUS doubles as emergency power source

Versatile Power emergency equipment can make itself useful to plant owners and contractors any day in the week. This combination generator and fire fighter fits in the back of a jeep or on a small materials truck for inside-factory perambulation. Operated by a 3,500-w. A.C. Onan gasoline-driven electric plant, the portable unit can serve as a power source for electric tools and lights







on maintenance and construction jobs, as well as an emergency plant during regular line failures. Its active extinguishing agent of the fire-fighting part of the unit is *Unox*, a product of Carbon & Carbide Chemicals Corp. which, in one test, put out a roaring diesel oil fire in 27 seconds. The unit weighs about 700 lb., measures 30" x 35" x 40", carries its own wide-angle spotlight and enough fuel (2½ gal.) for three hours of operation, and costs about $2,200.

Manufacturer: National Alarms Corp., Lafayette, La.

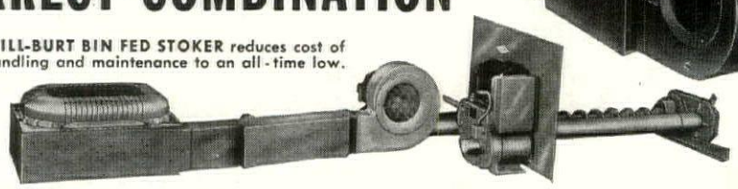
WHENEVER... A Factor of Greater Safety and Low-Cost Heating is of Utmost Importance

WILL-BURT

Coal-Fired STOKERS provide the CORRECT COMBINATION



WILL-BURT HOPPER MODEL STOKER is available in both open and closed models.



WILL-BURT BIN FED STOKER reduces cost of handling and maintenance to an all-time low.

Will-Burt Coal-Fired Stokers are engineered for application to various types of bituminous coal-burning boilers and furnaces for low-cost heating in schools, hospitals, institutions, churches, etc.

Continuous efficient combustion during ever-changing fuel bed conditions is assured with Will-Burt Patented Automatic Air Control—an exclusive device that prevents starving, or an over-supply of air to the fuel bed, as well as eliminating maintenance normally caused by clogging and soot conditions.

Will-Burt Stokers are available in open or closed hopper and bin fed types.

Specify coal heating with a Will-Burt Stoker—it is the preferred method of heating whenever a factor of greater safety and low-cost heating is of utmost importance.



Write on your letterhead or contact your Will-Burt Representative for the Will-Burt Stoker Data Book. It is a manual complete with engineering information, dimensions and installation drawings, suggested specifications, etc. It is a valuable reference book especially prepared for architects and engineers.

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Waylite—the Modern Lightweight Masonry Unit for Walls and Floors. Waylite Co., P.O. Box 30, Bethlehem, Pa. 24 pp. 8½" x 11"

BOLTS

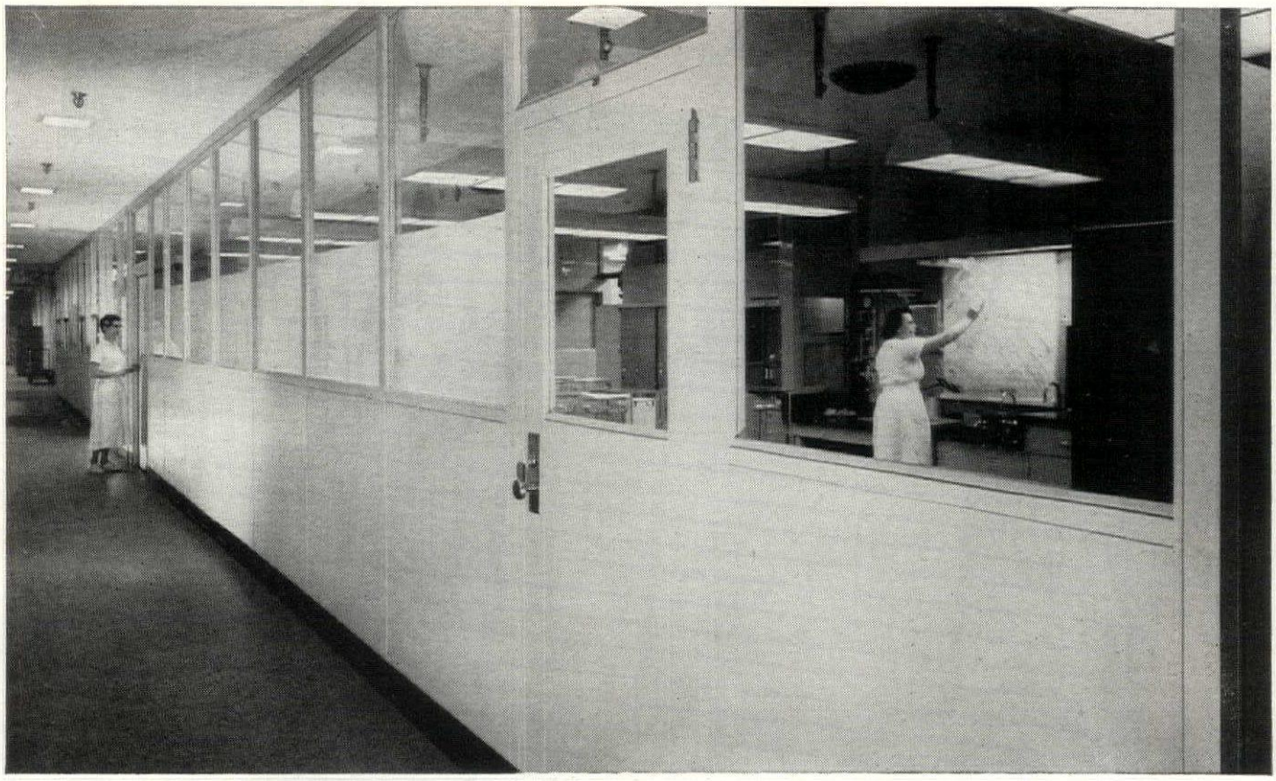
High Strength Structural Steel Bolts. Republic Steel Corp., 3100 E. 45th St., Cleveland 27, Ohio. 8 pp. 8½" x 11"

CEILINGS

Acusti-Luminus Ceiling . . . the Ceiling that Works for You! Luminous Ceilings Inc., 2500 W. North Ave., Chicago 47, Ill. 16 pp. 8½" x 11"

Suspended Metal Lath and Plaster Ceilings, Bul. No. 12. Metal Lath Mfrs. Assn., Engineers Bldg., Cleveland 14, Ohio. 4 pp. 8½" x 11"

continued on p. 244



HAUSERMAN MOVABLE WALLS

Save $86,223 in 15 Years

IN UPJOHN RESEARCH LABORATORY BUILDING

SINCE 1939, revolutionary developments in pharmaceuticals have resulted in constantly changing floor space requirements for leading producers in that field. The Upjohn Company, Kalamazoo, Michigan, has found it easy to meet those fast-changing space requirements . . . easy to maintain high efficiency in its Research Laboratory Building . . . with walls that can be taken down and re-erected again and again —Hauserman *Movable* Walls.

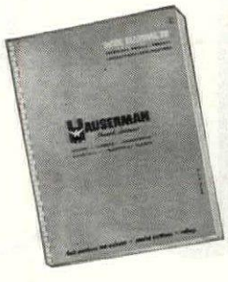
To meet these necessary rearrangements with ordinary tile and plaster walls would have cost approximately $167,373 . . . not including the expense of lost productive time during remodeling. With Hauserman *Movable* Walls, the rearrangements have been made in hours, rather than in weeks, at a savings of $86,223.

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Free Data Manual 55

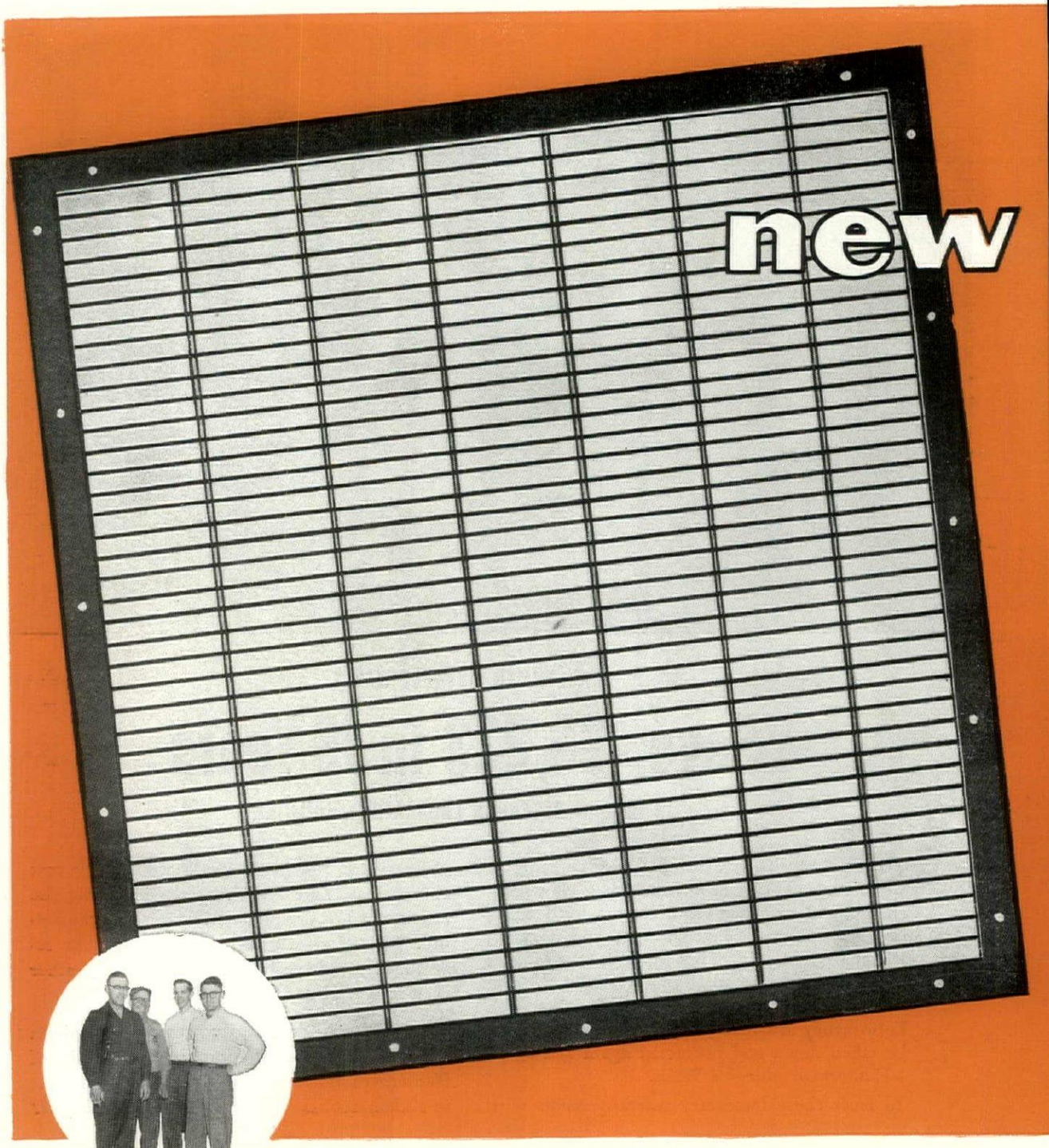
New 100-page guide for architects contains complete technical details, stock sizes and specifications on *all* types of Hauserman *Movable* Interiors. If you do not already have this new data manual, send for your copy today!

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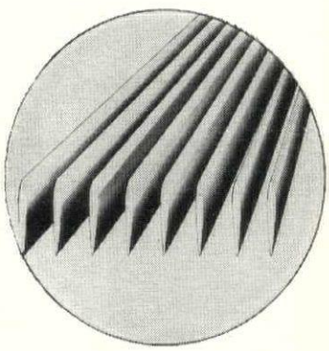
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PRODUCTS

Continued from p. 240

DOORS AND WINDOWS

Ellison—the Balanced Door. Ellison Bronze Co., Inc., Jamestown, N.Y. 8 pp. 8½" x 11"

Specifications 1955—Aluminum Windows. Aluminum Window Mfrs. Assn., 74 Trinity Pl., New York 6, N.Y. 24 pp. 8½" x 11"

FLOORING

Concrete Floors Now . . . and for the Future. Kalman Floor Co., 110 E. 42nd St., New York, N.Y. 28 pp. 8½" x 11"

Vinyl-Cork Tile and Standard Cork Tile, Catalogue 55. Dodge Cork Co., Inc., Lancaster, Pa. 8 pp. 8½" x 11"

FRAMING

Artcor Building Specialties—joist hangers and miscellaneous building specialties. Arch Rib Truss Corp., P. O. Box 6742, Los Angeles 22, Calif. 4 pp. 8½" x 11"

GYPSUM

Gold Bond Product Specification Directory, Bul. 2119. National Gypsum Co., 325 Delaware Ave., Buffalo 2, N.Y. 6 pp. 8½" x 11"

HEATING, VENTILATING AND AIR CONDITIONING

Atmospheric Spray Cooling Towers. Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. 12 pp. 8½" x 11"

Kewanee Boilers for . . . Heating, Power and Process Steam. Kewanee-Ross Corp., Kewanee, Ill. 32 pp. 8½" x 11"

National Commercial Steel Boilers, Catalogue No. 675. The National Radiator Co., Johnstown, Pa. 8 pp. 8½" x 11"

"Perimaheat" Baseboard Convectors. Young Radiator Co., Racine, Wis. 12 pp. 8½" x 11"

The Record of Ruud Automatic Gas Water Heaters in Public Housing. Ruud Mfg. Co., 2934 Smallman St., Pittsburgh 1, Pa. 24 pp. 8½" x 11"

Worthington Packaged Liquid Chillers, Bul. C-1100-B52. Worthington Corp., Harrison, N.J. 16 pp. 8½" x 11"

Young Air Conditioning Units, Catalogue No. 7554. Young Radiator Co., Racine, Wis. 32 pp. 8½" x 11"

INSULATION

Aerocor Insulations. Owens-Corning Fiberglas Corp., Toledo, Ohio. 8 pp. 8½" x 11"

KITCHEN EQUIPMENT

Product Catalogues—including directory of products and directory of members. National Assn. of Food Equipment Mfrs., 261 Madison Ave., New York 16, N.Y. 157 pp. 8½" x 11" spiral bound.

LAVATORY EQUIPMENT

Puritan 600—solid molded toilet seat data sheet, Bul. L-8860. Century Plastic Products, Inc., 8219 Almira Ave., Cleveland 2, Ohio.

Soap Equipment File Folder. West Disinfecting Co., 42-16 West St., Long Island City 1, N.Y. 9½" x 11¾"

LIGHTING

The ABC's of School Lighting, Booklet B-4556-B. Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa. 20 pp.

Starring Fluorescent-lamp Ballasts. Starring & Co., Inc., 1600 Seaview Ave., Bridgeport 8, Conn. 12 pp. 8½" x 11"

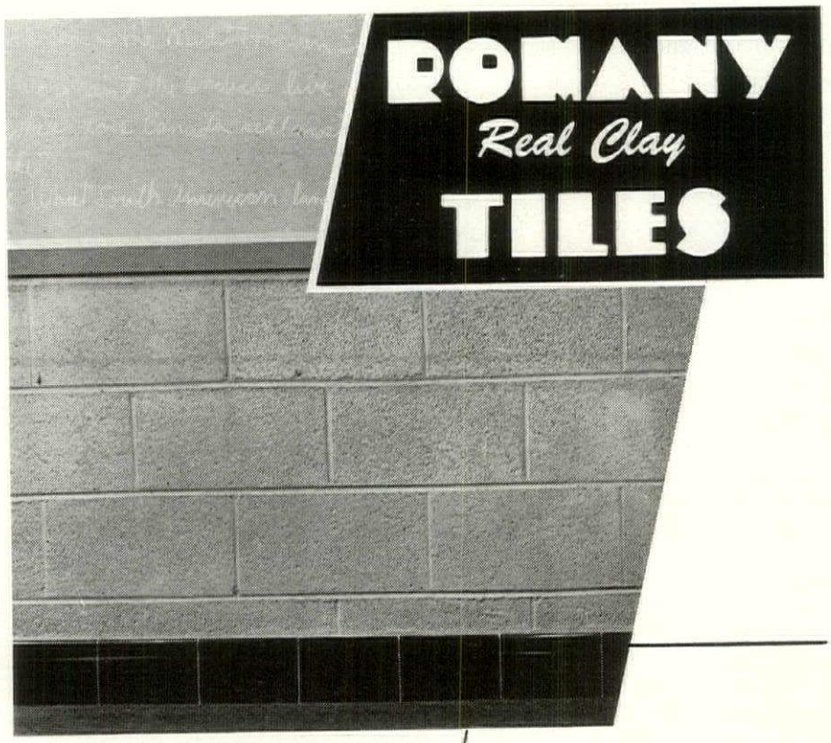
LOCKER-ROOM DESIGN

Design File—Industrial and Institutional Locker Rooms. The Moore Co., 1036 Quarrier St., Charleston, W. Va. 40 pp. 8½" x 11"

MATERIALS HANDLING

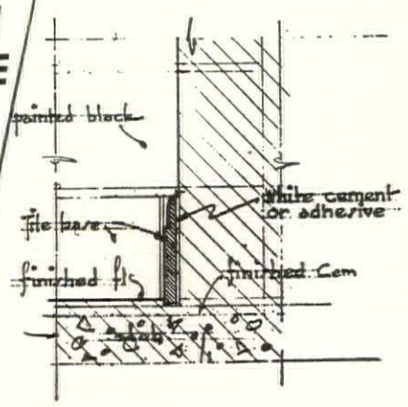
Hand Lift-Pallet Trucks. Yale & Towne Mfg.

continued on p. 248



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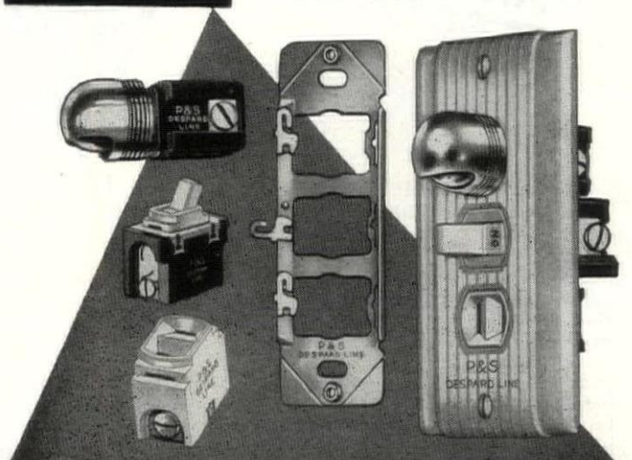
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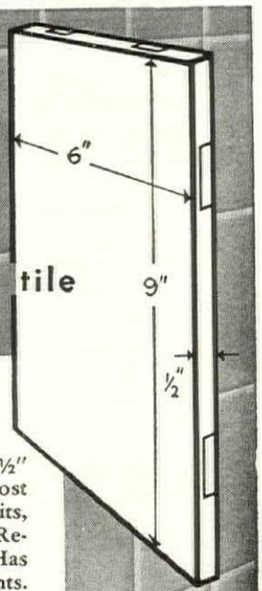
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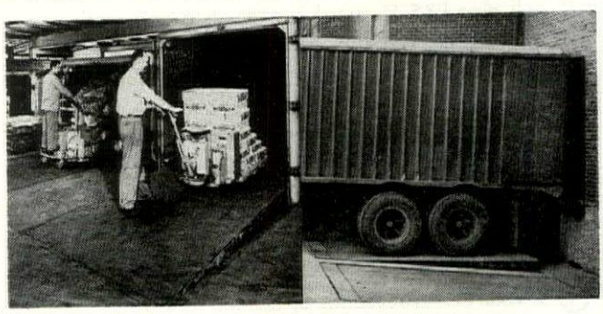
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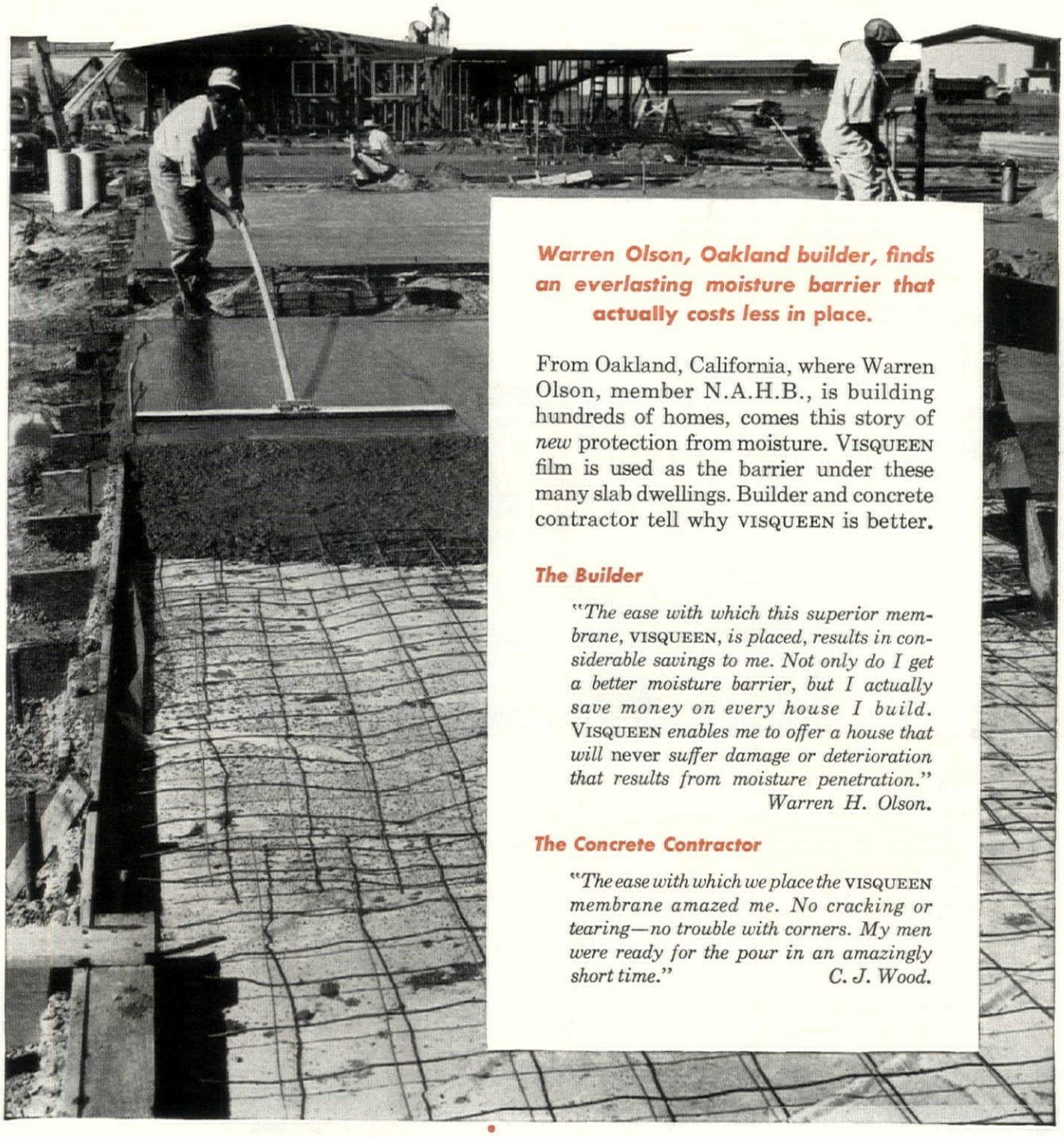


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PRODUCTS

Continued from p. 244

Co., 11,000 Roosevelt Blvd., Philadelphia 15. 12 pp. 8½" x 11"

Pneumatic Conveying Systems. Convair, Pittsburgh, Pa. 12 pp. 8½" x 11"

Style "HA" Lumber Hoists. B. M. Root Co., York, Pa. 4 pp. 8½" x 11"

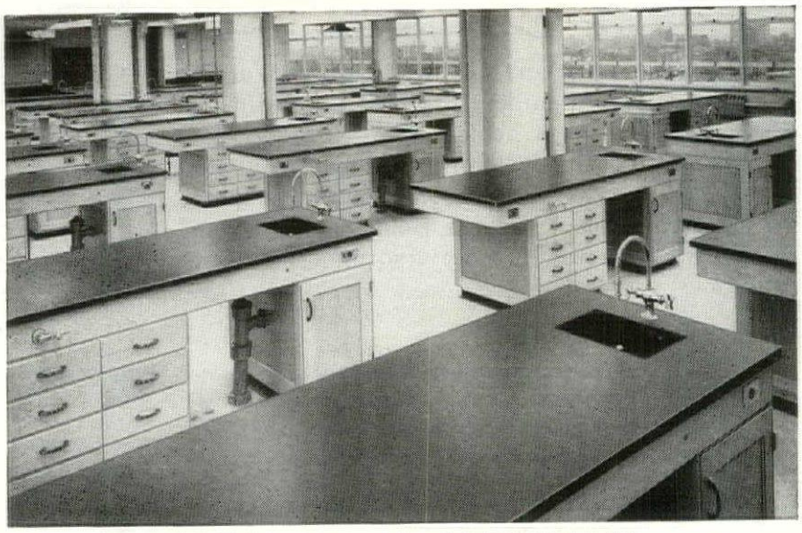
METALS

A. W. Dynalloy—low alloy, high strength, flat rolled steel, Booklet D-109. Alan Wood Steel Co., Conshohocken, Pa. 8 pp. 6" x 9"

Wall chart listing new aluminum products. Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland 12, Calif. 3 p. foldout. 8½" x 11"

PARTITIONS

Toilet Compartments, Hospital Cubicles and All-Metal Shower Units. Mills Metal Compartment Co., 997 Wayside Rd., Cleveland 10, Ohio. 20 pp. 8½" x 11"



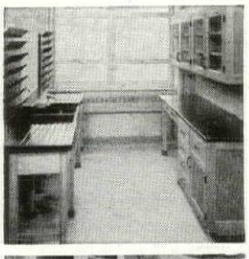
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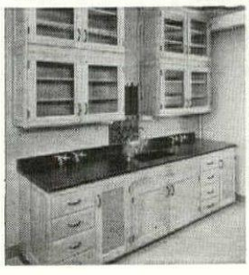


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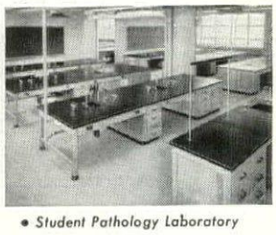
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PIPES

Byers Wrought Iron Pipe Data Sheet. Engineering Service Dept., A. M. Byers Co., Pittsburgh, Pa. 1 p. 8½" x 11"

PLUMBING

Streamline Copper, Tube, Fittings, Valves, Catalogue No. S-354. Mueller Brass Co., Port Huron, Mich. 52 pp. 8½" x 11"

PLYWOOD

Eight Plywood Products for Architects and Builders. Associated Plywood Mills, Inc., Box 672, Eugene, Ore. 4 pp. 8½" x 11"

PROTECTIVE COATINGS

Metal Protection and Paint Bonding for Aluminum, Zinc and Steel. American Chemical Paint Co., Ambler, Pa. 4 pp. 8½" x 11"

RADIATION PROTECTION

Bar-Ray Catalogue. Bar-Ray Products, Inc., 209 25th St., Brooklyn 32, N.Y. 56 pp. 8½" x 11"

ROOFING AND SIDING

V-Corr Industrial Roofing and Siding. The Bettinger Corp., Waltham, Mass. 8 pp. 8½" x 11"

STORAGE

How to Solve Your Storage Problem. Equipto Division, Aurora Equipment Co., 100 Prairie Ave., Aurora, Ill.

"See-Thru" Plastic Drawer Cabinets. General Industrial Co., 5725 N. Elston, Chicago 30, Ill. 24 pp. 5¼" x 8¼"

SWIMMING POOLS

Adams Swimming Pool Filters for Crystal Clear Water, Bul. No. 625. R. P. Adams Co., Inc., Buffalo 17, N.Y. 24 pp. 8½" x 11"

Swimming Pool Pump Bulletin. Marlow Pumps, Division of Bell Gossett Co., Ridgewood, N.J. 6 pp. 8½" x 11"

WELDING

General Products Catalogue, ADC 662B. Air Reduction Sales Co., 60 E. 42nd St.. New York 17, N.Y. 50 pp. 8½" x 11"

Hand Torches for Gas Cutting and Welding, Catalogue ADC 702B. Air Reduction Sales Co., 60 E. 42nd St., New York 17, N.Y. 36 pp. 8½" x 11"

WINDOWS AND DOORS

Jamison Super Freezer Doors, Section 5. Jamison Cold Storage Door Co., Hagerstown, Md. 14 pp. 8½" x 11"

Superwall All Aluminum Window Wall. Superior Window Co., 5300 N.W. 37th Ave., Miami 42, Fla. 4 pp. 8½" x 11"

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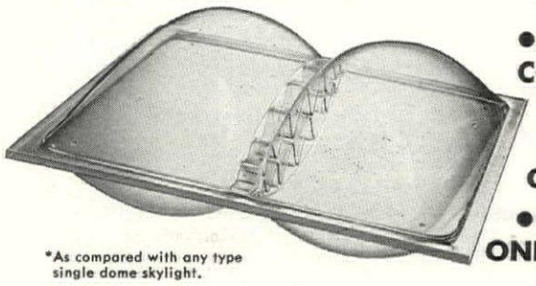
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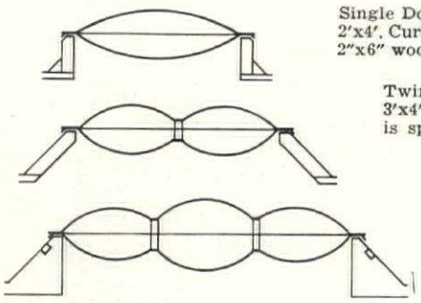
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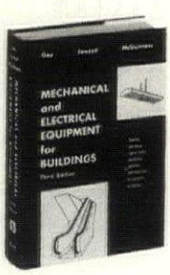
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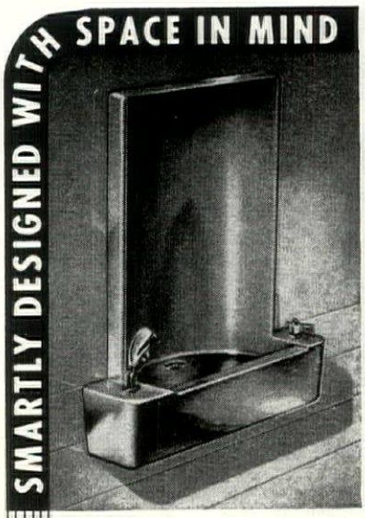




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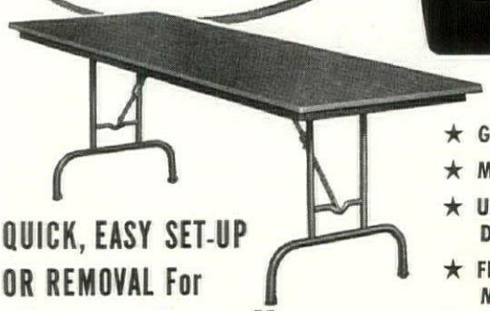
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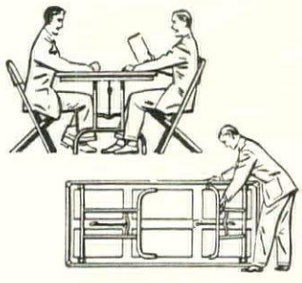
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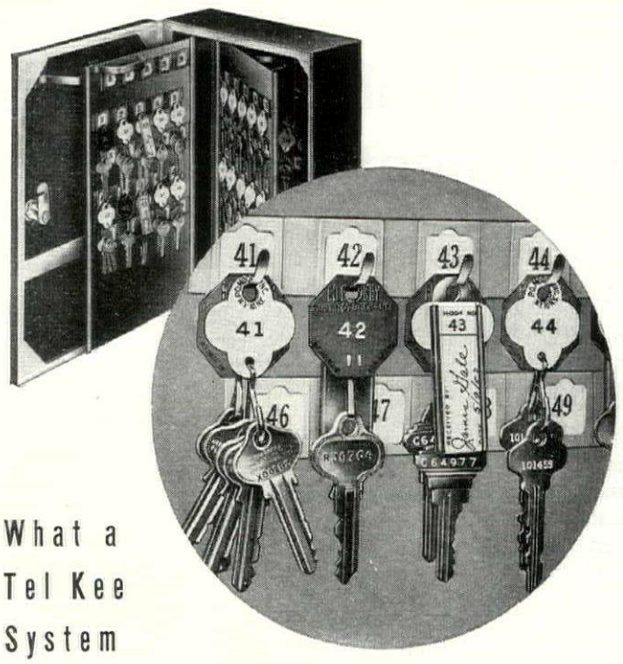


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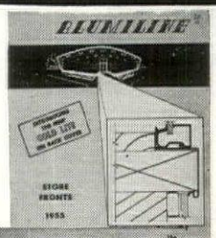
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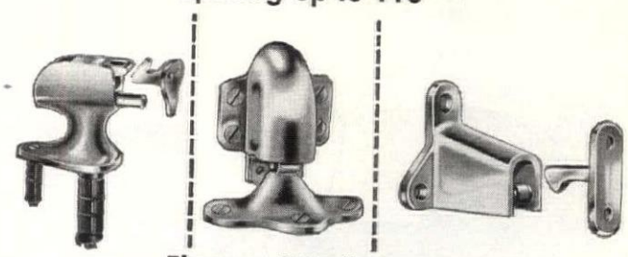


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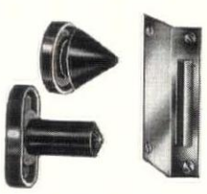


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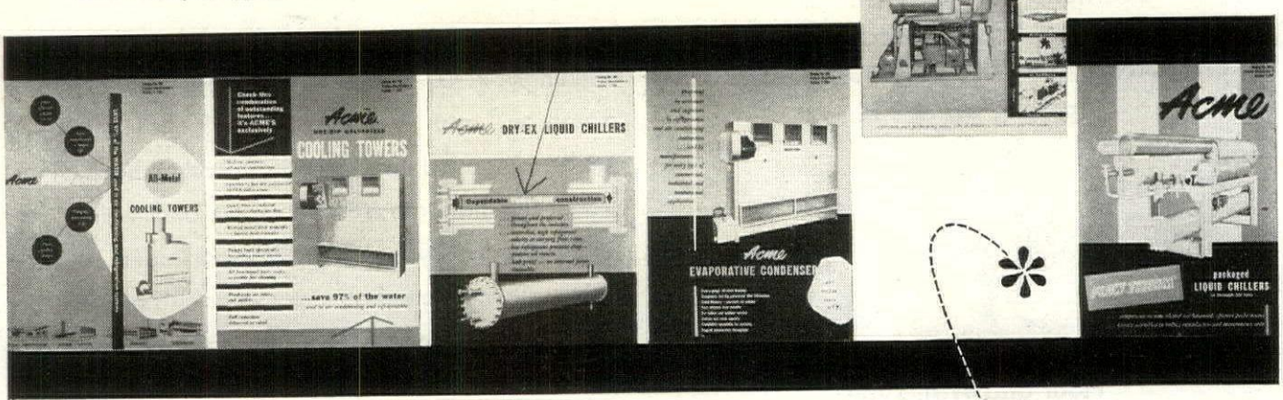
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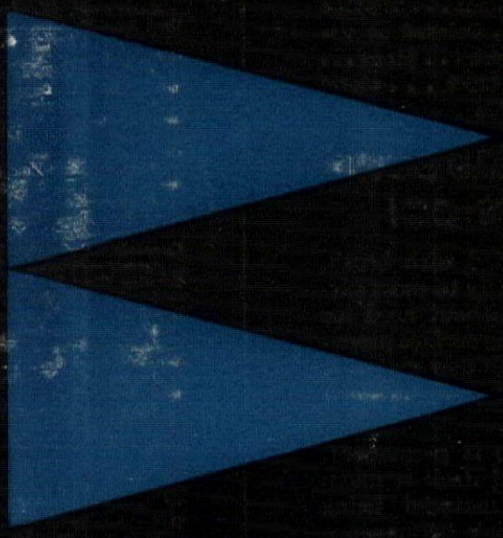
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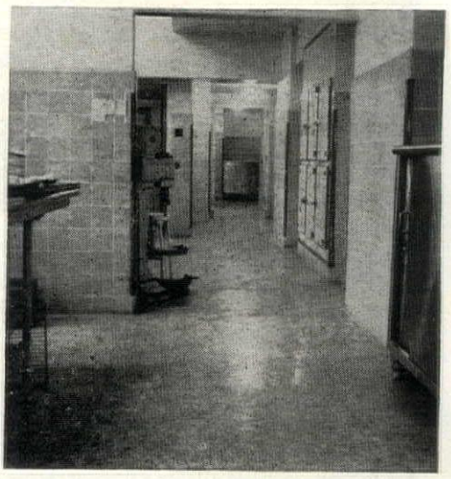
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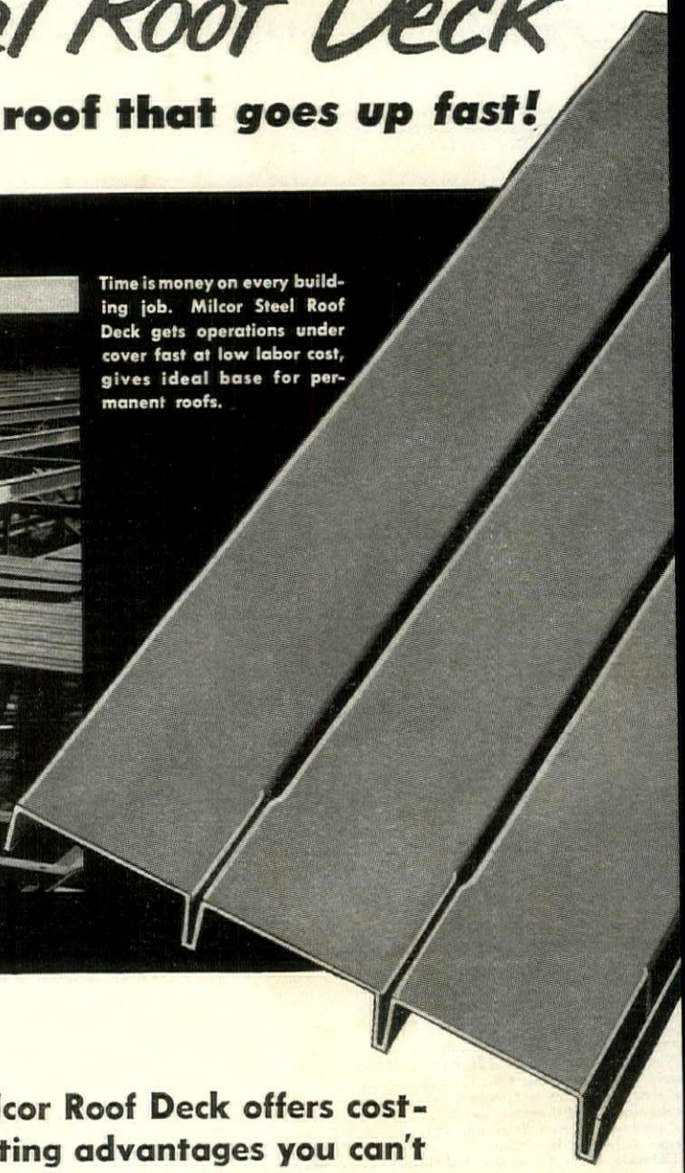
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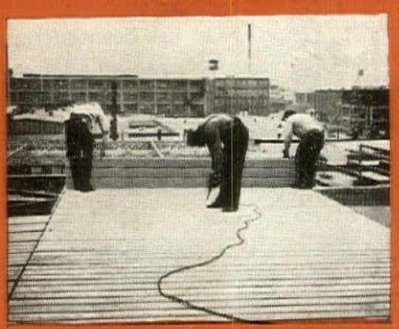
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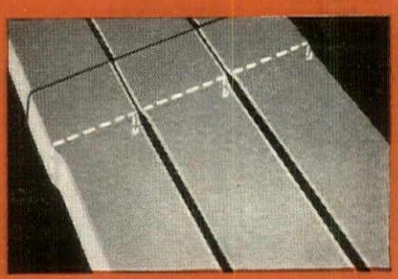
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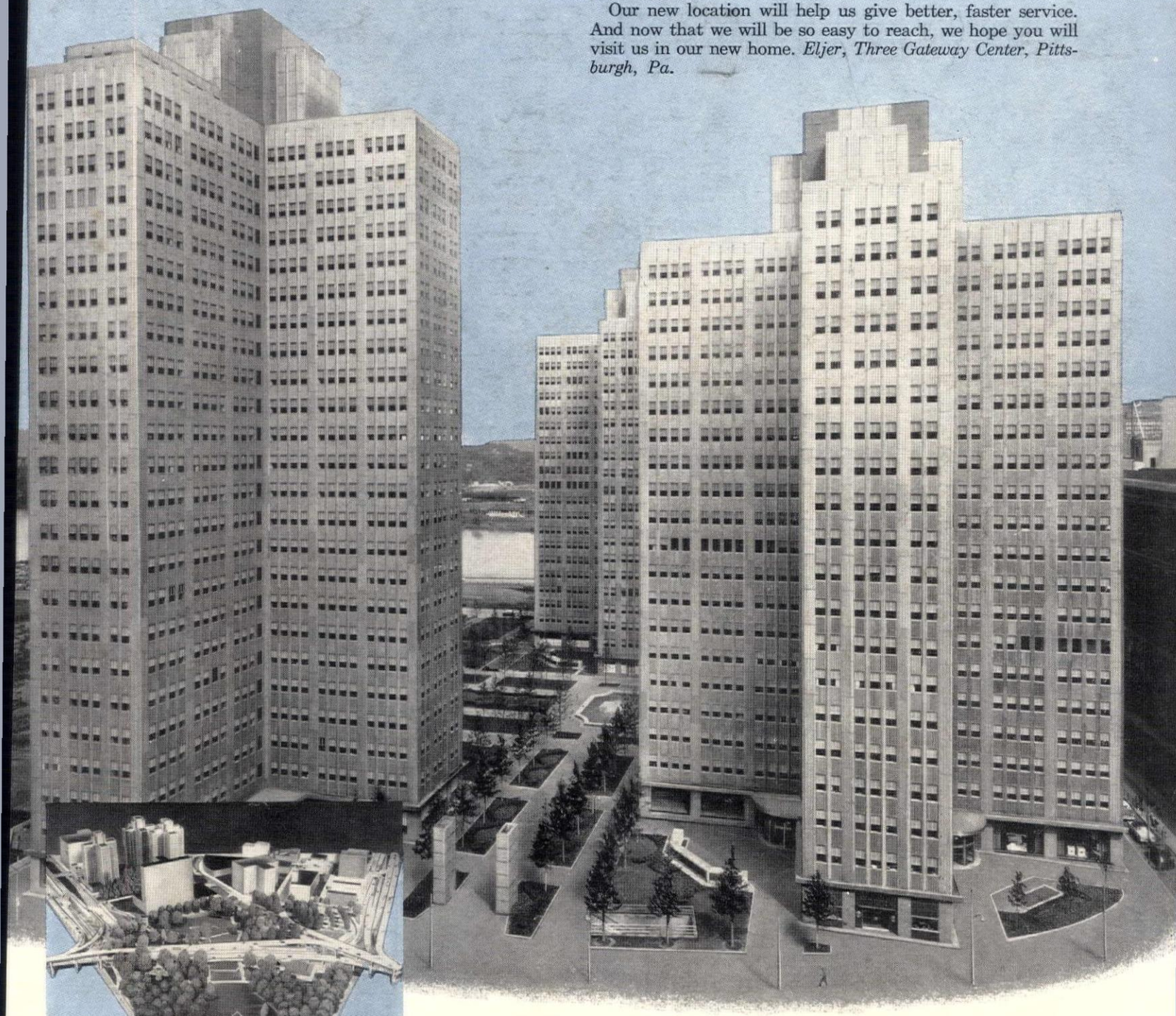
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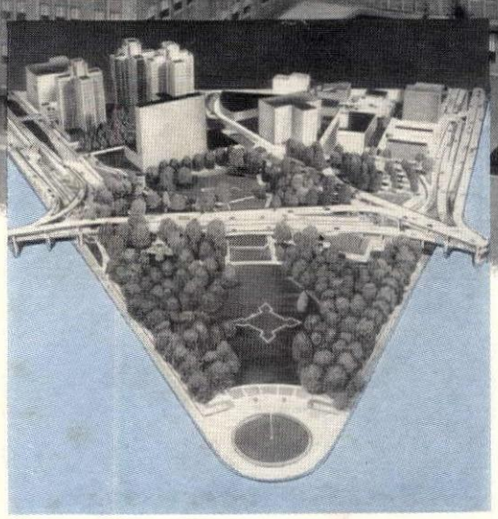
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